WEBVTT

NOTE duration: ”01:06:06.520”

NOTE Confidence: 0.73043007

00:02:07.555 --> 00:02:08.595 Might have a little bit

NOTE Confidence: 0.73043007

00:02:08.595 --> 00:02:09.575 more. Okay.

NOTE Confidence: 0.99786615

00:02:10.275 --> 00:02:12.115 Alright. Good afternoon, everyone. We'll

NOTE Confidence: 0.99786615

00:02:12.115 --> 00:02:13.655 get started right on time.

NOTE Confidence: 0.94884145

00:02:14.210 --> 00:02:15.090 So for those of you

NOTE Confidence: 0.94884145

00:02:15.090 --> 00:02:16.210 who haven't met, I'm Patty

NOTE Confidence: 0.94884145

00:02:16.210 --> 00:02:17.669 Chung. I'm an assistant professor

NOTE Confidence: 0.94884145

00:02:17.730 --> 00:02:19.190 in the basic science department

NOTE Confidence: 0.94884145

00:02:19.330 --> 00:02:20.150 of cardiology,

NOTE Confidence: 0.8635931

00:02:20.690 --> 00:02:21.330 and I'm part of the

NOTE Confidence: 0.8635931

00:02:21.330 --> 00:02:22.310 Grand Rounds committee.

NOTE Confidence: 0.9692507

00:02:22.610 --> 00:02:24.130 And so please, text in

NOTE Confidence: 0.9692507

00:02:24.130 --> 00:02:25.570 if you haven't already. Just

NOTE Confidence: 0.9692507

00:02:25.570 --> 00:02:26.690 a reminder of the upcoming

NOTE Confidence: 0.9692507

00:02:26.690 --> 00:02:27.750 Grand Rounds events.

NOTE Confidence: 0.9697153

00:02:30.834 --> 00:02:32.194 The next few guest speakers

NOTE Confidence: 0.9697153

00:02:32.194 --> 00:02:33.235 we're going to have, is

NOTE Confidence: 0.9697153

00:02:33.235 --> 00:02:34.355 next week we'll have doctor

NOTE Confidence: 0.9697153

00:02:34.355 --> 00:02:34.855 Rajesh

NOTE Confidence: 0.8633264

00:02:35.875 --> 00:02:37.095 Vedantan from NYU,

NOTE Confidence: 0.93593234

00:02:37.794 --> 00:02:39.635 followed by another ambulatory case

NOTE Confidence: 0.93593234

00:02:39.635 --> 00:02:41.819 conference and, doctor Mark Palatier

NOTE Confidence: 0.93593234

00:02:41.879 --> 00:02:43.239 from Yale's own cardiac surgery

NOTE Confidence: 0.93593234

00:02:43.239 --> 00:02:43.739 department

NOTE Confidence: 0.9564049

00:02:44.040 --> 00:02:45.239 and doctor Mark Petrie. So

NOTE Confidence: 0.9564049

00:02:45.239 --> 00:02:46.040 please put these events on

NOTE Confidence: 0.9564049

00:02:46.040 --> 00:02:46.780 your calendars.

NOTE Confidence: 0.95957917

00:02:47.480 --> 00:02:49.079 A quick remind reminder that

NOTE Confidence: 0.95957917

00:02:49.079 --> 00:02:50.599 CVM faculty retreat is this

NOTE Confidence: 0.95957917

00:02:50.599 --> 00:02:52.599 upcoming Monday, October sixth. Everyone

NOTE Confidence: 0.95957917

00:02:52.599 --> 00:02:53.799 should have received a calendar

NOTE Confidence: 0.95957917

00:02:53.799 --> 00:02:54.919 invite, so please do your

NOTE Confidence: 0.95957917

00:02:54.919 --> 00:02:55.755 best to attend.

NOTE Confidence: 0.98989606

00:02:56.155 --> 00:02:56.955 And so with that, we'll

NOTE Confidence: 0.98989606

00:02:56.955 --> 00:02:58.014 kick off this case.

NOTE Confidence: 0.97889704

00:02:58.555 --> 00:03:00.235 So, it's my great pleasure

NOTE Confidence: 0.97889704

00:03:00.235 --> 00:03:00.895 to introduce

NOTE Confidence: 0.94555545

00:03:01.355 --> 00:03:03.035 two leaders of our discussion

NOTE Confidence: 0.94555545

00:03:03.035 --> 00:03:04.955 today. First is doctor Tarek

NOTE Confidence: 0.94555545

00:03:04.955 --> 00:03:06.155 Ali of the MBA who

NOTE Confidence: 0.94555545

00:03:06.155 --> 00:03:07.355 is an assistant professor of

NOTE Confidence: 0.94555545

00:03:07.355 --> 00:03:09.069 medicine at Yale. He's originally

NOTE Confidence: 0.94555545

00:03:09.069 --> 00:03:10.590 from Connecticut and earned,

NOTE Confidence: 0.99601287

00:03:11.150 --> 00:03:12.510 his college degree from Harvard

NOTE Confidence: 0.99601287

00:03:12.510 --> 00:03:13.010 University,

NOTE Confidence: 0.9720855

00:03:13.310 --> 00:03:14.590 his medical degree from Brown

NOTE Confidence: 0.9720855

00:03:14.590 --> 00:03:16.430 University, and completed his MBA

NOTE Confidence: 0.9720855

00:03:16.430 --> 00:03:17.950 at Harvard Business School. He

NOTE Confidence: 0.9720855

00:03:17.950 --> 00:03:19.389 trained in internal medicine at

NOTE Confidence: 0.9720855

00:03:19.389 --> 00:03:20.590 the hospital of the University

NOTE Confidence: 0.9720855

00:03:20.590 --> 00:03:21.250 of Pennsylvania,

NOTE Confidence: 0.9806321

00:03:21.695 --> 00:03:23.235 followed by fellowships in cardiovascular

NOTE Confidence: 0.9806321

00:03:23.294 --> 00:03:25.055 medicine at Tufts Medical Center

NOTE Confidence: 0.9806321

00:03:25.055 --> 00:03:26.415 and critical care medicine at

NOTE Confidence: 0.9806321

00:03:26.415 --> 00:03:27.715 the Mayo Clinic in Rochester.

NOTE Confidence: 0.95759827

00:03:28.175 --> 00:03:29.775 His clinical and research interests

NOTE Confidence: 0.95759827

00:03:29.775 --> 00:03:31.855 focus on acute cardiovascular care,

NOTE Confidence: 0.95759827

00:03:31.855 --> 00:03:33.535 quality and process improvements, and

NOTE Confidence: 0.95759827

00:03:33.535 --> 00:03:34.675 care delivery operations.

NOTE Confidence: 0.97168976

00:03:35.240 --> 00:03:36.520 Joined by doctor Tarek Ali

NOTE Confidence: 0.97168976

00:03:36.520 --> 00:03:38.040 today is doctor Divya Iyer,

NOTE Confidence: 0.97168976

00:03:38.040 --> 00:03:39.319 MD, who is a third

NOTE Confidence: 0.97168976

00:03:39.319 --> 00:03:41.500 year clinical cardiovascular medicine fellow.

NOTE Confidence: 0.97168976

00:03:41.560 --> 00:03:42.599 She is also a Connecticut

NOTE Confidence: 0.97168976

00:03:42.599 --> 00:03:44.040 native who attended University of

NOTE Confidence: 0.97168976

00:03:44.040 --> 00:03:45.640 Connecticut for college and medical

NOTE Confidence: 0.97168976

00:03:45.640 --> 00:03:47.319 school before completing her internal

NOTE Confidence: 0.97168976

00:03:47.319 --> 00:03:48.599 medicine residency at the Mount

NOTE Confidence: 0.97168976

00:03:48.599 --> 00:03:50.505 Sinai Hospital. Her interest in

NOTE Confidence: 0.97168976

00:03:50.505 --> 00:03:52.665 cardiology include providing excellent clinical

NOTE Confidence: 0.97168976

00:03:52.665 --> 00:03:54.025 and procedural care to a

NOTE Confidence: 0.97168976

00:03:54.025 --> 00:03:55.485 diverse patient population,

NOTE Confidence: 0.987199

00:03:55.944 --> 00:03:57.944 ensuring health equity, and mentoring

NOTE Confidence: 0.987199

00:03:57.944 --> 00:03:58.444 underrepresented

NOTE Confidence: 0.9676827

00:03:58.825 --> 00:04:00.665 trainees into the field. And

NOTE Confidence: 0.9676827

00:04:00.665 --> 00:04:01.785 doctor Iyer is planning to

NOTE Confidence: 0.9676827

00:04:01.785 --> 00:04:03.245 pursue a fellowship in cardiac

NOTE Confidence: 0.9676827

00:04:03.305 --> 00:04:03.805 electrophysiology

NOTE Confidence: 0.9676709

00:04:04.345 --> 00:04:05.379 next year. So with that,

NOTE Confidence: 0.9676709

00:04:05.379 --> 00:04:06.500 I'd love to really welcome

NOTE Confidence: 0.9676709

00:04:06.500 --> 00:04:08.260 doctor Ollian Iyer for presenting

NOTE Confidence: 0.9676709

00:04:08.260 --> 00:04:09.080 today's case.

NOTE Confidence: 0.98583543

00:04:15.060 --> 00:04:15.720 Hi, everyone.

NOTE Confidence: 0.96134466

00:04:16.740 --> 00:04:17.240 So

NOTE Confidence: 0.98216444

00:04:18.225 --> 00:04:19.505 I'm really excited about today's

NOTE Confidence: 0.98216444

00:04:19.505 --> 00:04:20.865 case. Divya is gonna be

NOTE Confidence: 0.98216444

00:04:20.865 --> 00:04:22.645 presenting a case that's inspired

NOTE Confidence: 0.98216444

00:04:22.865 --> 00:04:23.365 by,

NOTE Confidence: 0.97291505

00:04:23.745 --> 00:04:25.045 a case that we faced

NOTE Confidence: 0.97291505

00:04:25.105 --> 00:04:26.725 at our at our hospitals.

NOTE Confidence: 0.94405013

00:04:27.345 --> 00:04:28.625 There are some elements that

NOTE Confidence: 0.94405013

00:04:28.625 --> 00:04:29.125 are,

NOTE Confidence: 0.98207444

00:04:29.825 --> 00:04:31.845 changed and modified for educational

NOTE Confidence: 0.98207444

00:04:31.985 --> 00:04:32.485 purposes,

NOTE Confidence: 0.98372936

00:04:33.029 --> 00:04:34.390 to help with driving,

NOTE Confidence: 0.98576224

00:04:34.790 --> 00:04:35.690 education points.

NOTE Confidence: 0.992828

00:04:36.310 --> 00:04:37.510 But I am really excited

NOTE Confidence: 0.992828

00:04:37.510 --> 00:04:38.790 that with our new form

NOTE Confidence: 0.992828

00:04:38.950 --> 00:04:40.470 with this new series, we're

NOTE Confidence: 0.992828

00:04:40.470 --> 00:04:41.850 gonna be trialing a format,

NOTE Confidence: 0.9816086

00:04:42.310 --> 00:04:43.589 where we're gonna have assistance

NOTE Confidence: 0.9816086

00:04:43.589 --> 00:04:44.650 of our other experts

NOTE Confidence: 0.9803189

00:04:45.794 --> 00:04:47.395 for to help Divya in

NOTE Confidence: 0.9803189

00:04:47.395 --> 00:04:48.854 our discussion of this case.

NOTE Confidence: 0.97570616

00:04:49.235 --> 00:04:50.935 We have doctor Robert McNamara,

NOTE Confidence: 0.97570616

00:04:51.074 --> 00:04:52.835 who's our professor of medicine,

NOTE Confidence: 0.97570616

00:04:52.835 --> 00:04:53.794 who's also the director of

NOTE Confidence: 0.97570616

00:04:53.794 --> 00:04:54.294 echocardiography

NOTE Confidence: 0.93546206

00:04:54.835 --> 00:04:55.714 here to help us think

NOTE Confidence: 0.93546206

00:04:55.714 --> 00:04:56.535 through this case.

NOTE Confidence: 0.9521669

00:04:56.995 --> 00:04:59.270 Doctor Carlos Davila, who is

NOTE Confidence: 0.9521669

00:04:59.570 --> 00:05:00.930 really a triple threat in

NOTE Confidence: 0.9521669

00:05:00.930 --> 00:05:02.690 terms of interventional heart failure

NOTE Confidence: 0.9521669

00:05:02.690 --> 00:05:03.670 as well as structural,

NOTE Confidence: 0.83601713

00:05:04.290 --> 00:05:04.790 cardiology.

NOTE Confidence: 0.94671965

00:05:05.650 --> 00:05:06.770 And he will be helping

NOTE Confidence: 0.94671965

00:05:06.770 --> 00:05:07.650 us through this case. And

NOTE Confidence: 0.94671965

00:05:07.650 --> 00:05:09.570 then Nikhil Sikant is another

NOTE Confidence: 0.94671965

00:05:09.570 --> 00:05:11.029 assistant professor of medicine,

NOTE Confidence: 0.9283518

00:05:11.675 --> 00:05:13.755 also the assistant profess program

NOTE Confidence: 0.9283518

00:05:13.755 --> 00:05:15.435 director for the cardiology program

NOTE Confidence: 0.9283518

00:05:15.435 --> 00:05:16.474 as well as the associate

NOTE Confidence: 0.9283518

00:05:16.474 --> 00:05:18.154 program director for the heart

NOTE Confidence: 0.9283518

00:05:18.154 --> 00:05:18.654 failure,

NOTE Confidence: 0.999377

00:05:19.755 --> 00:05:20.815 fellowship program.

NOTE Confidence: 0.9916698

00:05:21.435 --> 00:05:23.035 So without ado, I will

NOTE Confidence: 0.9916698

00:05:23.035 --> 00:05:24.315 introduce Divya to walk us

NOTE Confidence: 0.9916698

00:05:24.315 --> 00:05:25.134 through our case.

NOTE Confidence: 0.9977442

00:05:32.069 --> 00:05:33.849 Hello, everyone. Good morning.

NOTE Confidence: 0.63184214

00:05:35.990 --> 00:05:36.490 Okay.

NOTE Confidence: 0.99064565

00:05:37.669 --> 00:05:39.370 Alright. So good afternoon.

NOTE Confidence: 0.9471971

00:05:39.830 --> 00:05:40.870 Thank you for attending my

NOTE Confidence: 0.9471971

00:05:40.870 --> 00:05:41.690 grand rounds,

NOTE Confidence: 0.9366932

00:05:42.325 --> 00:05:44.025 entitled updates, uniquities,

NOTE Confidence: 0.9953544

00:05:44.805 --> 00:05:46.345 special situations, and cardiogenic

NOTE Confidence: 0.99953926

00:05:46.645 --> 00:05:47.145 shock.

NOTE Confidence: 0.9995238

00:05:48.325 --> 00:05:49.605 I have no disclosures at

NOTE Confidence: 0.9995238

00:05:49.605 --> 00:05:50.265 this time.

NOTE Confidence: 0.99693865

00:05:51.685 --> 00:05:52.885 So today, I'd like to

NOTE Confidence: 0.99693865

00:05:52.885 --> 00:05:54.165 focus on these four learning

NOTE Confidence: 0.99693865

00:05:54.165 --> 00:05:55.440 objectives. At the end of

NOTE Confidence: 0.99693865

00:05:55.440 --> 00:05:57.040 my presentation, I'd like us

NOTE Confidence: 0.99693865

00:05:57.040 --> 00:05:58.080 to be able to properly

NOTE Confidence: 0.99693865

00:05:58.080 --> 00:06:00.180 and specifically stage our cardiogenic

NOTE Confidence: 0.99693865

00:06:00.400 --> 00:06:01.140 shock patients.

NOTE Confidence: 0.9671788

00:06:01.760 --> 00:06:02.900 I'd like us to rapidly

NOTE Confidence: 0.9671788

00:06:02.960 --> 00:06:04.960 recognize and mobilize resources and

NOTE Confidence: 0.9671788

00:06:04.960 --> 00:06:06.740 situations of cardiogenic shock,

NOTE Confidence: 0.99406993

00:06:07.105 --> 00:06:08.964 manage unique phenotypes of cardiogenic

NOTE Confidence: 0.99406993

00:06:09.185 --> 00:06:11.345 shock, and transition management to

NOTE Confidence: 0.99406993

00:06:11.345 --> 00:06:13.105 the acute care post acute

NOTE Confidence: 0.99406993

00:06:13.105 --> 00:06:14.785 care setting. You'll notice that

NOTE Confidence: 0.99406993

00:06:14.785 --> 00:06:15.904 the title and the objectives

NOTE Confidence: 0.99406993

00:06:15.904 --> 00:06:17.125 are intentionally vague,

NOTE Confidence: 0.9931299

00:06:17.425 --> 00:06:18.545 and that's because I wanna

NOTE Confidence: 0.9931299

00:06:18.545 --> 00:06:20.225 withhold the diagnosis for a

NOTE Confidence: 0.9931299

00:06:20.225 --> 00:06:21.185 little bit longer till we

NOTE Confidence: 0.9931299

00:06:21.185 --> 00:06:22.245 get into the case.

NOTE Confidence: 0.9899662

00:06:23.880 --> 00:06:25.660 Alright. Jumping right in. So

NOTE Confidence: 0.9899662

00:06:25.800 --> 00:06:27.240 day one, we have a

NOTE Confidence: 0.9899662

00:06:27.240 --> 00:06:28.520 seventy year old female patient

NOTE Confidence: 0.9899662

00:06:28.520 --> 00:06:30.360 who presented with lightheadedness, shortness

NOTE Confidence: 0.9899662

00:06:30.360 --> 00:06:32.060 of breath, and chest discomfort

NOTE Confidence: 0.9899662

00:06:32.120 --> 00:06:33.340 radiating to the throat.

NOTE Confidence: 0.98428833

00:06:34.520 --> 00:06:35.480 To give a little more

NOTE Confidence: 0.98428833

00:06:35.480 --> 00:06:36.520 detail, she says that she

NOTE Confidence: 0.98428833

00:06:36.520 --> 00:06:37.560 was in her usual state

NOTE Confidence: 0.98428833

00:06:37.560 --> 00:06:38.805 of health this morning, was

NOTE Confidence: 0.98428833

00:06:38.884 --> 00:06:39.845 feeling well the past few

NOTE Confidence: 0.98428833

00:06:39.845 --> 00:06:41.445 days. She was standing up

NOTE Confidence: 0.98428833

00:06:41.445 --> 00:06:43.205 at her retail job, working

NOTE Confidence: 0.98428833

00:06:43.205 --> 00:06:44.964 a later evening shift when

NOTE Confidence: 0.98428833

00:06:44.964 --> 00:06:46.964 her symptoms started, and she

NOTE Confidence: 0.98428833

00:06:46.964 --> 00:06:48.164 kinda remembers that, oh, she

NOTE Confidence: 0.98428833

00:06:48.164 --> 00:06:49.205 forgot to take her morning

NOTE Confidence: 0.98428833

00:06:49.205 --> 00:06:49.705 medications.

NOTE Confidence: 0.98894864

00:06:50.820 --> 00:06:52.339 She had persistent symptoms for

NOTE Confidence: 0.98894864

00:06:52.339 --> 00:06:53.460 one to two hours while

NOTE Confidence: 0.98894864

00:06:53.460 --> 00:06:54.500 en route to the ER

NOTE Confidence: 0.98894864

00:06:54.500 --> 00:06:55.620 and presented to the ER

NOTE Confidence: 0.98894864

00:06:55.620 --> 00:06:57.060 at an outside hospital at

NOTE Confidence: 0.98894864

00:06:57.060 --> 00:06:58.580 midnight. And just to orient

NOTE Confidence: 0.98894864

00:06:58.580 --> 00:06:59.460 you, you could see the

NOTE Confidence: 0.98894864

00:06:59.460 --> 00:07:00.980 time and the location of

NOTE Confidence: 0.98894864

00:07:00.980 --> 00:07:02.100 all the next steps in

NOTE Confidence: 0.98894864

00:07:02.100 --> 00:07:03.640 the bottom right hand corner.

NOTE Confidence: 0.97324336

00:07:04.695 --> 00:07:05.575 To give her a past

NOTE Confidence: 0.97324336

00:07:05.575 --> 00:07:06.695 medical history, she has a

NOTE Confidence: 0.97324336

00:07:06.695 --> 00:07:08.875 history of hypertension, anxiety, depression,

NOTE Confidence: 0.98141915

00:07:09.335 --> 00:07:11.195 and some other noncardiac diagnoses.

NOTE Confidence: 0.98141915

00:07:11.335 --> 00:07:12.215 She has a history of

NOTE Confidence: 0.98141915

00:07:12.215 --> 00:07:13.115 tobacco use.

NOTE Confidence: 0.99507535

00:07:14.135 --> 00:07:15.415 Her only medication at the

NOTE Confidence: 0.99507535

00:07:15.415 --> 00:07:16.315 time was venlafaxine

NOTE Confidence: 0.92803925

00:07:16.695 --> 00:07:18.235 thirty seven point five daily

NOTE Confidence: 0.92803925

00:07:18.295 --> 00:07:19.035 for anxiety.

NOTE Confidence: 0.989271

00:07:20.120 --> 00:07:21.080 And of note, she has

NOTE Confidence: 0.989271

00:07:21.080 --> 00:07:22.780 no family history of cardiovascular

NOTE Confidence: 0.989271

00:07:23.000 --> 00:07:23.500 disease.

NOTE Confidence: 0.9609

00:07:24.680 --> 00:07:25.800 Social history, so she had

NOTE Confidence: 0.9609

00:07:25.800 --> 00:07:27.080 some prior tobacco use like

NOTE Confidence: 0.9609

00:07:27.080 --> 00:07:28.620 I mentioned, and she,

NOTE Confidence: 0.93422395

00:07:29.080 --> 00:07:30.600 drinks three standard size alcoholic

NOTE Confidence: 0.93422395

00:07:30.600 --> 00:07:31.800 drinks per week, but no

NOTE Confidence: 0.93422395

00:07:31.800 --> 00:07:32.300 drugs.

NOTE Confidence: 0.9766194

00:07:33.694 --> 00:07:35.055 When she presented to the

NOTE Confidence: 0.9766194

00:07:35.055 --> 00:07:36.835 outside hospital, she was sick.

NOTE Confidence: 0.9766194

00:07:37.134 --> 00:07:38.974 Her physical exam was pretty

NOTE Confidence: 0.9766194

00:07:38.974 --> 00:07:40.974 obvious. Vitals, heart rate, one

NOTE Confidence: 0.9766194

00:07:40.974 --> 00:07:42.574 ten. Blood pressure, eighty five

NOTE Confidence: 0.9766194

00:07:42.574 --> 00:07:43.315 over sixty,

NOTE Confidence: 0.9358077

00:07:44.175 --> 00:07:45.794 with respiratory rate, sixteen.

NOTE Confidence: 0.99459976

00:07:46.350 --> 00:07:47.710 She was mildly distressed and

NOTE Confidence: 0.99459976

00:07:47.710 --> 00:07:49.330 anxious appearing, tachycardic

NOTE Confidence: 0.92554355

00:07:49.790 --> 00:07:51.070 with a grade two systolic

NOTE Confidence: 0.92554355

00:07:51.070 --> 00:07:52.210 murmur over apex,

NOTE Confidence: 0.99215484

00:07:52.590 --> 00:07:54.190 and her JVP was estimated

NOTE Confidence: 0.99215484

00:07:54.190 --> 00:07:55.470 at ten centimeters at that

NOTE Confidence: 0.99215484

00:07:55.470 --> 00:07:55.970 moment.

NOTE Confidence: 0.95768464

00:07:56.270 --> 00:07:57.490 She also had bibasilar,

NOTE Confidence: 0.9494344

00:07:57.950 --> 00:07:59.310 and her extremities were known

NOTE Confidence: 0.9494344

00:07:59.310 --> 00:08:00.510 to be cool and clammy,

NOTE Confidence: 0.9494344

00:08:00.510 --> 00:08:02.265 but interestingly, without a deep.

NOTE Confidence: 0.9928035

00:08:03.625 --> 00:08:04.745 On her labs, just to

NOTE Confidence: 0.9928035

00:08:04.745 --> 00:08:05.405 go quickly,

NOTE Confidence: 0.90553236

00:08:06.345 --> 00:08:07.245 of note, her,

NOTE Confidence: 0.94060475

00:08:07.865 --> 00:08:09.545 complete blood count and her,

NOTE Confidence: 0.94060475

00:08:09.865 --> 00:08:11.465 chem seven was pretty normal.

NOTE Confidence: 0.94060475

00:08:11.465 --> 00:08:12.265 Although, if you know her

NOTE Confidence: 0.94060475

00:08:12.265 --> 00:08:13.705 baseline creatinine is pretty low

NOTE Confidence: 0.94060475

00:08:13.705 --> 00:08:14.280 at point four

NOTE Confidence: 0.9726082

00:08:15.160 --> 00:08:16.520 two, and her presenting creatinine

NOTE Confidence: 0.9726082

00:08:16.520 --> 00:08:18.600 was one. Her ASC ALT

NOTE Confidence: 0.9726082

00:08:18.600 --> 00:08:19.960 from prior normals was one

NOTE Confidence: 0.9726082

00:08:19.960 --> 00:08:21.260 zero two and ninety nine.

NOTE Confidence: 0.99771845

00:08:21.800 --> 00:08:22.300 And

NOTE Confidence: 0.971008

00:08:22.760 --> 00:08:24.540 of note, her NT proBNP

NOTE Confidence: 0.971008

00:08:24.760 --> 00:08:25.800 was in the six thousand

NOTE Confidence: 0.971008

00:08:25.800 --> 00:08:27.020 range, and her high sensitivity

NOTE Confidence: 0.971008

00:08:27.080 --> 00:08:28.760 troponin was elevated but flat

NOTE Confidence: 0.971008

00:08:28.760 --> 00:08:30.255 from ninety four to one

NOTE Confidence: 0.98286086

00:08:30.655 --> 00:08:32.195 fifteen over two, three hours.

NOTE Confidence: 0.98286086

00:08:32.415 --> 00:08:33.855 Her lactate was two point

NOTE Confidence: 0.98286086

00:08:33.855 --> 00:08:34.835 five at presentation.

NOTE Confidence: 0.979239

00:08:36.335 --> 00:08:37.934 And just quickly, her AP

NOTE Confidence: 0.979239

00:08:37.934 --> 00:08:38.434 portable,

NOTE Confidence: 0.89229983

00:08:39.375 --> 00:08:40.735 chest X-ray showed some mild

NOTE Confidence: 0.89229983

00:08:40.735 --> 00:08:43.075 interstitial pulmonary Amazing. Normal cardiac

NOTE Confidence: 0.89229983

00:08:43.215 --> 00:08:43.715 silhouette.

NOTE Confidence: 0.8843556

00:08:44.809 --> 00:08:46.970 And her EK was completed

NOTE Confidence: 0.8843556

00:08:46.970 --> 00:08:48.510 and displayed sinus tachycardia

NOTE Confidence: 0.69043845

00:08:49.210 --> 00:08:50.330 with a known chronic left

NOTE Confidence: 0.69043845

00:08:50.330 --> 00:08:51.210 on over in his block.

NOTE Confidence: 0.69043845

00:08:51.210 --> 00:08:52.490 And just for thoroughness sake,

NOTE Confidence: 0.69043845

00:08:52.490 --> 00:08:53.390 this is not the

NOTE Confidence: 0.84118104

00:08:53.929 --> 00:08:55.950 Scrubosa criteria for SC elevation.

NOTE Confidence: 0.84118104

00:08:56.250 --> 00:08:57.690 One piece. This is all

NOTE Confidence: 0.84118104

00:08:57.690 --> 00:08:58.995 occurring around one AM at

NOTE Confidence: 0.84118104

00:08:58.995 --> 00:09:00.434 the outside hospital. Do we

NOTE Confidence: 0.84118104

00:09:00.434 --> 00:09:01.315 need to test this on

NOTE Confidence: 0.84118104

00:09:01.315 --> 00:09:02.515 that? Care was Part of

NOTE Confidence: 0.84118104

00:09:02.515 --> 00:09:03.875 it just like this. Hospital,

NOTE Confidence: 0.84118104

00:09:03.875 --> 00:09:05.575 but unfortunately had some technically

NOTE Confidence: 0.84118104

00:09:05.635 --> 00:09:06.135 difficult

NOTE Confidence: 0.77812916

00:09:06.595 --> 00:09:07.335 poor windows.

NOTE Confidence: 0.9837005

00:09:07.715 --> 00:09:08.915 Although, they were able to

NOTE Confidence: 0.9837005

00:09:08.915 --> 00:09:10.115 find that there was a

NOTE Confidence: 0.9837005

00:09:10.115 --> 00:09:11.555 mild to moderate reduction in

NOTE Confidence: 0.9837005

00:09:11.555 --> 00:09:12.720 EF from in the range

NOTE Confidence: 0.9837005

00:09:12.720 --> 00:09:14.559 of thirty to forty, and

NOTE Confidence: 0.9837005

00:09:14.559 --> 00:09:15.940 she had had prior outpatient

NOTE Confidence: 0.9837005

00:09:16.000 --> 00:09:16.959 echoes in the past five

NOTE Confidence: 0.9837005

00:09:16.959 --> 00:09:18.080 years that showed a normal

NOTE Confidence: 0.9837005

00:09:18.080 --> 00:09:19.220 EF of sixty

NOTE Confidence: 0.98017156

00:09:20.800 --> 00:09:22.320 five. Her early management was

NOTE Confidence: 0.98017156

00:09:22.320 --> 00:09:23.200 as follows. She got a

NOTE Confidence: 0.98017156

00:09:23.200 --> 00:09:24.755 liter of fluids, but then

NOTE Confidence: 0.98017156

00:09:24.755 --> 00:09:25.715 after the point of care

NOTE Confidence: 0.98017156

00:09:25.715 --> 00:09:27.154 ultrasound, she got some Lasix

NOTE Confidence: 0.98017156

00:09:27.154 --> 00:09:28.695 forty milligram IV.

NOTE Confidence: 0.97462195

00:09:30.195 --> 00:09:31.395 Her repeat vitals at that

NOTE Confidence: 0.97462195

00:09:31.395 --> 00:09:32.355 time showed a heart rate

NOTE Confidence: 0.97462195

00:09:32.355 --> 00:09:33.635 one twenty one, blood pressure

NOTE Confidence: 0.97462195

00:09:33.635 --> 00:09:34.934 one zero one over eighty,

NOTE Confidence: 0.97462195

00:09:35.235 --> 00:09:37.075 and cardiogenic shock was considered

NOTE Confidence: 0.97462195

00:09:37.075 --> 00:09:38.275 high on the differential with

NOTE Confidence: 0.97462195

00:09:38.275 --> 00:09:39.175 the ER physician.

NOTE Confidence: 0.96111095

00:09:39.809 --> 00:09:40.290 And,

NOTE Confidence: 0.9849452

00:09:41.010 --> 00:09:42.530 expert opinion was sought at

NOTE Confidence: 0.9849452

00:09:42.530 --> 00:09:44.230 York Street with our CCU,

NOTE Confidence: 0.9996114

00:09:44.770 --> 00:09:45.270 colleagues.

NOTE Confidence: 0.973325

00:09:45.890 --> 00:09:47.190 She was started on inotropy

NOTE Confidence: 0.973325

00:09:47.410 --> 00:09:49.030 after some discussion, and dobutamine

NOTE Confidence: 0.973325

00:09:49.250 --> 00:09:49.910 was chosen.

NOTE Confidence: 0.97865367

00:09:50.530 --> 00:09:51.490 It was started at two

NOTE Confidence: 0.97865367

00:09:51.490 --> 00:09:53.030 point five and rapidly uptitrated

NOTE Confidence: 0.97865367

00:09:53.330 --> 00:09:54.584 to five, and she was

NOTE Confidence: 0.97865367

00:09:54.584 --> 00:09:55.725 transferred to YNHCCU

NOTE Confidence: 0.9433581

00:09:56.745 --> 00:09:58.764 for concern for cardiogenic shock.

NOTE Confidence: 0.9637704

00:10:00.665 --> 00:10:02.285 On arrival to York Street,

NOTE Confidence: 0.9637704

00:10:02.345 --> 00:10:04.184 her vitals were largely the

NOTE Confidence: 0.9637704

00:10:04.184 --> 00:10:06.285 same on the five micrograms

NOTE Confidence: 0.9637704

00:10:06.345 --> 00:10:07.225 per k per minute of

NOTE Confidence: 0.9637704

00:10:07.225 --> 00:10:07.725 dobutamine,

NOTE Confidence: 0.9771757

00:10:08.105 --> 00:10:09.029 blood pressure one zero two

NOTE Confidence: 0.9771757

00:10:09.029 --> 00:10:10.009 over eighty four.

NOTE Confidence: 0.9418505

00:10:10.389 --> 00:10:12.309 She did have, some oxygen

NOTE Confidence: 0.9418505

00:10:12.309 --> 00:10:14.550 desaturation requiring three liters nasal

NOTE Confidence: 0.9418505

00:10:14.550 --> 00:10:16.089 cannula started by EMS.

NOTE Confidence: 0.97898835

00:10:16.790 --> 00:10:18.970 And her labs, interestingly, just

NOTE Confidence: 0.97898835

00:10:19.110 --> 00:10:20.309 one or two hours after

NOTE Confidence: 0.97898835

00:10:20.309 --> 00:10:22.089 her initial, were already showing,

NOTE Confidence: 0.9364395

00:10:22.709 --> 00:10:24.925 distinct signs of hyperperfusion, including

NOTE Confidence: 0.9364395

00:10:25.225 --> 00:10:26.825 creatinine increasing to one point

NOTE Confidence: 0.9364395

00:10:26.825 --> 00:10:27.565 five two,

NOTE Confidence: 0.9859781

00:10:28.425 --> 00:10:30.105 liver congestion, and a lactate

NOTE Confidence: 0.9859781

00:10:30.105 --> 00:10:31.404 of four point one.

NOTE Confidence: 0.86601734

00:10:32.505 --> 00:10:34.365 We tried to pocus again,

NOTE Confidence: 0.86601734

00:10:34.425 --> 00:10:35.245 but encountered

NOTE Confidence: 0.98109204

00:10:36.209 --> 00:10:37.730 some new findings, still that

NOTE Confidence: 0.98109204

00:10:37.730 --> 00:10:39.009 same low EF of thirty

NOTE Confidence: 0.98109204

00:10:39.009 --> 00:10:40.610 to forty, but some possibly

NOTE Confidence: 0.98109204

00:10:40.610 --> 00:10:41.750 new mitral regurgitation

NOTE Confidence: 0.97656536

00:10:42.209 --> 00:10:43.670 noted on color Doppler.

NOTE Confidence: 0.99880284

00:10:45.250 --> 00:10:46.209 And at that time, the

NOTE Confidence: 0.99880284

00:10:46.209 --> 00:10:47.569 patient was immediately given high

NOTE Confidence: 0.99880284

00:10:47.569 --> 00:10:48.389 dose diuretics.

NOTE Confidence: 0.97981316

00:10:49.065 --> 00:10:49.865 She was known to have

NOTE Confidence: 0.97981316

00:10:49.865 --> 00:10:51.705 poor urine output throughout transit

NOTE Confidence: 0.97981316

00:10:51.705 --> 00:10:53.065 at seventy five cc per

NOTE Confidence: 0.97981316

00:10:53.065 --> 00:10:53.565 hour,

NOTE Confidence: 0.97334284

00:10:54.025 --> 00:10:55.865 and a right IJ triple

NOTE Confidence: 0.97334284

00:10:55.865 --> 00:10:57.304 lumen and arterial line were

NOTE Confidence: 0.97334284

00:10:57.304 --> 00:10:59.005 placed for further hemodynamic

NOTE Confidence: 0.9399498

00:10:59.385 --> 00:10:59.885 information.

NOTE Confidence: 0.9968573

00:11:00.985 --> 00:11:02.265 And these yielded a central

NOTE Confidence: 0.9537333

00:11:02.809 --> 00:11:04.329 the triple lumen yielded a

NOTE Confidence: 0.9537333

00:11:04.329 --> 00:11:05.529 central venous sat of forty

NOTE Confidence: 0.9537333

00:11:05.529 --> 00:11:06.809 four percent and a bedside

NOTE Confidence: 0.9537333

00:11:06.809 --> 00:11:08.110 CVP of twelve.

NOTE Confidence: 0.99882436

00:11:09.690 --> 00:11:10.649 I'd like to kind of

NOTE Confidence: 0.99882436

00:11:10.649 --> 00:11:12.010 delve into our first learning

NOTE Confidence: 0.99882436

00:11:12.010 --> 00:11:13.449 point at this time. With

NOTE Confidence: 0.99882436

00:11:13.449 --> 00:11:14.990 this initial clinical information,

NOTE Confidence: 0.95074606

00:11:15.449 --> 00:11:17.130 how would we stage the

NOTE Confidence: 0.95074606

00:11:17.130 --> 00:11:17.630 shock?

NOTE Confidence: 0.9849766

00:11:18.404 --> 00:11:19.365 I think we're all pretty

NOTE Confidence: 0.9849766

00:11:19.365 --> 00:11:20.644 familiar with the twenty twenty

NOTE Confidence: 0.9849766

00:11:20.644 --> 00:11:22.644 one schema developed by Society

NOTE Confidence: 0.9849766

00:11:22.644 --> 00:11:23.225 of Cardiovascular

NOTE Confidence: 0.94840664

00:11:23.845 --> 00:11:26.325 Angiography and Intervention, Skye, wherein

NOTE Confidence: 0.94840664

00:11:26.325 --> 00:11:28.005 cardiogenic shock is described from

NOTE Confidence: 0.94840664

00:11:28.005 --> 00:11:29.385 an a to e scale,

NOTE Confidence: 0.97588456

00:11:29.845 --> 00:11:30.904 a being a hemodynamically

NOTE Confidence: 0.9974801

00:11:31.285 --> 00:11:32.725 stable patient who's at risk

NOTE Confidence: 0.9974801

00:11:32.725 --> 00:11:33.670 for cardiogenic

NOTE Confidence: 0.9976552

00:11:34.370 --> 00:11:35.809 shock, c being a patient

NOTE Confidence: 0.9976552

00:11:35.809 --> 00:11:37.430 with clinical evidence of hypoperfusion,

NOTE Confidence: 0.9939876

00:11:39.250 --> 00:11:41.590 with some hypotension possibly requiring

NOTE Confidence: 0.9939876

00:11:41.650 --> 00:11:43.510 pharmacologic or mechanical support,

NOTE Confidence: 0.99639845

00:11:43.890 --> 00:11:45.410 and e being patients with

NOTE Confidence: 0.99639845

00:11:45.410 --> 00:11:47.510 refractory shock and impending collapse.

NOTE Confidence: 0.95768076

00:11:48.255 --> 00:11:49.215 But in the years after

NOTE Confidence: 0.95768076

00:11:49.215 --> 00:11:50.655 the staging system was proposed,

NOTE Confidence: 0.95768076

00:11:50.655 --> 00:11:52.595 the cardiac critical care community,

NOTE Confidence: 0.99486864

00:11:53.535 --> 00:11:55.135 further detailed each stage and

NOTE Confidence: 0.99486864

00:11:55.135 --> 00:11:56.675 tried to elicit some nuances.

NOTE Confidence: 0.97704834

00:11:57.295 --> 00:11:59.075 Of note, the Kapoor group,

NOTE Confidence: 0.97704834

00:11:59.375 --> 00:12:00.575 and authors working with the

NOTE Confidence: 0.97704834

00:12:00.575 --> 00:12:02.730 cardiogenic shock working group, also

NOTE Confidence: 0.97704834

00:12:02.730 --> 00:12:03.790 known as CSWG,

NOTE Confidence: 0.96893156

00:12:04.890 --> 00:12:06.649 utilized a registry to describe

NOTE Confidence: 0.96893156

00:12:06.649 --> 00:12:08.270 cardiogenic shock due to myocardial

NOTE Confidence: 0.96893156

00:12:08.330 --> 00:12:10.010 infarction, heart failure, or, like,

NOTE Confidence: 0.96893156

00:12:10.010 --> 00:12:10.670 a combined

NOTE Confidence: 0.94456166

00:12:11.130 --> 00:12:12.350 neither cause bucket.

NOTE Confidence: 0.98973626

00:12:13.209 --> 00:12:14.490 And they provided this new

NOTE Confidence: 0.98973626

00:12:14.490 --> 00:12:15.870 schema for us to,

NOTE Confidence: 0.9989894

00:12:16.490 --> 00:12:16.990 use

NOTE Confidence: 0.98327315

00:12:17.545 --> 00:12:18.905 in place of or along

NOTE Confidence: 0.98327315

00:12:18.905 --> 00:12:19.804 with the pyramid.

NOTE Confidence: 0.9954495

00:12:21.145 --> 00:12:22.585 Their findings added the way

NOTE Confidence: 0.9954495

00:12:22.585 --> 00:12:24.425 that I understood, you know,

NOTE Confidence: 0.9954495

00:12:24.425 --> 00:12:26.025 these nuances is they fall

NOTE Confidence: 0.9954495

00:12:26.025 --> 00:12:27.885 into these three kind of

NOTE Confidence: 0.9954495

00:12:28.105 --> 00:12:29.005 central ideas.

NOTE Confidence: 0.98542804

00:12:30.190 --> 00:12:32.269 Firstly, they expanded on specific

NOTE Confidence: 0.98542804

00:12:32.269 --> 00:12:34.370 definitions of hypotension and hypoperfusion

NOTE Confidence: 0.95042676

00:12:35.470 --> 00:12:36.830 given, you know, strict blood

NOTE Confidence: 0.95042676

00:12:36.830 --> 00:12:38.589 pressure and lactate numbers as

NOTE Confidence: 0.95042676

00:12:38.589 --> 00:12:40.130 well as AST and pH.

NOTE Confidence: 0.94683266

00:12:40.990 --> 00:12:42.269 They introduced this idea of

NOTE Confidence: 0.94683266

00:12:42.269 --> 00:12:43.709 treatment intensity, which I will

NOTE Confidence: 0.94683266

00:12:43.709 --> 00:12:44.370 talk about.

NOTE Confidence: 0.9788881

00:12:45.375 --> 00:12:46.895 And three, how dynamic is

NOTE Confidence: 0.9788881

00:12:46.895 --> 00:12:48.415 the shock? Did the shock

NOTE Confidence: 0.9788881

00:12:48.415 --> 00:12:49.695 worsen, stay the same, or

NOTE Confidence: 0.9788881

00:12:49.695 --> 00:12:51.054 improve, and over what time

NOTE Confidence: 0.9788881

00:12:51.054 --> 00:12:51.554 course?

NOTE Confidence: 0.9677217

00:12:53.135 --> 00:12:55.215 Hypotension and hyperprofusion is probably

NOTE Confidence: 0.9677217

00:12:55.215 --> 00:12:56.255 the one we're most familiar

NOTE Confidence: 0.9677217

00:12:56.255 --> 00:12:57.615 with in our clinical practice.

NOTE Confidence: 0.9677217

00:12:57.615 --> 00:12:59.235 We kind of intrinsically know

NOTE Confidence: 0.9677217

00:12:59.510 --> 00:13:00.470 through taking care of our

NOTE Confidence: 0.9677217

00:13:00.470 --> 00:13:01.830 patients that the cutoffs of

NOTE Confidence: 0.9677217

00:13:01.830 --> 00:13:03.750 systolic BP, like, greater than

NOTE Confidence: 0.9677217

00:13:03.750 --> 00:13:05.429 or less than sixty or

NOTE Confidence: 0.9677217

00:13:05.429 --> 00:13:07.110 lactate greater than two, greater

NOTE Confidence: 0.9677217

00:13:07.110 --> 00:13:08.570 than five, greater than ten.

NOTE Confidence: 0.9023126

00:13:10.070 --> 00:13:11.350 Of note in this kind

NOTE Confidence: 0.9023126

00:13:11.350 --> 00:13:13.510 of newer schema, they acknowledge

NOTE Confidence: 0.9023126

00:13:13.510 --> 00:13:15.405 a normal tensive cardiogenic shock,

NOTE Confidence: 0.9613375

00:13:16.365 --> 00:13:17.825 which shows, like, hypoperfusion,

NOTE Confidence: 0.985516

00:13:18.365 --> 00:13:19.645 but normal tension, which you

NOTE Confidence: 0.985516

00:13:19.645 --> 00:13:20.605 can kind of see in

NOTE Confidence: 0.985516

00:13:20.605 --> 00:13:21.425 box b.

NOTE Confidence: 0.97739816

00:13:21.965 --> 00:13:23.005 And if we recall our

NOTE Confidence: 0.97739816

00:13:23.005 --> 00:13:24.445 patient details, we find that

NOTE Confidence: 0.97739816

00:13:24.445 --> 00:13:25.965 she falls into the c

NOTE Confidence: 0.97739816

00:13:25.965 --> 00:13:27.745 to d territory with presenting

NOTE Confidence: 0.97739816

00:13:27.805 --> 00:13:30.045 BP eighty over sixty and

NOTE Confidence: 0.97739816

00:13:30.045 --> 00:13:32.210 lactate two point five, increasing

NOTE Confidence: 0.97739816

00:13:32.210 --> 00:13:32.950 to four.

NOTE Confidence: 0.8832429

00:13:34.690 --> 00:13:36.130 The second nuance added to

NOTE Confidence: 0.8832429

00:13:36.130 --> 00:13:37.670 this sky shock staging

NOTE Confidence: 0.99252635

00:13:38.050 --> 00:13:39.970 is treatment intensity. So Kapoor

NOTE Confidence: 0.99252635

00:13:39.970 --> 00:13:41.170 and colleagues found that in

NOTE Confidence: 0.99252635

00:13:41.170 --> 00:13:42.690 patients with cardiogenic shock of

NOTE Confidence: 0.99252635

00:13:42.690 --> 00:13:43.510 any cause,

NOTE Confidence: 0.94959474

00:13:44.395 --> 00:13:46.315 including AMI, heart failure, as

NOTE Confidence: 0.94959474

00:13:46.315 --> 00:13:48.315 treatment intensity increased, meaning number

NOTE Confidence: 0.94959474

00:13:48.315 --> 00:13:49.755 of devices increased, number of

NOTE Confidence: 0.94959474

00:13:49.755 --> 00:13:50.255 drugs,

NOTE Confidence: 0.9420815

00:13:51.275 --> 00:13:53.214 hospital mortality increased significantly.

NOTE Confidence: 0.94602084

00:13:53.675 --> 00:13:54.895 Kind of makes sense.

NOTE Confidence: 0.9942452

00:13:55.434 --> 00:13:56.475 So where would we put

NOTE Confidence: 0.9942452

00:13:56.475 --> 00:13:57.434 our patient here in this

NOTE Confidence: 0.9942452

00:13:57.434 --> 00:13:59.149 moment? She was on dobutamine

NOTE Confidence: 0.97547287

00:13:59.450 --> 00:14:00.429 and no MCS,

NOTE Confidence: 0.99113375

00:14:00.970 --> 00:14:02.330 and comparable patients in this

NOTE Confidence: 0.99113375

00:14:02.330 --> 00:14:03.690 study had around an eleven

NOTE Confidence: 0.99113375

00:14:03.690 --> 00:14:04.589 percent mortality.

NOTE Confidence: 0.9940826

00:14:06.809 --> 00:14:08.670 And the third nuance is

NOTE Confidence: 0.9940826

00:14:08.730 --> 00:14:10.670 how dynamic is the cardiogenic

NOTE Confidence: 0.9940826

00:14:10.809 --> 00:14:12.675 shock. The critical care community

NOTE Confidence: 0.9940826

00:14:12.675 --> 00:14:13.714 has examined this in a

NOTE Confidence: 0.9940826

00:14:13.714 --> 00:14:15.634 few ways. The overall point

NOTE Confidence: 0.9940826

00:14:15.634 --> 00:14:16.675 to understand is that the

NOTE Confidence: 0.9940826

00:14:16.675 --> 00:14:18.595 first twenty four hours really

NOTE Confidence: 0.9940826

00:14:18.595 --> 00:14:20.214 defines the patient's trajectory.

NOTE Confidence: 0.95865154

00:14:21.074 --> 00:14:22.514 In this analysis by Ton

NOTE Confidence: 0.95865154

00:14:22.514 --> 00:14:24.035 et al using registry data

NOTE Confidence: 0.95865154

00:14:24.035 --> 00:14:25.555 from that same cardiogenic shock

NOTE Confidence: 0.95865154

00:14:25.555 --> 00:14:27.130 working group, they found that

NOTE Confidence: 0.95865154

00:14:27.130 --> 00:14:28.170 in the first twenty four

NOTE Confidence: 0.95865154

00:14:28.170 --> 00:14:28.670 hours,

NOTE Confidence: 0.95028406

00:14:29.050 --> 00:14:30.730 SKY staging mostly stays the

NOTE Confidence: 0.95028406

00:14:30.730 --> 00:14:31.230 same.

NOTE Confidence: 0.9907353

00:14:31.690 --> 00:14:33.130 Patients do not easily move

NOTE Confidence: 0.9907353

00:14:33.130 --> 00:14:34.810 between stages. And as you

NOTE Confidence: 0.9907353

00:14:34.810 --> 00:14:35.690 can see on this plot,

NOTE Confidence: 0.9907353

00:14:35.690 --> 00:14:37.050 the vast majority of patients

NOTE Confidence: 0.9907353

00:14:37.050 --> 00:14:38.410 who present in one stage

NOTE Confidence: 0.9907353

00:14:38.410 --> 00:14:39.610 persist in that stage at

NOTE Confidence: 0.9907353

00:14:39.610 --> 00:14:40.730 twenty four, forty eight, and

NOTE Confidence: 0.9907353

00:14:40.730 --> 00:14:41.870 seventy two hours.

NOTE Confidence: 0.9837728

00:14:44.305 --> 00:14:45.505 As part of this analysis,

NOTE Confidence: 0.9837728

00:14:45.505 --> 00:14:46.805 they found that in essence,

NOTE Confidence: 0.9837728

00:14:46.944 --> 00:14:47.985 if a patient is to

NOTE Confidence: 0.9837728

00:14:47.985 --> 00:14:49.505 deteriorate in the first twenty

NOTE Confidence: 0.9837728

00:14:49.505 --> 00:14:51.105 four hours, like from stage

NOTE Confidence: 0.9837728

00:14:51.105 --> 00:14:52.704 b to stage c indicated

NOTE Confidence: 0.9837728

00:14:52.704 --> 00:14:54.084 by the purple bar here,

NOTE Confidence: 0.9837728

00:14:54.225 --> 00:14:55.365 they have a higher mortality

NOTE Confidence: 0.9837728

00:14:55.425 --> 00:14:56.545 than if they came in

NOTE Confidence: 0.9837728

00:14:56.545 --> 00:14:58.410 sicker at stage c and

NOTE Confidence: 0.9837728

00:14:58.410 --> 00:14:59.770 just stayed in stage c,

NOTE Confidence: 0.9837728

00:14:59.770 --> 00:15:00.990 which is the green bar.

NOTE Confidence: 0.945342

00:15:01.850 --> 00:15:03.850 Even larger deteriorations like seen

NOTE Confidence: 0.945342

00:15:03.850 --> 00:15:05.130 in the orange bar here

NOTE Confidence: 0.945342

00:15:05.130 --> 00:15:06.410 where a patient starts in

NOTE Confidence: 0.945342

00:15:06.410 --> 00:15:07.630 b and goes to d,

NOTE Confidence: 0.945342

00:15:07.770 --> 00:15:10.110 obviously, expectantly has increased mortality.

NOTE Confidence: 0.99693406

00:15:11.195 --> 00:15:12.475 And this really hammers home

NOTE Confidence: 0.99693406

00:15:12.475 --> 00:15:13.915 the point that deterioration in

NOTE Confidence: 0.99693406

00:15:13.915 --> 00:15:14.955 the first twenty four hours

NOTE Confidence: 0.99693406

00:15:14.955 --> 00:15:17.135 could matter more than severity

NOTE Confidence: 0.99693406

00:15:17.275 --> 00:15:18.335 of initial presentation.

NOTE Confidence: 0.99452865

00:15:19.915 --> 00:15:21.355 So this introduces a really

NOTE Confidence: 0.99452865

00:15:21.355 --> 00:15:23.470 important concept in a new

NOTE Confidence: 0.99452865

00:15:23.470 --> 00:15:25.090 concept in critical care cardiology

NOTE Confidence: 0.99452865

00:15:25.310 --> 00:15:26.430 called the golden day of

NOTE Confidence: 0.99452865

00:15:26.430 --> 00:15:26.930 shock.

NOTE Confidence: 0.99695635

00:15:27.710 --> 00:15:29.230 Main principles of this concept

NOTE Confidence: 0.99695635

00:15:29.230 --> 00:15:31.570 include early recognition and staging

NOTE Confidence: 0.99695635

00:15:31.710 --> 00:15:32.750 of shock in twenty four

NOTE Confidence: 0.99695635

00:15:32.750 --> 00:15:34.430 hours and early mobilization of

NOTE Confidence: 0.99695635

00:15:34.430 --> 00:15:34.930 resources

NOTE Confidence: 0.9988093

00:15:35.310 --> 00:15:37.150 and intervention within twenty four

NOTE Confidence: 0.9988093

00:15:37.150 --> 00:15:37.650 hours.

NOTE Confidence: 0.99250764

00:15:38.935 --> 00:15:40.295 What contributes to the golden

NOTE Confidence: 0.99250764

00:15:40.295 --> 00:15:41.815 day of shocks? We at

NOTE Confidence: 0.99250764

00:15:41.815 --> 00:15:43.835 Yale have hypothesized on this.

NOTE Confidence: 0.98907995

00:15:44.455 --> 00:15:46.535 Early diagnostic information in the

NOTE Confidence: 0.98907995

00:15:46.535 --> 00:15:48.475 form of pulmonary artery catheter,

NOTE Confidence: 0.96723014

00:15:49.975 --> 00:15:51.335 can be seen oops. Sorry.

NOTE Confidence: 0.96723014

00:15:51.335 --> 00:15:52.615 One second. Can be seen

NOTE Confidence: 0.96723014

00:15:52.615 --> 00:15:53.595 to have a significant,

NOTE Confidence: 0.9784546

00:15:54.350 --> 00:15:55.390 impact in the first twenty

NOTE Confidence: 0.9784546

00:15:55.390 --> 00:15:57.070 four hours to improve outcomes,

NOTE Confidence: 0.9784546

00:15:57.070 --> 00:15:58.750 and you'll see some familiar

NOTE Confidence: 0.9784546

00:15:58.750 --> 00:15:59.890 names on the screen.

NOTE Confidence: 0.9899011

00:16:01.070 --> 00:16:02.110 In this study by our

NOTE Confidence: 0.9899011

00:16:02.110 --> 00:16:04.110 team, patients in cardiogenic shock

NOTE Confidence: 0.9899011

00:16:04.110 --> 00:16:05.870 who received a pulmonary artery

NOTE Confidence: 0.9899011

00:16:05.870 --> 00:16:07.215 catheter on day one versus

NOTE Confidence: 0.9899011

00:16:07.215 --> 00:16:08.815 day two of admission had

NOTE Confidence: 0.9899011

00:16:08.815 --> 00:16:09.775 a lower risk of in

NOTE Confidence: 0.9899011

00:16:09.775 --> 00:16:10.835 hospital mortality,

NOTE Confidence: 0.96344656

00:16:11.295 --> 00:16:12.335 an effect seen in the

NOTE Confidence: 0.96344656

00:16:12.335 --> 00:16:13.695 overall cohort and then as

NOTE Confidence: 0.96344656

00:16:13.695 --> 00:16:15.155 you go down this plot,

NOTE Confidence: 0.96344656

00:16:15.375 --> 00:16:16.595 in the subgroup analysis.

NOTE Confidence: 0.9965188

00:16:17.215 --> 00:16:18.815 Additionally, patients who received a

NOTE Confidence: 0.9965188

00:16:18.815 --> 00:16:20.610 pulmonary catheter on day two

NOTE Confidence: 0.986544

00:16:21.089 --> 00:16:23.170 showed higher lactate levels, greater

NOTE Confidence: 0.986544

00:16:23.170 --> 00:16:24.690 use of vasoactive agents, and

NOTE Confidence: 0.986544

00:16:24.690 --> 00:16:26.690 temporary MCS, and had more

NOTE Confidence: 0.986544

00:16:26.690 --> 00:16:27.510 severe shock.

NOTE Confidence: 0.99516726

00:16:29.170 --> 00:16:31.010 Using the same cohort and

NOTE Confidence: 0.99516726

00:16:31.010 --> 00:16:32.209 hot off the presses, we

NOTE Confidence: 0.99516726

00:16:32.209 --> 00:16:33.430 have a brand new analysis

NOTE Confidence: 0.99516726

00:16:33.490 --> 00:16:34.550 by our team here

NOTE Confidence: 0.9809761

00:16:34.895 --> 00:16:35.935 showing that early use of

NOTE Confidence: 0.9809761

00:16:35.935 --> 00:16:38.275 mechanical circulatory support and cardiogenic

NOTE Confidence: 0.9809761

00:16:38.335 --> 00:16:40.175 shock may improve outcomes when

NOTE Confidence: 0.9809761

00:16:40.175 --> 00:16:41.855 deployed within that first day,

NOTE Confidence: 0.9809761

00:16:41.855 --> 00:16:43.615 that first golden twenty four

NOTE Confidence: 0.9809761

00:16:43.615 --> 00:16:44.115 hours.

NOTE Confidence: 0.9769875

00:16:44.655 --> 00:16:45.935 This forest plot displays that

NOTE Confidence: 0.9769875

00:16:45.935 --> 00:16:47.775 patients with IVP, Impella, and

NOTE Confidence: 0.9769875

00:16:47.775 --> 00:16:48.275 ECMO

NOTE Confidence: 0.9951028

00:16:48.930 --> 00:16:50.210 placed on day one versus

NOTE Confidence: 0.9951028

00:16:50.210 --> 00:16:51.750 day two had improved survival

NOTE Confidence: 0.9951028

00:16:51.810 --> 00:16:53.510 during their hospital stay.

NOTE Confidence: 0.9973024

00:16:55.330 --> 00:16:57.330 An important consideration during this

NOTE Confidence: 0.9973024

00:16:57.330 --> 00:16:59.090 golden day of shock is

NOTE Confidence: 0.9973024

00:16:59.090 --> 00:17:00.550 what's happening with the lactate.

NOTE Confidence: 0.93439627

00:17:01.410 --> 00:17:02.690 In the post hoc analysis

NOTE Confidence: 0.93439627

00:17:02.690 --> 00:17:03.650 of the DO RE MI

NOTE Confidence: 0.93439627

00:17:03.650 --> 00:17:04.744 trial, which I'm sure some

NOTE Confidence: 0.93439627

00:17:04.744 --> 00:17:05.945 of you are familiar with,

NOTE Confidence: 0.93439627

00:17:05.945 --> 00:17:07.705 investigators showed that rate of

NOTE Confidence: 0.93439627

00:17:07.705 --> 00:17:08.685 lactate clearance

NOTE Confidence: 0.99949324

00:17:08.985 --> 00:17:10.285 is actually a better indication

NOTE Confidence: 0.98072636

00:17:11.305 --> 00:17:13.305 of prognosis than absolute lactate

NOTE Confidence: 0.98072636

00:17:13.305 --> 00:17:14.285 value at presentation.

NOTE Confidence: 0.9972045

00:17:14.665 --> 00:17:16.265 And even more importantly, lactate

NOTE Confidence: 0.9972045

00:17:16.265 --> 00:17:17.865 clearance at eight hours was

NOTE Confidence: 0.9972045

00:17:17.865 --> 00:17:19.565 the strongest predictor of survival.

NOTE Confidence: 0.9513827

00:17:20.280 --> 00:17:21.320 And it's notable that the

NOTE Confidence: 0.9513827

00:17:21.320 --> 00:17:23.080 lactate on presentation between the

NOTE Confidence: 0.9513827

00:17:23.080 --> 00:17:23.820 two cohorts,

NOTE Confidence: 0.93021697

00:17:25.080 --> 00:17:26.680 survivors and non survivors, was

NOTE Confidence: 0.93021697

00:17:26.680 --> 00:17:28.200 the same at around three

NOTE Confidence: 0.93021697

00:17:28.200 --> 00:17:28.940 point seven.

NOTE Confidence: 0.99274254

00:17:30.280 --> 00:17:31.340 This ties into,

NOTE Confidence: 0.94694847

00:17:31.880 --> 00:17:33.000 like, kind of closing out

NOTE Confidence: 0.94694847

00:17:33.000 --> 00:17:34.200 our learning point, a really

NOTE Confidence: 0.94694847

00:17:34.200 --> 00:17:36.065 recent initiative by the president

NOTE Confidence: 0.94694847

00:17:36.065 --> 00:17:37.984 of Sky who introduced the

NOTE Confidence: 0.94694847

00:17:37.984 --> 00:17:39.345 concept of door to lactate

NOTE Confidence: 0.94694847

00:17:39.345 --> 00:17:39.845 clearance,

NOTE Confidence: 0.93304306

00:17:40.545 --> 00:17:42.545 wherein cardiogenic talk shock team

NOTE Confidence: 0.93304306

00:17:42.545 --> 00:17:43.585 should attempt to clear the

NOTE Confidence: 0.93304306

00:17:43.585 --> 00:17:45.365 lactate within twenty four hours,

NOTE Confidence: 0.98146164

00:17:45.905 --> 00:17:47.925 to improve outcomes and essentially

NOTE Confidence: 0.98146164

00:17:48.225 --> 00:17:49.505 really try to act during

NOTE Confidence: 0.98146164

00:17:49.505 --> 00:17:50.885 that golden day of shock.

NOTE Confidence: 0.9658906

00:17:52.119 --> 00:17:53.800 Alright. Now that we've really

NOTE Confidence: 0.9658906

00:17:53.800 --> 00:17:56.040 thoroughly specifically defined our patient's

NOTE Confidence: 0.9658906

00:17:56.040 --> 00:17:56.940 shock stage,

NOTE Confidence: 0.9995236

00:17:58.359 --> 00:17:59.400 let's return back to our

NOTE Confidence: 0.9995236

00:17:59.400 --> 00:17:59.900 case.

NOTE Confidence: 0.9906909

00:18:01.640 --> 00:18:03.580 Okay. So given this principle

NOTE Confidence: 0.9906909

00:18:03.640 --> 00:18:04.840 that our team you know,

NOTE Confidence: 0.9906909

00:18:04.840 --> 00:18:05.400 our cardio

NOTE Confidence: 0.9919937

00:18:06.255 --> 00:18:08.095 our cardiac critical care team

NOTE Confidence: 0.9919937

00:18:08.095 --> 00:18:08.595 knows,

NOTE Confidence: 0.97204715

00:18:09.455 --> 00:18:10.655 the team made the decision

NOTE Confidence: 0.97204715

00:18:10.655 --> 00:18:11.315 to pursue

NOTE Confidence: 0.9820638

00:18:11.775 --> 00:18:13.615 cardiac cath lab activation at

NOTE Confidence: 0.9820638

00:18:13.615 --> 00:18:15.555 four thirty AM after hours.

NOTE Confidence: 0.9576581

00:18:16.895 --> 00:18:18.015 It was a very planned

NOTE Confidence: 0.9576581

00:18:18.015 --> 00:18:20.389 approach. Operator chose femoral access

NOTE Confidence: 0.9576581

00:18:20.389 --> 00:18:22.549 in case mechanical circulatory support

NOTE Confidence: 0.9576581

00:18:22.549 --> 00:18:23.289 would be needed,

NOTE Confidence: 0.9855622

00:18:23.830 --> 00:18:25.049 and right heart catheterization

NOTE Confidence: 0.997174

00:18:25.429 --> 00:18:27.190 was performed first to give

NOTE Confidence: 0.997174

00:18:27.190 --> 00:18:29.210 her early hemodynamic information.

NOTE Confidence: 0.95521694

00:18:30.389 --> 00:18:31.909 The right heart cath displayed

NOTE Confidence: 0.95521694

00:18:31.909 --> 00:18:32.570 the following.

NOTE Confidence: 0.81612587

00:18:33.525 --> 00:18:35.465 The RA pressure was nine,

NOTE Confidence: 0.81612587

00:18:35.765 --> 00:18:37.045 r v sixty eight over

NOTE Confidence: 0.81612587

00:18:37.045 --> 00:18:37.545 sixteen,

NOTE Confidence: 0.9187474

00:18:38.165 --> 00:18:39.525 p a fifty one over

NOTE Confidence: 0.9187474

00:18:39.525 --> 00:18:40.565 thirty with the mean of

NOTE Confidence: 0.9187474

00:18:40.565 --> 00:18:42.725 thirty eight, and wedge twenty

NOTE Confidence: 0.9187474

00:18:42.725 --> 00:18:43.225 eight.

NOTE Confidence: 0.9829113

00:18:43.685 --> 00:18:45.045 Of note, the pocus, if

NOTE Confidence: 0.9829113

00:18:45.045 --> 00:18:46.405 you remember, showed some mitral

NOTE Confidence: 0.9829113

00:18:46.405 --> 00:18:46.905 regurgitation,

NOTE Confidence: 0.9835362

00:18:47.450 --> 00:18:48.490 but there were no b

NOTE Confidence: 0.9835362

00:18:48.490 --> 00:18:49.550 waves visualized.

NOTE Confidence: 0.99750465

00:18:51.450 --> 00:18:52.890 Cardiac output at that time

NOTE Confidence: 0.99750465

00:18:52.890 --> 00:18:54.410 was calculated to be two

NOTE Confidence: 0.99750465

00:18:54.410 --> 00:18:55.869 point six liters and

NOTE Confidence: 0.9739759

00:18:56.410 --> 00:18:57.930 liters per minute and cardiac

NOTE Confidence: 0.9739759

00:18:57.930 --> 00:18:59.309 index one point five.

NOTE Confidence: 0.5572196

00:18:59.845 --> 00:19:00.665 From the

NOTE Confidence: 0.98730564

00:19:01.045 --> 00:19:02.805 Left heart catheterization was then

NOTE Confidence: 0.98730564

00:19:02.805 --> 00:19:03.305 pursued.

NOTE Confidence: 0.8793827

00:19:03.605 --> 00:19:04.885 Here, we visualize and all

NOTE Confidence: 0.8793827

00:19:04.885 --> 00:19:06.805 goes fairly quickly through these.

NOTE Confidence: 0.8793827

00:19:06.805 --> 00:19:07.305 Okay.

NOTE Confidence: 0.8615651

00:19:08.325 --> 00:19:10.025 That the left main, proximal

NOTE Confidence: 0.8615651

00:19:10.085 --> 00:19:12.005 LED, and left circ are

NOTE Confidence: 0.8615651

00:19:12.005 --> 00:19:13.605 largely free of disease. Ryan's

NOTE Confidence: 0.8615651

00:19:13.605 --> 00:19:14.490 Minotaur is here

NOTE Confidence: 0.8111025

00:19:15.369 --> 00:19:16.809 today. Is that is that,

NOTE Confidence: 0.8111025

00:19:16.809 --> 00:19:18.490 like, this sponsor really I'll

NOTE Confidence: 0.8111025

00:19:18.490 --> 00:19:19.929 just go quickly through a

NOTE Confidence: 0.8111025

00:19:19.929 --> 00:19:21.450 little bit more interrogation of

NOTE Confidence: 0.8111025

00:19:21.450 --> 00:19:23.369 the LAD, conferring those significant

NOTE Confidence: 0.8111025

00:19:23.369 --> 00:19:24.910 proximal or distal CAE.

NOTE Confidence: 0.7895661

00:19:26.570 --> 00:19:28.109 And similarly, the right coronary

NOTE Confidence: 0.7895661

00:19:28.155 --> 00:19:29.915 artery was also significant Around

NOTE Confidence: 0.7895661

00:19:29.915 --> 00:19:31.035 the line, do you please

NOTE Confidence: 0.7895661

00:19:31.035 --> 00:19:32.895 mind muting? Stop myself.

NOTE Confidence: 0.9578978

00:19:33.835 --> 00:19:35.195 So things aren't really making

NOTE Confidence: 0.9578978

00:19:35.195 --> 00:19:36.875 sense. Right? We have pretty

NOTE Confidence: 0.9578978

00:19:36.875 --> 00:19:38.975 significant cardiogenic shock established.

NOTE Confidence: 0.96847594

00:19:39.435 --> 00:19:40.575 We have clean coronaries,

NOTE Confidence: 0.92791325

00:19:41.460 --> 00:19:42.660 and we have this possible

NOTE Confidence: 0.92791325

00:19:42.660 --> 00:19:44.419 mitral regurgitation, but no b.

NOTE Confidence: 0.92791325

00:19:44.419 --> 00:19:44.919 Wait.

NOTE Confidence: 0.978482

00:19:45.700 --> 00:19:47.059 At that time, decision was

NOTE Confidence: 0.978482

00:19:47.059 --> 00:19:48.340 made to cross into the

NOTE Confidence: 0.978482

00:19:48.340 --> 00:19:48.840 LV

NOTE Confidence: 0.94308233

00:19:49.299 --> 00:19:51.320 for two purposes. One, ventricular

NOTE Confidence: 0.88687724

00:19:51.619 --> 00:19:52.119 ventriculogram,

NOTE Confidence: 0.9676187

00:19:53.059 --> 00:19:53.940 which I'll play a couple

NOTE Confidence: 0.9676187

00:19:53.940 --> 00:19:55.085 times so that everyone

NOTE Confidence: 0.9607298

00:19:55.544 --> 00:19:56.765 can make a little assessment.

NOTE Confidence: 0.79015344

00:19:57.304 --> 00:19:58.184 You're gonna have less than

NOTE Confidence: 0.79015344

00:19:58.184 --> 00:19:59.358 that. Yeah. Yeah. Yeah.

NOTE Confidence: 0.5411433

00:19:59.811 --> 00:20:01.804 To follow-up as, messaging.

NOTE Confidence: 0.975324

00:20:02.905 --> 00:20:03.784 I think we're not talking

NOTE Confidence: 0.975324

00:20:03.784 --> 00:20:05.544 about genetics, though. And then,

NOTE Confidence: 0.975324

00:20:05.544 --> 00:20:07.484 additionally, the LV pressure

NOTE Confidence: 0.9974253

00:20:08.100 --> 00:20:09.780 was measured at one seventy

NOTE Confidence: 0.9974253

00:20:09.780 --> 00:20:11.160 five over thirty six

NOTE Confidence: 0.953093

00:20:11.540 --> 00:20:12.900 with pullback to the aorta

NOTE Confidence: 0.953093

00:20:12.900 --> 00:20:14.280 measuring at ninety eight.

NOTE Confidence: 0.8942923

00:20:16.660 --> 00:20:17.540 So I wanna close a

NOTE Confidence: 0.8942923

00:20:17.540 --> 00:20:18.820 question at the at this

NOTE Confidence: 0.8942923

00:20:18.820 --> 00:20:20.020 key moment in this case

NOTE Confidence: 0.8942923

00:20:20.020 --> 00:20:20.900 for you all to think

NOTE Confidence: 0.8942923

00:20:20.900 --> 00:20:22.040 about as we progress.

NOTE Confidence: 0.85294825

00:20:23.105 --> 00:20:23.984 What would you do in

NOTE Confidence: 0.85294825

00:20:23.984 --> 00:20:25.265 this moment? You know, I'm

NOTE Confidence: 0.85294825

00:20:25.265 --> 00:20:26.305 standing at the cap table.

NOTE Confidence: 0.85294825

00:20:26.305 --> 00:20:28.005 Would you add another inotrope,

NOTE Confidence: 0.85294825

00:20:28.145 --> 00:20:29.605 telomere nosy, or would

NOTE Confidence: 0.8407513

00:20:31.185 --> 00:20:32.405 you place a balloon pump?

NOTE Confidence: 0.59073645

00:20:33.345 --> 00:20:34.145 Would you lean off the

NOTE Confidence: 0.59073645

00:20:34.145 --> 00:20:34.945 beat of mean and get

NOTE Confidence: 0.59073645

00:20:34.945 --> 00:20:35.445 fluid?

NOTE Confidence: 0.5426579

00:20:36.490 --> 00:20:37.289 Or what time you're going

NOTE Confidence: 0.5426579

00:20:37.289 --> 00:20:38.570 to do the more aggressive

NOTE Confidence: 0.5426579

00:20:38.570 --> 00:20:39.490 fluid removal and

NOTE Confidence: 0.48222172

00:20:40.570 --> 00:20:41.470 for ultra filter.

NOTE Confidence: 0.51159924

00:20:41.850 --> 00:20:42.970 And then doing air bloods

NOTE Confidence: 0.51159924

00:20:42.970 --> 00:20:44.590 go out. They just moving.

NOTE Confidence: 0.835062

00:20:46.730 --> 00:20:48.029 They got the guts.

NOTE Confidence: 0.92043656

00:20:48.835 --> 00:20:49.715 Before I share what the

NOTE Confidence: 0.92043656

00:20:49.715 --> 00:20:50.835 team did next, I think

NOTE Confidence: 0.92043656

00:20:50.835 --> 00:20:51.795 it's important to go over

NOTE Confidence: 0.92043656

00:20:51.795 --> 00:20:52.915 the echo that was performed

NOTE Confidence: 0.92043656

00:20:52.915 --> 00:20:53.875 a little bit later in

NOTE Confidence: 0.92043656

00:20:53.875 --> 00:20:55.155 that morning if everyone Wait.

NOTE Confidence: 0.92043656

00:20:55.155 --> 00:20:56.994 Wait. Wait. Wait a second.

NOTE Confidence: 0.92043656

00:20:56.994 --> 00:20:57.555 I'll just

NOTE Confidence: 0.8981511

00:20:59.155 --> 00:21:00.195 Right at the bat Just

NOTE Confidence: 0.8981511

00:21:00.195 --> 00:21:01.555 like it. I'm going to

NOTE Confidence: 0.8981511

00:21:01.555 --> 00:21:03.075 go into our parasternal long

NOTE Confidence: 0.8981511

00:21:03.075 --> 00:21:04.799 axis view. We can already

NOTE Confidence: 0.8981511

00:21:04.799 --> 00:21:06.080 see that there's a decreased

NOTE Confidence: 0.8981511

00:21:06.080 --> 00:21:06.580 LVEF,

NOTE Confidence: 0.9924436

00:21:07.119 --> 00:21:08.480 and there's also some proximal

NOTE Confidence: 0.9924436

00:21:08.480 --> 00:21:09.619 thickening of the interventricular

NOTE Confidence: 0.9999278

00:21:10.000 --> 00:21:10.500 septum

NOTE Confidence: 0.9944264

00:21:10.880 --> 00:21:12.720 or sigmoid septum. We also

NOTE Confidence: 0.9944264

00:21:12.720 --> 00:21:14.080 get a preliminary notion that

NOTE Confidence: 0.9944264

00:21:14.080 --> 00:21:15.539 there's some wall motion abnormality

NOTE Confidence: 0.96470106

00:21:16.080 --> 00:21:17.460 in the mid interseptal

NOTE Confidence: 0.84654003

00:21:18.000 --> 00:21:18.820 and mid inferolateral

NOTE Confidence: 0.9561938

00:21:19.119 --> 00:21:19.619 segments.

NOTE Confidence: 0.9980676

00:21:20.135 --> 00:21:21.735 And the mitral valve appears

NOTE Confidence: 0.9980676

00:21:21.735 --> 00:21:23.575 structurally fairly normal, but we

NOTE Confidence: 0.9980676

00:21:23.575 --> 00:21:24.855 need to evaluate function a

NOTE Confidence: 0.9980676

00:21:24.855 --> 00:21:25.595 little more.

NOTE Confidence: 0.971872

00:21:27.175 --> 00:21:28.955 In this color Doppler interrogation

NOTE Confidence: 0.971872

00:21:29.015 --> 00:21:30.215 over the mitral valve and

NOTE Confidence: 0.971872

00:21:30.215 --> 00:21:31.494 the LV outflow tract, we

NOTE Confidence: 0.971872

00:21:31.494 --> 00:21:32.855 see some aliasing of color

NOTE Confidence: 0.971872

00:21:32.855 --> 00:21:35.115 Doppler suggestive of possibly higher

NOTE Confidence: 0.971872

00:21:35.320 --> 00:21:36.780 velocity flow in that area.

NOTE Confidence: 0.97828406

00:21:39.000 --> 00:21:39.720 For the sake of time,

NOTE Confidence: 0.97828406

00:21:39.720 --> 00:21:41.020 I'll just show some representative

NOTE Confidence: 0.97828406

00:21:41.160 --> 00:21:42.520 images for wall motion. So

NOTE Confidence: 0.97828406

00:21:42.520 --> 00:21:43.960 in our apical four chamber

NOTE Confidence: 0.97828406

00:21:43.960 --> 00:21:45.080 view, we see that RV

NOTE Confidence: 0.97828406

00:21:45.080 --> 00:21:46.600 function is preserved, but the

NOTE Confidence: 0.97828406

00:21:46.600 --> 00:21:47.740 LV mid interlateral

NOTE Confidence: 0.9761807

00:21:48.040 --> 00:21:49.754 and infraceptal segments as well

NOTE Confidence: 0.9761807

00:21:49.754 --> 00:21:51.434 as apical septal and lateral

NOTE Confidence: 0.9761807

00:21:51.434 --> 00:21:53.434 segments apical lateral segments are

NOTE Confidence: 0.9761807

00:21:53.434 --> 00:21:53.934 akinetic,

NOTE Confidence: 0.9990132

00:21:54.634 --> 00:21:56.075 and the basal segments appear

NOTE Confidence: 0.9990132

00:21:56.075 --> 00:21:57.534 normal to even possibly

NOTE Confidence: 0.99925613

00:21:57.994 --> 00:21:58.494 hyperkinetic

NOTE Confidence: 0.97455

00:21:59.115 --> 00:21:59.774 in contrast.

NOTE Confidence: 0.9910519

00:22:00.600 --> 00:22:02.200 The LVEF by three d

NOTE Confidence: 0.9910519

00:22:02.200 --> 00:22:03.320 at this moment was noted

NOTE Confidence: 0.9910519

00:22:03.320 --> 00:22:04.619 to be forty four percent

NOTE Confidence: 0.9910519

00:22:04.840 --> 00:22:06.200 from her prior of sixty

NOTE Confidence: 0.9910519

00:22:06.200 --> 00:22:06.700 five.

NOTE Confidence: 0.96600693

00:22:08.200 --> 00:22:09.480 In this two chamber view,

NOTE Confidence: 0.96600693

00:22:09.480 --> 00:22:10.760 we further confirm mid to

NOTE Confidence: 0.96600693

00:22:10.760 --> 00:22:12.940 apical anterior and inferior hypokinesis

NOTE Confidence: 0.9899247

00:22:13.480 --> 00:22:15.155 with preserved or possibly even

NOTE Confidence: 0.9899247

00:22:15.155 --> 00:22:16.355 increased wall motion in the

NOTE Confidence: 0.9899247

00:22:16.355 --> 00:22:17.174 basal segments.

NOTE Confidence: 0.9813112

00:22:18.674 --> 00:22:19.955 And color Doppler over the

NOTE Confidence: 0.9813112

00:22:19.955 --> 00:22:21.015 mitral and LVOT

NOTE Confidence: 0.9471239

00:22:21.475 --> 00:22:22.195 in the,

NOTE Confidence: 0.9618114

00:22:22.915 --> 00:22:24.375 or five chamber view,

NOTE Confidence: 0.9574119

00:22:24.915 --> 00:22:26.455 displays MR with a posterior

NOTE Confidence: 0.9574119

00:22:26.515 --> 00:22:28.195 directed jet as well as,

NOTE Confidence: 0.9574119

00:22:28.195 --> 00:22:30.269 again, those velocities and aliasing

NOTE Confidence: 0.9574119

00:22:30.269 --> 00:22:31.010 in the LVOT.

NOTE Confidence: 0.91867286

00:22:32.429 --> 00:22:33.789 So our STU ECHO techs

NOTE Confidence: 0.91867286

00:22:33.789 --> 00:22:35.789 use, continuous wave Doppler to

NOTE Confidence: 0.91867286

00:22:35.789 --> 00:22:37.330 interrogate the mitral regurgitation

NOTE Confidence: 0.9887333

00:22:37.789 --> 00:22:38.830 jet as well as the

NOTE Confidence: 0.9887333

00:22:38.830 --> 00:22:39.330 LVOT.

NOTE Confidence: 0.97017777

00:22:39.950 --> 00:22:41.070 Focusing on the left hand

NOTE Confidence: 0.97017777

00:22:41.070 --> 00:22:42.750 side, the color Doppler and

NOTE Confidence: 0.97017777

00:22:42.750 --> 00:22:44.510 continuous wave are concerned for

NOTE Confidence: 0.97017777

00:22:44.510 --> 00:22:46.135 severe MR. But on the

NOTE Confidence: 0.97017777

00:22:46.135 --> 00:22:47.255 right hand side, if you

NOTE Confidence: 0.97017777

00:22:47.255 --> 00:22:48.375 notice where the point of

NOTE Confidence: 0.97017777

00:22:48.375 --> 00:22:49.275 focus is,

NOTE Confidence: 0.97896403

00:22:49.575 --> 00:22:50.775 and I've just highlighted that

NOTE Confidence: 0.97896403

00:22:50.775 --> 00:22:51.275 here,

NOTE Confidence: 0.9902529

00:22:51.815 --> 00:22:53.595 on the continuous wave Doppler

NOTE Confidence: 0.9902529

00:22:53.734 --> 00:22:54.855 line, you can see that

NOTE Confidence: 0.9902529

00:22:54.855 --> 00:22:55.815 when aimed in the region

NOTE Confidence: 0.9902529

00:22:55.815 --> 00:22:57.015 of the LVOT, we are

NOTE Confidence: 0.9902529

00:22:57.015 --> 00:22:57.895 able to find a very

NOTE Confidence: 0.9902529

00:22:57.895 --> 00:22:59.595 high gradient of sixty five

NOTE Confidence: 0.9902529

00:22:59.655 --> 00:23:00.395 at rest.

NOTE Confidence: 0.9765662

00:23:00.720 --> 00:23:01.840 And at this moment, I've

NOTE Confidence: 0.9765662

00:23:01.840 --> 00:23:03.460 talked a lot. I'll invite

NOTE Confidence: 0.9765662

00:23:03.679 --> 00:23:05.359 doctor Robert McNamara to give

NOTE Confidence: 0.9765662

00:23:05.359 --> 00:23:06.640 his preliminary thoughts on the

NOTE Confidence: 0.9765662

00:23:06.640 --> 00:23:08.240 findings and give us our

NOTE Confidence: 0.9765662

00:23:08.240 --> 00:23:08.740 diagnosis.

NOTE Confidence: 0.72145236

00:23:10.000 --> 00:23:11.540 You can do it, Sandra.

NOTE Confidence: 0.9027828

00:23:12.240 --> 00:23:14.100 K. Yeah. I think so.

NOTE Confidence: 0.9811717

00:23:16.195 --> 00:23:16.994 K. Can you hear me?

NOTE Confidence: 0.9811717

00:23:16.994 --> 00:23:18.835 Yeah. Thanks, Divya. You did

NOTE Confidence: 0.9811717

00:23:18.835 --> 00:23:20.195 a excellent job on the

NOTE Confidence: 0.9811717

00:23:20.195 --> 00:23:21.475 presentation as well as on

NOTE Confidence: 0.9811717

00:23:21.475 --> 00:23:22.355 the on the echo. I

NOTE Confidence: 0.9811717

00:23:22.355 --> 00:23:23.415 just have a few,

NOTE Confidence: 0.99150634

00:23:23.955 --> 00:23:24.455 comments,

NOTE Confidence: 0.94434166

00:23:24.915 --> 00:23:26.355 to make. I mean, this

NOTE Confidence: 0.94434166

00:23:26.355 --> 00:23:28.115 case is somewhat unique. We

NOTE Confidence: 0.94434166

00:23:28.115 --> 00:23:29.395 usually have the echo. We

NOTE Confidence: 0.94434166

00:23:29.395 --> 00:23:30.515 usually do not have the

NOTE Confidence: 0.94434166

00:23:30.515 --> 00:23:32.490 cap before we, have the

NOTE Confidence: 0.94434166

00:23:32.490 --> 00:23:32.990 echo.

NOTE Confidence: 0.9897369

00:23:33.530 --> 00:23:34.490 And many of the times

NOTE Confidence: 0.9897369

00:23:34.490 --> 00:23:36.010 we're trying to decide whether

NOTE Confidence: 0.9897369

00:23:36.010 --> 00:23:37.230 the patient should go,

NOTE Confidence: 0.91513956

00:23:37.609 --> 00:23:39.050 to cath because, you know,

NOTE Confidence: 0.91513956

00:23:39.050 --> 00:23:40.430 of course, they always say,

NOTE Confidence: 0.8941236

00:23:40.810 --> 00:23:41.770 I guess, am I allowed

NOTE Confidence: 0.8941236

00:23:41.770 --> 00:23:42.830 to give their diagnosis?

NOTE Confidence: 0.69274235

00:23:43.210 --> 00:23:43.710 Or,

NOTE Confidence: 0.9259321

00:23:45.875 --> 00:23:46.915 you know, for stress induced

NOTE Confidence: 0.9259321

00:23:46.915 --> 00:23:47.415 cardiomyopathy,

NOTE Confidence: 0.96033657

00:23:48.994 --> 00:23:50.434 you know, they say it's

NOTE Confidence: 0.96033657

00:23:50.434 --> 00:23:52.115 a diagnosis exclusion, so you

NOTE Confidence: 0.96033657

00:23:52.115 --> 00:23:53.895 wanna rule out coronary disease.

NOTE Confidence: 0.9359484

00:23:54.355 --> 00:23:55.715 But many times the patients

NOTE Confidence: 0.9359484

00:23:55.715 --> 00:23:57.350 are so sick that, the

NOTE Confidence: 0.9359484

00:23:57.350 --> 00:23:59.030 risk benefit ratio of that

NOTE Confidence: 0.9359484

00:23:59.030 --> 00:24:00.790 is, is difficult so you're

NOTE Confidence: 0.9359484

00:24:00.790 --> 00:24:01.910 trying to decide whether a

NOTE Confidence: 0.9359484

00:24:01.910 --> 00:24:02.810 cath is needed,

NOTE Confidence: 0.9706645

00:24:03.430 --> 00:24:04.790 or not. So a lot

NOTE Confidence: 0.9706645

00:24:04.790 --> 00:24:06.070 of it is, in terms

NOTE Confidence: 0.9706645

00:24:06.070 --> 00:24:07.670 of looking at the images

NOTE Confidence: 0.9706645

00:24:07.670 --> 00:24:09.530 to see what's the likelihood

NOTE Confidence: 0.9334969

00:24:09.910 --> 00:24:10.695 of this. And of course,

NOTE Confidence: 0.9334969

00:24:10.695 --> 00:24:11.855 if any patient can go

NOTE Confidence: 0.9334969

00:24:11.855 --> 00:24:12.994 to cath, they do,

NOTE Confidence: 0.9929147

00:24:13.455 --> 00:24:14.835 but many of the patients

NOTE Confidence: 0.89181966

00:24:15.135 --> 00:24:16.414 are so sick that you

NOTE Confidence: 0.89181966

00:24:16.414 --> 00:24:17.774 may not need to. But

NOTE Confidence: 0.89181966

00:24:17.774 --> 00:24:18.835 in any event, so

NOTE Confidence: 0.9463472

00:24:19.855 --> 00:24:21.054 the two d images are

NOTE Confidence: 0.9463472

00:24:21.054 --> 00:24:22.095 very important to kind of

NOTE Confidence: 0.9463472

00:24:22.095 --> 00:24:22.895 see and to kind of

NOTE Confidence: 0.9463472

00:24:22.895 --> 00:24:23.635 get that

NOTE Confidence: 0.84233016

00:24:24.179 --> 00:24:24.679 idea.

NOTE Confidence: 0.90906364

00:24:25.139 --> 00:24:26.340 You could see on here

NOTE Confidence: 0.90906364

00:24:26.340 --> 00:24:27.380 where it was the the

NOTE Confidence: 0.90906364

00:24:27.380 --> 00:24:28.359 typical apical,

NOTE Confidence: 0.8999545

00:24:30.899 --> 00:24:31.399 ballooning,

NOTE Confidence: 0.99854594

00:24:31.940 --> 00:24:32.440 cardiomyopathy

NOTE Confidence: 0.9195469

00:24:32.980 --> 00:24:33.859 that you have. But there

NOTE Confidence: 0.9195469

00:24:33.859 --> 00:24:35.139 are other ones we have

NOTE Confidence: 0.9195469

00:24:35.139 --> 00:24:35.639 mid,

NOTE Confidence: 0.986883

00:24:35.940 --> 00:24:37.139 as well as basal that

NOTE Confidence: 0.986883

00:24:37.139 --> 00:24:38.419 can make things more even

NOTE Confidence: 0.986883

00:24:38.419 --> 00:24:39.159 more confusing.

NOTE Confidence: 0.97364724

00:24:40.565 --> 00:24:41.765 For this one, it's very

NOTE Confidence: 0.97364724

00:24:41.765 --> 00:24:42.965 interesting when the patients are

NOTE Confidence: 0.97364724

00:24:42.965 --> 00:24:44.244 so sick and you're you're

NOTE Confidence: 0.97364724

00:24:44.244 --> 00:24:46.185 worried about this gradient and,

NOTE Confidence: 0.91411227

00:24:46.645 --> 00:24:48.005 you know, particularly with the

NOTE Confidence: 0.91411227

00:24:48.005 --> 00:24:48.505 MR,

NOTE Confidence: 0.92713845

00:24:49.365 --> 00:24:50.805 it can be very difficult

NOTE Confidence: 0.92713845

00:24:50.805 --> 00:24:52.165 to differentiate the two and

NOTE Confidence: 0.92713845

00:24:52.165 --> 00:24:53.125 you can one of the

NOTE Confidence: 0.92713845

00:24:53.125 --> 00:24:54.005 things that we ask the

NOTE Confidence: 0.92713845

00:24:54.005 --> 00:24:55.409 synoders to to do is

NOTE Confidence: 0.92713845

00:24:55.409 --> 00:24:56.609 to give us this MR

NOTE Confidence: 0.92713845

00:24:56.609 --> 00:24:57.750 versus the LVOT.

NOTE Confidence: 0.923068

00:24:58.690 --> 00:24:59.889 And on sometimes it can

NOTE Confidence: 0.923068

00:24:59.889 --> 00:25:01.409 be very difficult because you

NOTE Confidence: 0.923068

00:25:01.409 --> 00:25:02.450 look at this LVOT and

NOTE Confidence: 0.923068

00:25:02.450 --> 00:25:03.250 this is very high. I

NOTE Confidence: 0.923068

00:25:03.250 --> 00:25:04.289 mean, this looks like an

NOTE Confidence: 0.923068

00:25:04.289 --> 00:25:04.789 MR,

NOTE Confidence: 0.97428185

00:25:05.409 --> 00:25:07.090 jet, in many ways and

NOTE Confidence: 0.97428185

00:25:07.090 --> 00:25:08.369 and could be very easily

NOTE Confidence: 0.97428185

00:25:08.369 --> 00:25:08.869 confused.

NOTE Confidence: 0.9303812

00:25:09.385 --> 00:25:10.105 But I asked if you

NOTE Confidence: 0.9303812

00:25:10.105 --> 00:25:11.385 could put this on next

NOTE Confidence: 0.9303812

00:25:11.385 --> 00:25:12.184 to each other because you

NOTE Confidence: 0.9303812

00:25:12.184 --> 00:25:13.244 can kind of see.

NOTE Confidence: 0.9521646

00:25:13.625 --> 00:25:15.304 It's subtle, but, if you

NOTE Confidence: 0.9521646

00:25:15.304 --> 00:25:16.505 look at where the jet

NOTE Confidence: 0.9521646

00:25:16.505 --> 00:25:17.005 starts,

NOTE Confidence: 0.98686326

00:25:17.705 --> 00:25:18.984 and compare it with the

NOTE Confidence: 0.98686326

00:25:18.984 --> 00:25:20.984 ECG, the jet is earlier

NOTE Confidence: 0.98686326

00:25:20.984 --> 00:25:22.105 on the left screen with

NOTE Confidence: 0.98686326

00:25:22.105 --> 00:25:23.145 the MR than it is

NOTE Confidence: 0.98686326

00:25:23.145 --> 00:25:24.169 on the right. And, you

NOTE Confidence: 0.98686326

00:25:24.169 --> 00:25:25.130 know, as we all know,

NOTE Confidence: 0.98686326

00:25:25.130 --> 00:25:27.690 the MR murmur is is,

NOTE Confidence: 0.85684663

00:25:28.090 --> 00:25:29.690 longer, starts earlier and ends

NOTE Confidence: 0.85684663

00:25:29.690 --> 00:25:30.590 later than,

NOTE Confidence: 0.96350133

00:25:31.529 --> 00:25:31.850 the,

NOTE Confidence: 0.9711849

00:25:32.330 --> 00:25:33.529 than an outflow jet. So

NOTE Confidence: 0.9711849

00:25:33.529 --> 00:25:35.049 that would be helpful. And

NOTE Confidence: 0.9711849

00:25:35.049 --> 00:25:36.169 it's and when it's this

NOTE Confidence: 0.9711849

00:25:36.169 --> 00:25:37.210 high, it's difficult to say,

NOTE Confidence: 0.9711849

00:25:37.210 --> 00:25:38.169 but the MR is always

NOTE Confidence: 0.9711849

00:25:38.169 --> 00:25:39.549 gonna have a higher velocity,

NOTE Confidence: 0.9764272

00:25:40.304 --> 00:25:41.825 than the LVOT. If you

NOTE Confidence: 0.9764272

00:25:41.825 --> 00:25:42.884 think about it, it's,

NOTE Confidence: 0.9574482

00:25:43.504 --> 00:25:44.865 it's a gradient across the

NOTE Confidence: 0.9574482

00:25:44.945 --> 00:25:46.625 into the aorta versus into

NOTE Confidence: 0.9574482

00:25:46.625 --> 00:25:47.365 the LA.

NOTE Confidence: 0.97250986

00:25:47.825 --> 00:25:49.105 So that's an important thing

NOTE Confidence: 0.97250986

00:25:49.105 --> 00:25:49.605 here,

NOTE Confidence: 0.9571901

00:25:51.024 --> 00:25:52.544 for for the jet because,

NOTE Confidence: 0.9571901

00:25:52.544 --> 00:25:53.345 you know, it can be

NOTE Confidence: 0.9571901

00:25:53.345 --> 00:25:53.845 confusing.

NOTE Confidence: 0.9826323

00:25:54.304 --> 00:25:55.524 Go to the next slide.

NOTE Confidence: 0.8597691

00:25:56.200 --> 00:25:57.560 And just very quickly, and

NOTE Confidence: 0.8597691

00:25:57.560 --> 00:25:58.440 I asked because I thought

NOTE Confidence: 0.8597691

00:25:58.440 --> 00:25:59.660 this was interesting.

NOTE Confidence: 0.9809085

00:26:00.440 --> 00:26:02.280 The data on strain and

NOTE Confidence: 0.9809085

00:26:02.280 --> 00:26:04.040 and stress induced cardiomyopathy is

NOTE Confidence: 0.9809085

00:26:04.040 --> 00:26:05.240 very mixed. Some have shown

NOTE Confidence: 0.9809085

00:26:05.240 --> 00:26:06.619 that you really can't differentiate

NOTE Confidence: 0.9809085

00:26:06.680 --> 00:26:08.520 it. But this case was

NOTE Confidence: 0.9809085

00:26:08.520 --> 00:26:10.119 very, interesting. If you look

NOTE Confidence: 0.9809085

00:26:10.119 --> 00:26:11.980 at the the bottom left

NOTE Confidence: 0.7868488

00:26:12.895 --> 00:26:14.195 one, you know,

NOTE Confidence: 0.7028642

00:26:14.575 --> 00:26:15.234 in general,

NOTE Confidence: 0.91260296

00:26:15.695 --> 00:26:16.195 strain,

NOTE Confidence: 0.9520842

00:26:16.575 --> 00:26:17.535 is very good. We do

NOTE Confidence: 0.9520842

00:26:17.535 --> 00:26:18.815 global strain and we use

NOTE Confidence: 0.9520842

00:26:18.815 --> 00:26:19.875 a lot in the cardiomyopathy

NOTE Confidence: 0.9597481

00:26:20.255 --> 00:26:21.695 and and global to try

NOTE Confidence: 0.9597481

00:26:21.695 --> 00:26:22.655 to see what what it

NOTE Confidence: 0.9597481

00:26:22.655 --> 00:26:24.175 is and a normal would

NOTE Confidence: 0.9597481

00:26:24.175 --> 00:26:25.855 be all red. That's,

NOTE Confidence: 0.9332102

00:26:26.255 --> 00:26:27.555 what we do for normal.

NOTE Confidence: 0.9332102

00:26:27.679 --> 00:26:29.359 And if you throw for

NOTE Confidence: 0.9332102

00:26:29.359 --> 00:26:31.200 amyloid, doctor Miller's looking over

NOTE Confidence: 0.9332102

00:26:31.200 --> 00:26:32.640 there and, you know, we

NOTE Confidence: 0.9332102

00:26:32.640 --> 00:26:34.000 have what's called cherry on

NOTE Confidence: 0.9332102

00:26:34.000 --> 00:26:35.299 top because the,

NOTE Confidence: 0.96825576

00:26:35.840 --> 00:26:37.460 the apex is preserved.

NOTE Confidence: 0.95843834

00:26:37.919 --> 00:26:38.799 But this one is, if

NOTE Confidence: 0.95843834

00:26:38.799 --> 00:26:39.520 you can think of it,

NOTE Confidence: 0.95843834

00:26:39.520 --> 00:26:41.220 it's exact opposite of that.

NOTE Confidence: 0.89410985

00:26:41.765 --> 00:26:43.045 It's the the pink,

NOTE Confidence: 0.8812573

00:26:43.845 --> 00:26:45.685 is, showing a a worse

NOTE Confidence: 0.8812573

00:26:45.685 --> 00:26:46.185 strain,

NOTE Confidence: 0.99652976

00:26:46.645 --> 00:26:47.525 than the red,

NOTE Confidence: 0.98655635

00:26:47.845 --> 00:26:49.045 which goes along with our

NOTE Confidence: 0.98655635

00:26:49.045 --> 00:26:50.665 clinical presentation. So,

NOTE Confidence: 0.9729588

00:26:50.965 --> 00:26:52.005 I can't say that this

NOTE Confidence: 0.9729588

00:26:52.005 --> 00:26:52.325 is,

NOTE Confidence: 0.90988463

00:26:53.045 --> 00:26:54.085 always this way and it's

NOTE Confidence: 0.90988463

00:26:54.085 --> 00:26:55.605 not, diagnostic. But in this

NOTE Confidence: 0.90988463

00:26:55.605 --> 00:26:56.985 case, it was, very,

NOTE Confidence: 0.99847966

00:26:57.650 --> 00:26:58.150 instructive.

NOTE Confidence: 0.9368604

00:26:58.690 --> 00:26:59.840 Thank you so much.

NOTE Confidence: 0.43328342

00:27:09.255 --> 00:27:09.755 I

NOTE Confidence: 0.816682

00:27:10.295 --> 00:27:12.234 belong there. Yes. Please.

NOTE Confidence: 0.8998202

00:27:13.815 --> 00:27:14.855 Go back I don't know

NOTE Confidence: 0.8998202

00:27:14.855 --> 00:27:15.994 how to put it. Yeah.

NOTE Confidence: 0.9844991

00:27:19.095 --> 00:27:20.135 Okay. So go back to

NOTE Confidence: 0.9844991

00:27:20.135 --> 00:27:21.755 the mitral and the LVOT.

NOTE Confidence: 0.87616473

00:27:22.455 --> 00:27:23.655 So from the Cath Lab

NOTE Confidence: 0.87616473

00:27:23.655 --> 00:27:24.155 perspective,

NOTE Confidence: 0.96231073

00:27:25.290 --> 00:27:26.730 personally, I was struggling with

NOTE Confidence: 0.96231073

00:27:26.730 --> 00:27:28.110 the same based on hemodynamics.

NOTE Confidence: 0.96231073

00:27:28.410 --> 00:27:29.470 Is this MR

NOTE Confidence: 0.9769319

00:27:29.930 --> 00:27:31.610 or is an LVOT gradient?

NOTE Confidence: 0.9769319

00:27:31.610 --> 00:27:32.650 Right? So and that's why

NOTE Confidence: 0.9769319

00:27:32.650 --> 00:27:33.450 I asked you to put

NOTE Confidence: 0.9769319

00:27:33.450 --> 00:27:35.369 the wedge tracing because I

NOTE Confidence: 0.9769319

00:27:35.369 --> 00:27:36.890 I got fixated on that

NOTE Confidence: 0.9769319

00:27:36.890 --> 00:27:38.010 and had to rely on

NOTE Confidence: 0.9769319

00:27:38.010 --> 00:27:39.310 that. I don't see significant

NOTE Confidence: 0.9769319

00:27:39.369 --> 00:27:40.544 b waves. I don't think

NOTE Confidence: 0.9769319

00:27:40.544 --> 00:27:41.524 this is MR.

NOTE Confidence: 0.9390066

00:27:42.144 --> 00:27:43.424 And and that's when we

NOTE Confidence: 0.9390066

00:27:43.424 --> 00:27:43.924 crossed

NOTE Confidence: 0.95900595

00:27:44.465 --> 00:27:45.984 the the LV and noticed

NOTE Confidence: 0.95900595

00:27:45.984 --> 00:27:47.284 that significant gradient.

NOTE Confidence: 0.8757122

00:27:48.144 --> 00:27:49.504 It it was an invasive

NOTE Confidence: 0.8757122

00:27:49.504 --> 00:27:50.004 hypodynamic

NOTE Confidence: 0.88371724

00:27:50.304 --> 00:27:52.384 based diagnosis because as as

NOTE Confidence: 0.88371724

00:27:52.384 --> 00:27:53.205 Bob mentioned,

NOTE Confidence: 0.9572447

00:27:53.510 --> 00:27:54.630 we got the echo after

NOTE Confidence: 0.9572447

00:27:54.630 --> 00:27:56.230 the cath. So that's usually

NOTE Confidence: 0.9572447

00:27:56.230 --> 00:27:57.670 not the case. And and

NOTE Confidence: 0.9572447

00:27:57.670 --> 00:27:58.630 it's easier when you get

NOTE Confidence: 0.9572447

00:27:58.630 --> 00:28:00.390 the ballooning, apical ballooning, and

NOTE Confidence: 0.9572447

00:28:00.390 --> 00:28:01.350 then just cath them and

NOTE Confidence: 0.9572447

00:28:01.350 --> 00:28:02.950 see no coronary artery disease.

NOTE Confidence: 0.9572447

00:28:02.950 --> 00:28:04.010 But doing,

NOTE Confidence: 0.99901605

00:28:05.350 --> 00:28:05.835 just

NOTE Confidence: 0.8846421

00:28:06.234 --> 00:28:06.815 a hemodynamics

NOTE Confidence: 0.9095762

00:28:07.115 --> 00:28:07.615 based,

NOTE Confidence: 0.990931

00:28:08.315 --> 00:28:09.755 diagnosis, I think it's one

NOTE Confidence: 0.990931

00:28:09.755 --> 00:28:10.635 of the teaching points of

NOTE Confidence: 0.990931

00:28:10.635 --> 00:28:11.375 this case.

NOTE Confidence: 0.91651154

00:28:13.595 --> 00:28:14.654 I have a quick question.

NOTE Confidence: 0.96769875

00:28:15.835 --> 00:28:16.794 Since you brought up the

NOTE Confidence: 0.96769875

00:28:16.794 --> 00:28:18.335 question, the point, Carlos,

NOTE Confidence: 0.97225386

00:28:18.635 --> 00:28:20.330 just routinely, when you do

NOTE Confidence: 0.97225386

00:28:20.330 --> 00:28:21.530 have the echo first, it

NOTE Confidence: 0.97225386

00:28:21.530 --> 00:28:22.890 raises a concern of stress

NOTE Confidence: 0.97225386

00:28:22.890 --> 00:28:23.390 cardiomyopathy.

NOTE Confidence: 0.9496082

00:28:24.170 --> 00:28:25.369 How and so you do

NOTE Confidence: 0.9496082

00:28:25.369 --> 00:28:26.410 your left heart cath to

NOTE Confidence: 0.9496082

00:28:26.410 --> 00:28:27.930 rule out ischemic disease. How

NOTE Confidence: 0.9496082

00:28:27.930 --> 00:28:29.369 often do you consider to

NOTE Confidence: 0.9496082

00:28:29.369 --> 00:28:30.330 cross the valve to see

NOTE Confidence: 0.9496082

00:28:30.330 --> 00:28:31.369 if there's a gradient or

NOTE Confidence: 0.9496082

00:28:31.369 --> 00:28:31.869 not?

NOTE Confidence: 0.8591906

00:28:32.650 --> 00:28:34.270 Depends on the patient. It's

NOTE Confidence: 0.9889306

00:28:35.885 --> 00:28:36.385 stable.

NOTE Confidence: 0.9852514

00:28:37.165 --> 00:28:38.445 If the patient is stable,

NOTE Confidence: 0.9852514

00:28:38.445 --> 00:28:39.165 I don't think we need

NOTE Confidence: 0.9852514

00:28:39.165 --> 00:28:39.905 to document,

NOTE Confidence: 0.9418383

00:28:41.485 --> 00:28:42.684 an a gradient, which you

NOTE Confidence: 0.9418383

00:28:42.684 --> 00:28:43.725 can get by echo. But

NOTE Confidence: 0.9418383

00:28:43.725 --> 00:28:44.765 if the patient is very

NOTE Confidence: 0.9418383

00:28:44.765 --> 00:28:46.304 unstable like she was,

NOTE Confidence: 0.9585441

00:28:46.890 --> 00:28:47.930 I think it's important to

NOTE Confidence: 0.9585441

00:28:47.930 --> 00:28:49.050 know how bad the gradient

NOTE Confidence: 0.9585441

00:28:49.050 --> 00:28:50.010 is and what can we

NOTE Confidence: 0.9585441

00:28:50.010 --> 00:28:51.790 do to mitigate that.

NOTE Confidence: 0.7598966

00:28:58.835 --> 00:28:59.735 Just to show

NOTE Confidence: 0.8350116

00:29:02.195 --> 00:29:03.495 you don't see very often

NOTE Confidence: 0.8761635

00:29:04.195 --> 00:29:05.735 the distinction between the LVOT

NOTE Confidence: 0.9690561

00:29:06.035 --> 00:29:07.015 and the aorta

NOTE Confidence: 0.9710694

00:29:07.715 --> 00:29:09.895 aortic gradients that were measured

NOTE Confidence: 0.9710694

00:29:10.115 --> 00:29:10.615 simultaneously.

NOTE Confidence: 0.98590875

00:29:11.075 --> 00:29:11.575 Right?

NOTE Confidence: 0.9380611

00:29:12.595 --> 00:29:12.915 So

NOTE Confidence: 0.8666089

00:29:13.460 --> 00:29:15.220 yeah, this this one. Yeah.

NOTE Confidence: 0.8666089

00:29:15.220 --> 00:29:16.980 Oh, sorry. Comment on this

NOTE Confidence: 0.8666089

00:29:16.980 --> 00:29:17.700 because I think this is

NOTE Confidence: 0.8666089

00:29:17.700 --> 00:29:19.220 an important teaching moment. Okay.

NOTE Confidence: 0.8666089

00:29:19.220 --> 00:29:20.580 I don't think you see

NOTE Confidence: 0.8666089

00:29:20.580 --> 00:29:22.200 this so obviously

NOTE Confidence: 0.9270122

00:29:22.500 --> 00:29:23.720 obvious, this distinction

NOTE Confidence: 0.91542345

00:29:24.100 --> 00:29:25.460 between these two gradients. And

NOTE Confidence: 0.91542345

00:29:25.460 --> 00:29:26.804 and tell maybe tell the

NOTE Confidence: 0.91542345

00:29:26.804 --> 00:29:27.605 scientists in the room who

NOTE Confidence: 0.91542345

00:29:27.605 --> 00:29:28.325 may not see us every

NOTE Confidence: 0.91542345

00:29:28.325 --> 00:29:30.004 day why what what we're

NOTE Confidence: 0.91542345

00:29:30.004 --> 00:29:31.465 actually measuring here.

NOTE Confidence: 0.9513137

00:29:32.164 --> 00:29:33.605 I actually, I think I'm

NOTE Confidence: 0.9513137

00:29:33.684 --> 00:29:34.965 I don't wanna steal Carlos'

NOTE Confidence: 0.9513137

00:29:34.965 --> 00:29:35.924 center because he was actually

NOTE Confidence: 0.9513137

00:29:35.924 --> 00:29:36.884 gonna speak about this. So

NOTE Confidence: 0.9513137

00:29:36.965 --> 00:29:37.845 Oh, okay. I I can

NOTE Confidence: 0.9513137

00:29:37.845 --> 00:29:38.884 save it for Carlos to

NOTE Confidence: 0.9513137

00:29:38.884 --> 00:29:40.085 talk about when he speaks

NOTE Confidence: 0.9513137

00:29:40.085 --> 00:29:41.205 about it, when he's

NOTE Confidence: 0.96016973

00:29:42.270 --> 00:29:43.550 oh, then I'm happy to

NOTE Confidence: 0.96016973

00:29:43.550 --> 00:29:44.530 talk about it.

NOTE Confidence: 0.9699416

00:29:44.830 --> 00:29:46.510 So, I mean, I, this

NOTE Confidence: 0.9699416

00:29:46.510 --> 00:29:47.470 is where you're measuring your

NOTE Confidence: 0.9699416

00:29:47.470 --> 00:29:49.150 pressures inside the left ventricle.

NOTE Confidence: 0.9699416

00:29:49.150 --> 00:29:49.950 And so this is when

NOTE Confidence: 0.9699416

00:29:49.950 --> 00:29:50.910 they have the catheter in

NOTE Confidence: 0.9699416

00:29:50.910 --> 00:29:52.190 the LV. So you're measuring

NOTE Confidence: 0.9699416

00:29:52.190 --> 00:29:53.230 your pressures there and then

NOTE Confidence: 0.9699416

00:29:53.230 --> 00:29:54.750 you're the pigtail. And then

NOTE Confidence: 0.9699416

00:29:54.750 --> 00:29:55.790 you're, when you're pulling it

NOTE Confidence: 0.9699416

00:29:55.790 --> 00:29:56.590 out is where you're going

NOTE Confidence: 0.9699416

00:29:56.590 --> 00:29:57.985 to get the aortic pressures.

NOTE Confidence: 0.9699416

00:29:57.985 --> 00:29:59.345 And so you're trying to

NOTE Confidence: 0.9699416

00:29:59.345 --> 00:30:00.065 time this,

NOTE Confidence: 0.9711106

00:30:00.385 --> 00:30:01.664 close to each other, but

NOTE Confidence: 0.9711106

00:30:01.664 --> 00:30:02.784 that is where you're seeing

NOTE Confidence: 0.9711106

00:30:02.784 --> 00:30:04.885 this gradient that's here, notably.

NOTE Confidence: 0.8077157

00:30:08.145 --> 00:30:09.265 And then the reason as

NOTE Confidence: 0.8077157

00:30:09.265 --> 00:30:10.625 you know, so there there

NOTE Confidence: 0.8077157

00:30:10.625 --> 00:30:12.145 is apical ballooning, but your

NOTE Confidence: 0.8077157

00:30:12.145 --> 00:30:13.125 base is hyper

NOTE Confidence: 0.944462

00:30:13.559 --> 00:30:15.820 active. Right? So this hyperactive

NOTE Confidence: 0.83623606

00:30:16.120 --> 00:30:17.480 base is what's gonna create

NOTE Confidence: 0.83623606

00:30:17.880 --> 00:30:19.500 creates your LVOT gradient

NOTE Confidence: 0.7896458

00:30:19.960 --> 00:30:21.639 a lot sometimes with, with

NOTE Confidence: 0.7896458

00:30:21.639 --> 00:30:22.779 the mitral activity,

NOTE Confidence: 0.8829485

00:30:23.080 --> 00:30:24.700 mitral valve, just like HCM.

NOTE Confidence: 0.9094586

00:30:25.559 --> 00:30:26.919 And so what we're doing

NOTE Confidence: 0.9094586

00:30:26.919 --> 00:30:28.815 here is we're comparing distal

NOTE Confidence: 0.9094586

00:30:28.815 --> 00:30:29.875 pressures with,

NOTE Confidence: 0.80025834

00:30:30.895 --> 00:30:31.395 pressures

NOTE Confidence: 0.8812559

00:30:31.855 --> 00:30:33.054 and see, you shouldn't get

NOTE Confidence: 0.8812559

00:30:33.054 --> 00:30:34.335 a gradient unless you have

NOTE Confidence: 0.8812559

00:30:34.335 --> 00:30:36.335 aortic stenosis and other problems

NOTE Confidence: 0.8812559

00:30:36.335 --> 00:30:37.215 that we deal with all

NOTE Confidence: 0.8812559

00:30:37.215 --> 00:30:38.655 the time. But if it's

NOTE Confidence: 0.8812559

00:30:38.655 --> 00:30:40.515 something dynamic about this patient,

NOTE Confidence: 0.7837894

00:30:41.380 --> 00:30:42.500 there is a there's a

NOTE Confidence: 0.7837894

00:30:42.500 --> 00:30:44.500 dynamic structure here. And remember,

NOTE Confidence: 0.7837894

00:30:44.500 --> 00:30:45.300 she came to the left

NOTE Confidence: 0.7837894

00:30:45.300 --> 00:30:46.920 of the mutiny point five.

NOTE Confidence: 0.7837894

00:30:47.080 --> 00:30:48.240 And so

NOTE Confidence: 0.5863035

00:30:49.059 --> 00:30:49.559 and,

NOTE Confidence: 0.7998201

00:30:49.860 --> 00:30:51.220 shortly. But go back to

NOTE Confidence: 0.7998201

00:30:51.220 --> 00:30:52.750 the options you presented there.

NOTE Confidence: 0.7998201

00:30:52.750 --> 00:30:53.250 The

NOTE Confidence: 0.9131801

00:30:56.465 --> 00:30:57.765 just to comment again.

NOTE Confidence: 0.8133247

00:30:59.905 --> 00:31:01.924 Why is there a question?

NOTE Confidence: 0.8133247

00:31:01.985 --> 00:31:02.865 I think, you you know,

NOTE Confidence: 0.8133247

00:31:02.865 --> 00:31:04.705 what we so somebody's in

NOTE Confidence: 0.8133247

00:31:04.705 --> 00:31:05.825 shock because they have a

NOTE Confidence: 0.8133247

00:31:05.825 --> 00:31:07.430 stress in the terrible stress

NOTE Confidence: 0.8133247

00:31:07.430 --> 00:31:08.330 induced cardiomyopathy,

NOTE Confidence: 0.8930114

00:31:08.870 --> 00:31:11.430 you expect the inhibitory pressures

NOTE Confidence: 0.8930114

00:31:11.430 --> 00:31:12.870 to be low. Right? You

NOTE Confidence: 0.8930114

00:31:12.870 --> 00:31:14.470 would expect to be able

NOTE Confidence: 0.8930114

00:31:14.470 --> 00:31:15.990 to generate that level of

NOTE Confidence: 0.8930114

00:31:15.990 --> 00:31:16.490 LV

NOTE Confidence: 0.9719465

00:31:16.870 --> 00:31:18.490 systolic pressure. So

NOTE Confidence: 0.41065568

00:31:19.414 --> 00:31:20.075 shot unintended

NOTE Confidence: 0.7899803

00:31:20.534 --> 00:31:22.775 when I when I saw

NOTE Confidence: 0.7899803

00:31:22.775 --> 00:31:24.855 first up there, and I

NOTE Confidence: 0.7899803

00:31:24.855 --> 00:31:25.355 understand

NOTE Confidence: 0.94016767

00:31:26.455 --> 00:31:28.054 septum, this sort of bulging

NOTE Confidence: 0.94016767

00:31:28.054 --> 00:31:29.735 septum is contributing to this,

NOTE Confidence: 0.94016767

00:31:29.735 --> 00:31:31.815 but that's still pretty surprising

NOTE Confidence: 0.94016767

00:31:31.815 --> 00:31:32.934 to me even with that

NOTE Confidence: 0.94016767

00:31:32.934 --> 00:31:33.434 explanation.

NOTE Confidence: 0.7269906

00:31:36.720 --> 00:31:37.860 Yeah. I think the aspurity

NOTE Confidence: 0.7269906

00:31:38.000 --> 00:31:38.740 of that.

NOTE Confidence: 0.75800556

00:31:40.960 --> 00:31:42.640 Yeah. I I I agree

NOTE Confidence: 0.75800556

00:31:42.640 --> 00:31:43.220 with that.

NOTE Confidence: 0.7956427

00:31:44.320 --> 00:31:45.700 So some of these options,

NOTE Confidence: 0.7956427

00:31:45.760 --> 00:31:47.135 I, you know, I started

NOTE Confidence: 0.7956427

00:31:47.135 --> 00:31:48.414 the whole video at five

NOTE Confidence: 0.7956427

00:31:48.414 --> 00:31:48.914 AM.

NOTE Confidence: 0.7404807

00:31:49.294 --> 00:31:50.255 I I got all those

NOTE Confidence: 0.7404807

00:31:50.255 --> 00:31:52.515 up by different providers. So

NOTE Confidence: 0.7404807

00:31:52.615 --> 00:31:54.355 so I basically that's

NOTE Confidence: 0.9342104

00:31:54.655 --> 00:31:55.235 that's why,

NOTE Confidence: 0.622178

00:31:57.534 --> 00:31:58.034 for

NOTE Confidence: 0.9721453

00:31:58.730 --> 00:32:00.250 for this particular case, I

NOTE Confidence: 0.9721453

00:32:00.250 --> 00:32:01.630 think it's very important,

NOTE Confidence: 0.9750407

00:32:02.170 --> 00:32:03.210 at least the way I

NOTE Confidence: 0.9750407

00:32:03.210 --> 00:32:04.810 approach it is I stopped

NOTE Confidence: 0.9750407

00:32:04.810 --> 00:32:06.570 being an interventional cardiologist there,

NOTE Confidence: 0.9750407

00:32:06.570 --> 00:32:07.690 and then then I became

NOTE Confidence: 0.9750407

00:32:07.690 --> 00:32:08.890 a heart failure doctor. Right?

NOTE Confidence: 0.9750407

00:32:08.890 --> 00:32:10.090 So what how do you

NOTE Confidence: 0.9750407

00:32:10.090 --> 00:32:11.310 interpret those hemodynamics

NOTE Confidence: 0.7738988

00:32:11.690 --> 00:32:12.190 and

NOTE Confidence: 0.9628045

00:32:12.575 --> 00:32:13.535 what to do with those

NOTE Confidence: 0.9628045

00:32:13.535 --> 00:32:15.055 hemodynamics? Okay. I'm not sure

NOTE Confidence: 0.9628045

00:32:15.055 --> 00:32:16.275 we're gonna talk about it.

NOTE Confidence: 0.81888413

00:32:18.655 --> 00:32:19.635 Thank you, everyone.

NOTE Confidence: 0.9795392

00:32:22.895 --> 00:32:24.255 Okay. So at at this

NOTE Confidence: 0.9795392

00:32:24.255 --> 00:32:24.755 point,

NOTE Confidence: 0.97889364

00:32:25.295 --> 00:32:26.495 you know, like we've all

NOTE Confidence: 0.97889364

00:32:26.495 --> 00:32:28.769 discussed now together, we have

NOTE Confidence: 0.97889364

00:32:28.769 --> 00:32:30.529 our likely diagnosis, stress induced

NOTE Confidence: 0.97889364

00:32:30.529 --> 00:32:31.029 cardiomyopathy

NOTE Confidence: 0.92154187

00:32:31.490 --> 00:32:33.350 with LV outflow tract obstruction.

NOTE Confidence: 0.96708816

00:32:35.570 --> 00:32:36.450 You know, I wanted to

NOTE Confidence: 0.96708816

00:32:36.450 --> 00:32:38.070 do a quick review of

NOTE Confidence: 0.96708816

00:32:38.130 --> 00:32:39.649 kind of phenotypes of stress

NOTE Confidence: 0.96708816

00:32:39.649 --> 00:32:40.549 induced cardiomyopathy

NOTE Confidence: 0.9697432

00:32:41.009 --> 00:32:42.755 because I personally think this

NOTE Confidence: 0.9697432

00:32:42.755 --> 00:32:44.275 is an interesting phenotype that

NOTE Confidence: 0.9697432

00:32:44.275 --> 00:32:45.015 I've encountered

NOTE Confidence: 0.920427

00:32:45.554 --> 00:32:47.235 a couple times especially late

NOTE Confidence: 0.920427

00:32:47.235 --> 00:32:48.515 at night as a fellow

NOTE Confidence: 0.920427

00:32:48.515 --> 00:32:50.534 evaluating a cardiogenic shock consult,

NOTE Confidence: 0.920427

00:32:50.674 --> 00:32:51.174 SRC,

NOTE Confidence: 0.91876274

00:32:51.875 --> 00:32:52.695 York Street.

NOTE Confidence: 0.9670446

00:32:53.635 --> 00:32:55.290 Really quickly, you know, we

NOTE Confidence: 0.9670446

00:32:55.290 --> 00:32:56.250 remember that this is a

NOTE Confidence: 0.9670446

00:32:56.250 --> 00:32:57.470 condition that disproportionately

NOTE Confidence: 0.9515734

00:32:58.650 --> 00:32:59.470 affects postmenopausal

NOTE Confidence: 0.96129656

00:32:59.850 --> 00:33:01.450 women, carries a four to

NOTE Confidence: 0.96129656

00:33:01.450 --> 00:33:02.890 five percent risk of in

NOTE Confidence: 0.96129656

00:33:02.890 --> 00:33:04.910 hospital mortality related to cardiogenic

NOTE Confidence: 0.96129656

00:33:05.130 --> 00:33:06.590 shock and cardiac arrest.

NOTE Confidence: 0.972919

00:33:07.365 --> 00:33:09.045 You know, I looked and

NOTE Confidence: 0.972919

00:33:09.045 --> 00:33:09.925 tried to see how do

NOTE Confidence: 0.972919

00:33:09.925 --> 00:33:12.005 people define these, like, phenotypes

NOTE Confidence: 0.972919

00:33:12.005 --> 00:33:13.765 of stress induced cardiomyopathy and

NOTE Confidence: 0.972919

00:33:13.765 --> 00:33:14.805 saw a good amount of

NOTE Confidence: 0.972919

00:33:14.805 --> 00:33:16.645 work on these, like, four

NOTE Confidence: 0.972919

00:33:16.645 --> 00:33:18.345 major wall motion abnormalities,

NOTE Confidence: 0.93729573

00:33:19.600 --> 00:33:21.039 identified with the majority of

NOTE Confidence: 0.93729573

00:33:21.039 --> 00:33:22.399 patients having, in the upper

NOTE Confidence: 0.93729573

00:33:22.399 --> 00:33:23.679 right hand corner, the apical

NOTE Confidence: 0.93729573

00:33:23.679 --> 00:33:26.260 type, smaller proportions displaying midventricular

NOTE Confidence: 0.9714542

00:33:26.720 --> 00:33:28.399 type, basal type, and focal

NOTE Confidence: 0.9714542

00:33:28.399 --> 00:33:29.620 type of wall motion.

NOTE Confidence: 0.9486139

00:33:30.240 --> 00:33:31.460 But, you know, I

NOTE Confidence: 0.9939797

00:33:31.894 --> 00:33:33.335 I suggest that we have

NOTE Confidence: 0.9939797

00:33:33.335 --> 00:33:34.534 a real phenotype here of

NOTE Confidence: 0.9939797

00:33:34.534 --> 00:33:35.674 stress induced cardiomyopathy,

NOTE Confidence: 0.9851735

00:33:36.134 --> 00:33:37.975 something different structurally than just

NOTE Confidence: 0.9851735

00:33:37.975 --> 00:33:39.815 wall motion, and it's this

NOTE Confidence: 0.9851735

00:33:39.815 --> 00:33:41.414 presence of LV outflow tract

NOTE Confidence: 0.9851735

00:33:41.414 --> 00:33:41.914 obstruction.

NOTE Confidence: 0.96878815

00:33:43.174 --> 00:33:44.855 We, like we said just

NOTE Confidence: 0.96878815

00:33:44.855 --> 00:33:45.995 now, you know, we

NOTE Confidence: 0.95342624

00:33:46.710 --> 00:33:48.650 established this via our catheterization

NOTE Confidence: 0.95342624

00:33:48.950 --> 00:33:50.470 first and then confirmed it

NOTE Confidence: 0.95342624

00:33:50.470 --> 00:33:51.289 by our echocardiography.

NOTE Confidence: 0.9903108

00:33:53.190 --> 00:33:54.809 How prevalent is this phenotype?

NOTE Confidence: 0.9903108

00:33:55.030 --> 00:33:56.570 Topic is very understudied.

NOTE Confidence: 0.99546677

00:33:57.510 --> 00:33:58.789 It's really not been fully

NOTE Confidence: 0.99546677

00:33:58.789 --> 00:34:00.309 described by what I reviewed

NOTE Confidence: 0.99546677

00:34:00.309 --> 00:34:01.049 in the literature.

NOTE Confidence: 0.7802407

00:34:01.635 --> 00:34:03.095 In the Takasubo International,

NOTE Confidence: 0.9772965

00:34:03.875 --> 00:34:06.055 Network Registry, they described about

NOTE Confidence: 0.9772965

00:34:06.115 --> 00:34:08.114 seven percent of patients with

NOTE Confidence: 0.9772965

00:34:08.114 --> 00:34:09.875 stress induced cardiomyopathy can have

NOTE Confidence: 0.9772965

00:34:09.875 --> 00:34:11.415 an LV outflow tract obstruction

NOTE Confidence: 0.8923092

00:34:12.035 --> 00:34:13.635 and ten percent in this,

NOTE Confidence: 0.94850767

00:34:14.114 --> 00:34:15.815 Spanish registry on Takasubo.

NOTE Confidence: 0.9268169

00:34:16.680 --> 00:34:17.900 But you know, I think,

NOTE Confidence: 0.9268169

00:34:18.119 --> 00:34:19.000 you know, in talking to

NOTE Confidence: 0.9268169

00:34:19.000 --> 00:34:20.280 doctor Davila, we thought it

NOTE Confidence: 0.9268169

00:34:20.280 --> 00:34:22.200 was probably even higher and

NOTE Confidence: 0.9268169

00:34:22.200 --> 00:34:23.020 really requires

NOTE Confidence: 0.99807096

00:34:23.480 --> 00:34:24.460 larger study.

NOTE Confidence: 0.9897383

00:34:25.800 --> 00:34:27.719 The proposed mechanism has been

NOTE Confidence: 0.9897383

00:34:27.719 --> 00:34:29.319 discussed by some authors and

NOTE Confidence: 0.9897383

00:34:29.319 --> 00:34:30.680 kind of borrows from similar

NOTE Confidence: 0.9897383

00:34:30.680 --> 00:34:31.995 discussion in the field of

NOTE Confidence: 0.90417516

00:34:32.555 --> 00:34:34.395 HOCAM, where some authors propose

NOTE Confidence: 0.90417516

00:34:34.395 --> 00:34:36.315 like a Venturi effect wherein

NOTE Confidence: 0.90417516

00:34:36.315 --> 00:34:37.595 pressure is lower after the

NOTE Confidence: 0.90417516

00:34:37.595 --> 00:34:39.515 obstruction leading to some kind

NOTE Confidence: 0.90417516

00:34:39.515 --> 00:34:40.175 of vacuum.

NOTE Confidence: 0.87796956

00:34:40.635 --> 00:34:42.555 Other authors propose like drag

NOTE Confidence: 0.87796956

00:34:42.555 --> 00:34:43.055 effect.

NOTE Confidence: 0.91604644

00:34:43.995 --> 00:34:45.260 In the distinct case of

NOTE Confidence: 0.91604644

00:34:45.260 --> 00:34:46.400 Takotsubo cardiomyopathy,

NOTE Confidence: 0.9495698

00:34:46.859 --> 00:34:48.400 something to think about is

NOTE Confidence: 0.9495698

00:34:48.540 --> 00:34:50.060 you have this LV outflow

NOTE Confidence: 0.9495698

00:34:50.060 --> 00:34:52.160 tract obstruction increasing your afterload

NOTE Confidence: 0.9503821

00:34:52.540 --> 00:34:53.920 and this actually is exacerbating

NOTE Confidence: 0.92125034

00:34:54.219 --> 00:34:55.820 your apical and mid myo,

NOTE Confidence: 0.92125034

00:34:56.060 --> 00:34:56.560 midventricular

NOTE Confidence: 0.9393276

00:34:56.940 --> 00:34:58.080 myocardial dysfunction,

NOTE Confidence: 0.9815761

00:34:58.645 --> 00:35:00.265 worsening the wall motion abnormalities

NOTE Confidence: 0.9815761

00:35:00.325 --> 00:35:02.105 and kind of working together,

NOTE Confidence: 0.9967572

00:35:03.364 --> 00:35:04.505 to cause this problem.

NOTE Confidence: 0.9807146

00:35:05.205 --> 00:35:06.805 Some authors have found that

NOTE Confidence: 0.9807146

00:35:06.805 --> 00:35:07.785 a small LV

NOTE Confidence: 0.9598887

00:35:08.085 --> 00:35:09.465 and presence of a hypertrophied

NOTE Confidence: 0.9598887

00:35:09.685 --> 00:35:10.185 interventricular

NOTE Confidence: 0.89418644

00:35:10.565 --> 00:35:12.300 septum is is associated with

NOTE Confidence: 0.89418644

00:35:12.300 --> 00:35:13.660 the development of LV alco

NOTE Confidence: 0.89418644

00:35:13.660 --> 00:35:15.520 tract obstruction and stress cardiomyopathy

NOTE Confidence: 0.89418644

00:35:15.660 --> 00:35:16.640 and if you'll remember,

NOTE Confidence: 0.9703678

00:35:16.940 --> 00:35:18.140 our patient does have a

NOTE Confidence: 0.9703678

00:35:18.140 --> 00:35:20.219 sigmoid septum, which we kind

NOTE Confidence: 0.9703678

00:35:20.219 --> 00:35:21.340 of look at further in

NOTE Confidence: 0.9703678

00:35:21.340 --> 00:35:23.360 the outpatient echo later on.

NOTE Confidence: 0.9662098

00:35:24.955 --> 00:35:26.635 Insights from that registry I

NOTE Confidence: 0.9662098

00:35:26.635 --> 00:35:28.575 talked about on Takasubo Syndrome

NOTE Confidence: 0.9662098

00:35:28.715 --> 00:35:30.315 gave some preliminary ideas on

NOTE Confidence: 0.9662098

00:35:30.315 --> 00:35:31.855 prognosis of this phenotype.

NOTE Confidence: 0.94896615

00:35:33.035 --> 00:35:34.555 Presence of LVL flow tract

NOTE Confidence: 0.94896615

00:35:34.555 --> 00:35:36.555 obstruction was associated with more

NOTE Confidence: 0.94896615

00:35:36.555 --> 00:35:38.575 acute kidney injury, more ventricular

NOTE Confidence: 0.94896615

00:35:38.715 --> 00:35:39.215 arrhythmias.

NOTE Confidence: 0.94819593

00:35:40.180 --> 00:35:41.719 There really wasn't an association

NOTE Confidence: 0.94819593

00:35:41.780 --> 00:35:43.460 with in hospital mortality, but

NOTE Confidence: 0.94819593

00:35:43.460 --> 00:35:44.980 of course the study was

NOTE Confidence: 0.94819593

00:35:44.980 --> 00:35:46.840 modest in number of patients.

NOTE Confidence: 0.9572747

00:35:48.180 --> 00:35:49.380 And we really don't know

NOTE Confidence: 0.9572747

00:35:49.380 --> 00:35:50.260 right now how does this

NOTE Confidence: 0.9572747

00:35:50.260 --> 00:35:51.160 affect mortality.

NOTE Confidence: 0.9674894

00:35:52.565 --> 00:35:54.085 Anecdotally and to connect back

NOTE Confidence: 0.9674894

00:35:54.085 --> 00:35:55.705 to some of the shock

NOTE Confidence: 0.99693596

00:35:56.165 --> 00:35:57.545 items that we talked about,

NOTE Confidence: 0.98853034

00:35:58.165 --> 00:35:59.845 it definitely caused some level

NOTE Confidence: 0.98853034

00:35:59.845 --> 00:36:01.925 of diagnostic uncertainty during that

NOTE Confidence: 0.98853034

00:36:01.925 --> 00:36:03.285 first twenty four hours, the

NOTE Confidence: 0.98853034

00:36:03.285 --> 00:36:04.725 golden day of shock. So

NOTE Confidence: 0.98853034

00:36:04.725 --> 00:36:06.185 I think that's an interesting

NOTE Confidence: 0.98853034

00:36:06.245 --> 00:36:07.545 thing to examine.

NOTE Confidence: 0.9663658

00:36:09.080 --> 00:36:10.680 And comparing and contrasting our

NOTE Confidence: 0.9663658

00:36:10.680 --> 00:36:12.840 standard cardiogenic shock management to

NOTE Confidence: 0.9663658

00:36:12.840 --> 00:36:13.900 the special phenotype,

NOTE Confidence: 0.9855745

00:36:14.440 --> 00:36:15.820 we know that in standard

NOTE Confidence: 0.9855745

00:36:15.880 --> 00:36:17.160 CS, you know, we want

NOTE Confidence: 0.9855745

00:36:17.160 --> 00:36:18.780 to enhance contractility

NOTE Confidence: 0.95141864

00:36:19.160 --> 00:36:20.620 using inotropes, inopressors.

NOTE Confidence: 0.9954509

00:36:21.400 --> 00:36:22.780 We optimize our preload

NOTE Confidence: 0.9922075

00:36:23.364 --> 00:36:24.825 removing fluid with diuresis,

NOTE Confidence: 0.9965391

00:36:25.445 --> 00:36:26.985 and we optimize our afterload

NOTE Confidence: 0.9965391

00:36:27.045 --> 00:36:29.125 using medications and mechanical support

NOTE Confidence: 0.9965391

00:36:29.125 --> 00:36:29.625 devices.

NOTE Confidence: 0.98508066

00:36:30.725 --> 00:36:31.844 In the setting of LV

NOTE Confidence: 0.98508066

00:36:31.844 --> 00:36:32.905 outflow tract obstruction,

NOTE Confidence: 0.9637018

00:36:33.364 --> 00:36:34.165 we have to do the

NOTE Confidence: 0.9637018

00:36:34.165 --> 00:36:35.205 opposite, and we learn a

NOTE Confidence: 0.9637018

00:36:35.205 --> 00:36:36.245 lot of this from our

NOTE Confidence: 0.9637018

00:36:36.245 --> 00:36:37.790 patients with, HOCAM.

NOTE Confidence: 0.9981221

00:36:38.250 --> 00:36:39.550 We try to reduce contractility,

NOTE Confidence: 0.99682915

00:36:39.850 --> 00:36:40.750 avoid inotropes,

NOTE Confidence: 0.9614523

00:36:41.050 --> 00:36:42.810 give IV beta blockers in

NOTE Confidence: 0.9614523

00:36:42.810 --> 00:36:43.550 some cases,

NOTE Confidence: 0.9669178

00:36:44.010 --> 00:36:45.870 optimize preload by giving fluids,

NOTE Confidence: 0.9669178

00:36:46.090 --> 00:36:47.210 and do our best not

NOTE Confidence: 0.9669178

00:36:47.210 --> 00:36:49.230 to decrease afterload via medications.

NOTE Confidence: 0.9186961

00:36:50.114 --> 00:36:51.475 But really the question now

NOTE Confidence: 0.9186961

00:36:51.475 --> 00:36:52.675 comes to take to the

NOTE Confidence: 0.9186961

00:36:52.675 --> 00:36:53.795 next level is what do

NOTE Confidence: 0.9186961

00:36:53.795 --> 00:36:55.415 we do with mechanical circulatory

NOTE Confidence: 0.9186961

00:36:55.555 --> 00:36:56.835 support in these case, in

NOTE Confidence: 0.9186961

00:36:56.835 --> 00:36:57.975 this special case?

NOTE Confidence: 0.9604244

00:36:58.675 --> 00:36:59.795 With that question in mind,

NOTE Confidence: 0.9604244

00:36:59.795 --> 00:37:00.594 we can look at this

NOTE Confidence: 0.9604244

00:37:00.594 --> 00:37:02.114 study from our own colleagues

NOTE Confidence: 0.9604244

00:37:02.114 --> 00:37:02.614 again,

NOTE Confidence: 0.97826165

00:37:03.530 --> 00:37:04.750 which examined mechanical

NOTE Confidence: 0.9332599

00:37:05.050 --> 00:37:06.969 circulatory support usage and stress

NOTE Confidence: 0.9332599

00:37:06.969 --> 00:37:07.469 cardiomyopathy

NOTE Confidence: 0.95911217

00:37:08.090 --> 00:37:09.530 using a national database of

NOTE Confidence: 0.95911217

00:37:09.530 --> 00:37:10.989 nine zero two patients.

NOTE Confidence: 0.99353325

00:37:12.250 --> 00:37:13.450 This study found that use

NOTE Confidence: 0.99353325

00:37:13.450 --> 00:37:15.390 of mechanical circulatory support

NOTE Confidence: 0.99905735

00:37:15.695 --> 00:37:17.935 in this situation requires careful

NOTE Confidence: 0.99905735

00:37:17.935 --> 00:37:18.435 consideration

NOTE Confidence: 0.8525934

00:37:18.895 --> 00:37:21.155 especially with regard to device

NOTE Confidence: 0.8525934

00:37:21.215 --> 00:37:21.715 choice

NOTE Confidence: 0.9632013

00:37:22.175 --> 00:37:23.135 and whether or not to

NOTE Confidence: 0.9632013

00:37:23.135 --> 00:37:24.735 use MCS at all. Patients

NOTE Confidence: 0.9632013

00:37:24.735 --> 00:37:25.935 who received an Impella, for

NOTE Confidence: 0.9632013

00:37:25.935 --> 00:37:26.975 example, had a higher in

NOTE Confidence: 0.9632013

00:37:26.975 --> 00:37:29.610 hospital mortality renal replacement therapy

NOTE Confidence: 0.9632013

00:37:29.850 --> 00:37:31.610 and vascular complications than those

NOTE Confidence: 0.9632013

00:37:31.610 --> 00:37:32.110 who,

NOTE Confidence: 0.9576927

00:37:32.890 --> 00:37:34.270 received a balloon pump.

NOTE Confidence: 0.9884906

00:37:34.730 --> 00:37:35.770 And to delve a little

NOTE Confidence: 0.9884906

00:37:35.770 --> 00:37:37.210 bit more deeply into this

NOTE Confidence: 0.9884906

00:37:37.210 --> 00:37:39.130 topic of MCS and stress

NOTE Confidence: 0.9884906

00:37:39.130 --> 00:37:39.630 cardiomyopathy

NOTE Confidence: 0.89273816

00:37:39.930 --> 00:37:41.625 and specifically in patients with

NOTE Confidence: 0.89273816

00:37:41.625 --> 00:37:42.985 also an LV equal tract

NOTE Confidence: 0.89273816

00:37:42.985 --> 00:37:44.985 obstruction. I invite doctor Davila

NOTE Confidence: 0.89273816

00:37:44.985 --> 00:37:46.425 again to speak about this

NOTE Confidence: 0.89273816

00:37:46.425 --> 00:37:47.325 special phenotype

NOTE Confidence: 0.88420683

00:37:48.025 --> 00:37:49.065 and some of his thoughts

NOTE Confidence: 0.88420683

00:37:49.065 --> 00:37:49.965 around MCS.

NOTE Confidence: 0.9591785

00:37:50.745 --> 00:37:52.025 Yeah. So so this case

NOTE Confidence: 0.9591785

00:37:52.025 --> 00:37:53.705 prompted this analysis. Right? I

NOTE Confidence: 0.9591785

00:37:53.705 --> 00:37:55.005 finished the case, and

NOTE Confidence: 0.9850099

00:37:55.305 --> 00:37:56.045 we said,

NOTE Confidence: 0.9969156

00:37:56.989 --> 00:37:58.109 do we know how many

NOTE Confidence: 0.9969156

00:37:58.109 --> 00:37:59.010 of these patients

NOTE Confidence: 0.95875823

00:37:59.310 --> 00:38:01.550 have an LVOT obstruction and

NOTE Confidence: 0.95875823

00:38:01.550 --> 00:38:03.329 what's happening with them? So

NOTE Confidence: 0.95875823

00:38:03.390 --> 00:38:04.510 alongside with some of the

NOTE Confidence: 0.95875823

00:38:04.510 --> 00:38:05.790 fellows, we just asked the

NOTE Confidence: 0.95875823

00:38:05.790 --> 00:38:08.109 question, how many patients with

NOTE Confidence: 0.95875823

00:38:08.109 --> 00:38:08.609 diagnosed

NOTE Confidence: 0.83712816

00:38:09.035 --> 00:38:09.935 stress induced cardiomyopathy

NOTE Confidence: 0.9440549

00:38:10.555 --> 00:38:12.075 are getting devices and what

NOTE Confidence: 0.9440549

00:38:12.075 --> 00:38:12.895 type of device?

NOTE Confidence: 0.9769552

00:38:13.195 --> 00:38:14.495 So a lot of limitations.

NOTE Confidence: 0.9769552

00:38:14.555 --> 00:38:16.235 It's retrospective. It's based on

NOTE Confidence: 0.9769552

00:38:16.235 --> 00:38:16.735 administrative

NOTE Confidence: 0.98748845

00:38:17.114 --> 00:38:18.555 database. But as you saw,

NOTE Confidence: 0.98748845

00:38:18.555 --> 00:38:19.915 there is a significant group

NOTE Confidence: 0.98748845

00:38:19.915 --> 00:38:21.275 of patients that get balloon

NOTE Confidence: 0.98748845

00:38:21.275 --> 00:38:21.775 pumps.

NOTE Confidence: 0.95674926

00:38:22.075 --> 00:38:23.830 And even with this thought

NOTE Confidence: 0.95674926

00:38:23.830 --> 00:38:25.589 process of reducing afterload, it

NOTE Confidence: 0.95674926

00:38:25.589 --> 00:38:26.570 will be detrimental.

NOTE Confidence: 0.8867664

00:38:27.270 --> 00:38:28.710 And also patients who are

NOTE Confidence: 0.8867664

00:38:28.710 --> 00:38:29.210 collapsing,

NOTE Confidence: 0.79622525

00:38:29.589 --> 00:38:31.589 probably Sky Stage E, getting

NOTE Confidence: 0.79622525

00:38:31.589 --> 00:38:32.089 ECMO,

NOTE Confidence: 0.9633088

00:38:32.469 --> 00:38:34.969 and overall mortality relatively high

NOTE Confidence: 0.9911739

00:38:35.270 --> 00:38:37.369 for a relatively low prevalent

NOTE Confidence: 0.9875685

00:38:37.965 --> 00:38:38.465 condition.

NOTE Confidence: 0.9585904

00:38:38.765 --> 00:38:40.205 So the reviewers came back

NOTE Confidence: 0.9585904

00:38:40.205 --> 00:38:41.645 to us and asked, Okay,

NOTE Confidence: 0.9585904

00:38:41.645 --> 00:38:42.605 so why don't you try

NOTE Confidence: 0.9585904

00:38:42.605 --> 00:38:44.285 to provide an algorithm, a

NOTE Confidence: 0.9585904

00:38:44.285 --> 00:38:46.285 suggestive algorithm on how to

NOTE Confidence: 0.9585904

00:38:46.285 --> 00:38:47.425 deal with these patients?

NOTE Confidence: 0.98795015

00:38:48.925 --> 00:38:50.205 And this is all based

NOTE Confidence: 0.98795015

00:38:50.205 --> 00:38:51.405 on no data at all.

NOTE Confidence: 0.98795015

00:38:51.405 --> 00:38:51.905 Right?

NOTE Confidence: 0.99359995

00:38:52.430 --> 00:38:53.870 So this is all made

NOTE Confidence: 0.99359995

00:38:53.870 --> 00:38:55.550 up. But what we try

NOTE Confidence: 0.99359995

00:38:55.550 --> 00:38:56.930 to do is try to

NOTE Confidence: 0.99852335

00:38:57.470 --> 00:38:59.150 extrapolate some of the numbers

NOTE Confidence: 0.99852335

00:38:59.150 --> 00:39:00.690 that we use for hypertrophic

NOTE Confidence: 0.99852335

00:39:00.830 --> 00:39:01.330 cardiomyopathy,

NOTE Confidence: 0.9684424

00:39:01.710 --> 00:39:03.090 for example. So a significant

NOTE Confidence: 0.9684424

00:39:03.230 --> 00:39:04.430 LV to a gradient of

NOTE Confidence: 0.9684424

00:39:04.430 --> 00:39:05.835 more than thirty, that's what

NOTE Confidence: 0.9684424

00:39:05.835 --> 00:39:07.775 it's considered significant for hypertrophic

NOTE Confidence: 0.9684424

00:39:07.835 --> 00:39:08.335 cardiomyopathy

NOTE Confidence: 0.95119554

00:39:09.114 --> 00:39:10.655 at rest or after exercise.

NOTE Confidence: 0.94550127

00:39:10.955 --> 00:39:11.835 I think what we need

NOTE Confidence: 0.94550127

00:39:11.835 --> 00:39:13.355 to establish first is the

NOTE Confidence: 0.94550127

00:39:13.355 --> 00:39:14.875 def is you gotta establish

NOTE Confidence: 0.94550127

00:39:14.875 --> 00:39:15.675 the patients who are in

NOTE Confidence: 0.94550127

00:39:15.675 --> 00:39:17.195 cardiogenic shock. Right? And you've

NOTE Confidence: 0.94550127

00:39:17.195 --> 00:39:18.415 covered all the definition.

NOTE Confidence: 0.9608772

00:39:18.989 --> 00:39:20.989 And then further stratify them

NOTE Confidence: 0.9608772

00:39:20.989 --> 00:39:22.590 using the sky stages. I

NOTE Confidence: 0.9608772

00:39:22.590 --> 00:39:23.469 think we can we can

NOTE Confidence: 0.9608772

00:39:23.469 --> 00:39:24.670 all agree that that's very

NOTE Confidence: 0.9608772

00:39:24.670 --> 00:39:25.170 important

NOTE Confidence: 0.94807494

00:39:25.469 --> 00:39:26.850 because that will help you

NOTE Confidence: 0.93676156

00:39:27.550 --> 00:39:29.390 consider how sick these patients

NOTE Confidence: 0.93676156

00:39:29.390 --> 00:39:30.210 are, where

NOTE Confidence: 0.9708027

00:39:30.590 --> 00:39:31.469 do they need to go,

NOTE Confidence: 0.9708027

00:39:31.469 --> 00:39:32.590 and who do you need

NOTE Confidence: 0.9708027

00:39:32.590 --> 00:39:33.310 to wake up in the

NOTE Confidence: 0.9708027

00:39:33.310 --> 00:39:34.485 middle of the night. Right?

NOTE Confidence: 0.9708027

00:39:34.805 --> 00:39:36.325 And then once you further

NOTE Confidence: 0.9708027

00:39:36.325 --> 00:39:37.925 risk stratify them, are are

NOTE Confidence: 0.9708027

00:39:37.925 --> 00:39:39.225 you dealing with an LVOT

NOTE Confidence: 0.9708027

00:39:39.285 --> 00:39:40.645 obstruction? Yes or no? And

NOTE Confidence: 0.9708027

00:39:40.645 --> 00:39:41.605 if you're dealing with an

NOTE Confidence: 0.9708027

00:39:41.605 --> 00:39:43.285 LVOT obstruction, how do you

NOTE Confidence: 0.9708027

00:39:43.285 --> 00:39:44.405 deal with that? So as

NOTE Confidence: 0.9708027

00:39:44.405 --> 00:39:45.685 I said, that patient came

NOTE Confidence: 0.9708027

00:39:45.685 --> 00:39:47.285 on dobutamine two point five

NOTE Confidence: 0.9708027

00:39:47.285 --> 00:39:48.565 and had received a lot

NOTE Confidence: 0.9708027

00:39:48.565 --> 00:39:49.225 of diuretics.

NOTE Confidence: 0.9987111

00:39:50.010 --> 00:39:51.310 After getting those hemodynamics,

NOTE Confidence: 0.9008479

00:39:52.330 --> 00:39:54.030 we said stop the dobutamine,

NOTE Confidence: 0.94630754

00:39:54.410 --> 00:39:56.330 flood it with fluids, and

NOTE Confidence: 0.94630754

00:39:56.330 --> 00:39:58.010 and that's a that's a

NOTE Confidence: 0.94630754

00:39:58.010 --> 00:40:00.330 bold decision. Right? I didn't

NOTE Confidence: 0.94630754

00:40:00.330 --> 00:40:01.210 have the guts to put

NOTE Confidence: 0.94630754

00:40:01.210 --> 00:40:02.410 her on beta blockers, but

NOTE Confidence: 0.94630754

00:40:02.410 --> 00:40:03.435 we thought about it. Like,

NOTE Confidence: 0.94630754

00:40:03.435 --> 00:40:04.155 should we put her in

NOTE Confidence: 0.94630754

00:40:04.155 --> 00:40:05.195 s model and see if

NOTE Confidence: 0.94630754

00:40:05.195 --> 00:40:06.235 she gets better or not?

NOTE Confidence: 0.94630754

00:40:06.235 --> 00:40:06.735 But,

NOTE Confidence: 0.9733565

00:40:07.035 --> 00:40:08.735 I think, you know, understanding

NOTE Confidence: 0.9733565

00:40:08.875 --> 00:40:10.415 that and trying to restrutify

NOTE Confidence: 0.9733565

00:40:10.555 --> 00:40:12.175 these patients are very important.

NOTE Confidence: 0.96223253

00:40:12.955 --> 00:40:14.075 The the intent of this

NOTE Confidence: 0.96223253

00:40:14.075 --> 00:40:15.515 algorithm was not to say

NOTE Confidence: 0.96223253

00:40:15.515 --> 00:40:16.635 who should get a device

NOTE Confidence: 0.96223253

00:40:16.635 --> 00:40:17.755 and what type of device.

NOTE Confidence: 0.96223253

00:40:17.755 --> 00:40:18.510 I think it's

NOTE Confidence: 0.9876352

00:40:18.910 --> 00:40:20.830 identify shock, identify if there

NOTE Confidence: 0.9876352

00:40:20.830 --> 00:40:21.950 is a gradient or not,

NOTE Confidence: 0.9876352

00:40:21.950 --> 00:40:22.690 whether that's

NOTE Confidence: 0.8878956

00:40:23.150 --> 00:40:24.590 with with echo or cath

NOTE Confidence: 0.8878956

00:40:24.590 --> 00:40:26.850 invasive gradients, and then restratify

NOTE Confidence: 0.8878956

00:40:27.150 --> 00:40:29.010 them using your sky stages.

NOTE Confidence: 0.8878956

00:40:29.230 --> 00:40:30.690 In someone who is tremis,

NOTE Confidence: 0.903876

00:40:31.070 --> 00:40:32.350 mine need early ECMO. I

NOTE Confidence: 0.903876

00:40:32.350 --> 00:40:33.555 think that we should agree

NOTE Confidence: 0.903876

00:40:33.555 --> 00:40:34.214 with that.

NOTE Confidence: 0.97803634

00:40:34.594 --> 00:40:36.275 And someone who doesn't have

NOTE Confidence: 0.97803634

00:40:36.275 --> 00:40:37.795 an LVOT gradient or even

NOTE Confidence: 0.97803634

00:40:37.795 --> 00:40:39.474 with an LVOT gradient, you

NOTE Confidence: 0.97803634

00:40:39.474 --> 00:40:40.515 have to understand this is

NOTE Confidence: 0.97803634

00:40:40.515 --> 00:40:42.194 a relatively contraindication for a

NOTE Confidence: 0.97803634

00:40:42.194 --> 00:40:43.395 balloon pump. I think that's

NOTE Confidence: 0.97803634

00:40:43.395 --> 00:40:44.694 that's what we can conclude.

NOTE Confidence: 0.97803634

00:40:44.755 --> 00:40:45.555 I don't think we should

NOTE Confidence: 0.97803634

00:40:45.555 --> 00:40:46.835 say who gets an impeller,

NOTE Confidence: 0.97803634

00:40:46.835 --> 00:40:48.469 who doesn't. And for that,

NOTE Confidence: 0.97803634

00:40:48.610 --> 00:40:49.730 I asked Diva to add

NOTE Confidence: 0.97803634

00:40:49.730 --> 00:40:50.869 this. So this is when

NOTE Confidence: 0.91572225

00:40:51.330 --> 00:40:52.550 Tarek and I were fellows.

NOTE Confidence: 0.8235497

00:40:52.850 --> 00:40:54.290 We were doing some PV

NOTE Confidence: 0.8235497

00:40:54.290 --> 00:40:54.790 loops.

NOTE Confidence: 0.9478831

00:40:55.810 --> 00:40:56.930 And this is what happens

NOTE Confidence: 0.9478831

00:40:56.930 --> 00:40:58.050 when you go on and

NOTE Confidence: 0.9478831

00:40:58.050 --> 00:40:59.170 off with the balloon pump.

NOTE Confidence: 0.9478831

00:40:59.170 --> 00:41:00.675 Right? So you can see,

NOTE Confidence: 0.95738703

00:41:00.995 --> 00:41:02.195 this is LV pressure and

NOTE Confidence: 0.95738703

00:41:02.195 --> 00:41:03.075 volume, and you can see

NOTE Confidence: 0.95738703

00:41:03.075 --> 00:41:04.995 a significant reduction in afterload

NOTE Confidence: 0.95738703

00:41:04.995 --> 00:41:06.035 once you go on on

NOTE Confidence: 0.95738703

00:41:06.035 --> 00:41:07.555 a balloon pump. And in

NOTE Confidence: 0.95738703

00:41:07.555 --> 00:41:08.855 someone who has a significant

NOTE Confidence: 0.95738703

00:41:08.915 --> 00:41:10.195 LV at the obstruction, that

NOTE Confidence: 0.95738703

00:41:10.275 --> 00:41:12.355 that's clearly detrimental. Right? So

NOTE Confidence: 0.95738703

00:41:12.355 --> 00:41:12.935 I think,

NOTE Confidence: 0.9384134

00:41:14.710 --> 00:41:15.830 I know you guys know

NOTE Confidence: 0.9384134

00:41:15.830 --> 00:41:17.030 that, but, I I think

NOTE Confidence: 0.9384134

00:41:17.030 --> 00:41:18.070 that's the ditching point of

NOTE Confidence: 0.9384134

00:41:18.070 --> 00:41:18.570 this.

NOTE Confidence: 0.9642827

00:41:19.989 --> 00:41:21.130 Thank you so much.

NOTE Confidence: 0.9906382

00:41:21.670 --> 00:41:23.270 Okay. So returning back to

NOTE Confidence: 0.9906382

00:41:23.270 --> 00:41:24.010 our case,

NOTE Confidence: 0.89768344

00:41:26.355 --> 00:41:27.955 let's, you know, doctor Dubila

NOTE Confidence: 0.89768344

00:41:27.955 --> 00:41:29.235 kinda hinted at what happened

NOTE Confidence: 0.89768344

00:41:29.235 --> 00:41:29.875 next, but,

NOTE Confidence: 0.9957279

00:41:30.915 --> 00:41:32.295 at this point, you know,

NOTE Confidence: 0.9957279

00:41:32.355 --> 00:41:33.735 during the left heart catheterization

NOTE Confidence: 0.9681913

00:41:34.355 --> 00:41:35.795 and the early recognition of

NOTE Confidence: 0.9681913

00:41:35.795 --> 00:41:37.735 Takotsubo or stress induced cardiomyopathy

NOTE Confidence: 0.89656085

00:41:38.275 --> 00:41:39.895 with a gradient on aortic

NOTE Confidence: 0.89656085

00:41:39.955 --> 00:41:40.455 pullback,

NOTE Confidence: 0.970572

00:41:41.060 --> 00:41:43.300 no mechanical circulatory support was

NOTE Confidence: 0.970572

00:41:43.300 --> 00:41:43.800 placed.

NOTE Confidence: 0.9168619

00:41:44.180 --> 00:41:46.760 Dobutamine stopped, IV fluids given,

NOTE Confidence: 0.9911105

00:41:47.060 --> 00:41:48.580 and patient was returned to

NOTE Confidence: 0.9911105

00:41:48.580 --> 00:41:50.600 CCU where that echo occurred.

NOTE Confidence: 0.91853213

00:41:51.219 --> 00:41:52.739 Patient was actually normal tensive

NOTE Confidence: 0.91853213

00:41:52.739 --> 00:41:54.255 though there was some discussion

NOTE Confidence: 0.91853213

00:41:54.255 --> 00:41:55.694 in the notes about starting

NOTE Confidence: 0.91853213

00:41:55.694 --> 00:41:56.194 phenylephrine

NOTE Confidence: 0.7842234

00:41:56.575 --> 00:41:58.415 and as doctor Dibila mentioned,

NOTE Confidence: 0.7842234

00:41:58.415 --> 00:42:00.275 considering Esmeral as needed.

NOTE Confidence: 0.93403107

00:42:01.135 --> 00:42:03.075 Continue some intermittent fluid boluses

NOTE Confidence: 0.93403107

00:42:03.214 --> 00:42:03.875 that day.

NOTE Confidence: 0.9835761

00:42:05.310 --> 00:42:07.390 And, you know, by the

NOTE Confidence: 0.9835761

00:42:07.550 --> 00:42:08.590 later in that day, two

NOTE Confidence: 0.9835761

00:42:08.590 --> 00:42:10.350 PM, patient was thoroughly headed

NOTE Confidence: 0.9835761

00:42:10.350 --> 00:42:11.410 in the right direction.

NOTE Confidence: 0.8439523

00:42:11.870 --> 00:42:13.790 Blood pressure was normalizing one

NOTE Confidence: 0.8439523

00:42:13.790 --> 00:42:15.150 twenty seven over eighty four,

NOTE Confidence: 0.8439523

00:42:15.150 --> 00:42:16.190 heart rate coming down to

NOTE Confidence: 0.8439523

00:42:16.190 --> 00:42:17.090 the late eighties.

NOTE Confidence: 0.9924037

00:42:17.605 --> 00:42:18.805 And in our labs, we

NOTE Confidence: 0.9924037

00:42:18.805 --> 00:42:19.844 can see a leveling off

NOTE Confidence: 0.9924037

00:42:19.844 --> 00:42:20.745 of our creatinine

NOTE Confidence: 0.9445135

00:42:21.045 --> 00:42:22.185 and a nice,

NOTE Confidence: 0.9483296

00:42:22.565 --> 00:42:23.925 leveling off of the AST

NOTE Confidence: 0.9483296

00:42:23.925 --> 00:42:24.425 ALT,

NOTE Confidence: 0.95900434

00:42:25.045 --> 00:42:26.425 and very importantly,

NOTE Confidence: 0.9864515

00:42:26.725 --> 00:42:28.245 lactate going from two point

NOTE Confidence: 0.9864515

00:42:28.245 --> 00:42:29.785 five to one point two

NOTE Confidence: 0.93884134

00:42:30.430 --> 00:42:31.550 over the course of that

NOTE Confidence: 0.93884134

00:42:31.550 --> 00:42:32.910 twelve hours. Our first set

NOTE Confidence: 0.93884134

00:42:32.910 --> 00:42:34.030 of labs was around one

NOTE Confidence: 0.93884134

00:42:34.030 --> 00:42:34.530 to

NOTE Confidence: 0.6008794

00:42:34.830 --> 00:42:35.330 AM.

NOTE Confidence: 0.9961502

00:42:36.750 --> 00:42:37.730 On day two,

NOTE Confidence: 0.9592743

00:42:38.270 --> 00:42:39.950 she was improving and warm

NOTE Confidence: 0.9592743

00:42:39.950 --> 00:42:41.489 and well profuse on exam.

NOTE Confidence: 0.9766409

00:42:41.870 --> 00:42:43.150 She recalled that on the

NOTE Confidence: 0.9766409

00:42:43.150 --> 00:42:44.510 day of presentation, she forgot

NOTE Confidence: 0.9766409

00:42:44.510 --> 00:42:45.570 to take her Venlafaxine,

NOTE Confidence: 0.9815568

00:42:45.870 --> 00:42:46.665 if you remember from the

NOTE Confidence: 0.9815568

00:42:46.665 --> 00:42:48.505 history, and was suffering from

NOTE Confidence: 0.9815568

00:42:48.505 --> 00:42:50.765 severe generalized anxiety during work,

NOTE Confidence: 0.9815568

00:42:50.825 --> 00:42:51.785 which could hint at a

NOTE Confidence: 0.9815568

00:42:51.785 --> 00:42:53.245 trigger for her stress cardiomyopathy.

NOTE Confidence: 0.95135665

00:42:54.344 --> 00:42:55.945 And on day two, there

NOTE Confidence: 0.95135665

00:42:55.945 --> 00:42:57.625 was early initiation of PO

NOTE Confidence: 0.95135665

00:42:57.625 --> 00:42:59.645 beta blockers with metoprolol succinate.

NOTE Confidence: 0.98451203

00:43:01.100 --> 00:43:02.219 And just to go quickly

NOTE Confidence: 0.98451203

00:43:02.219 --> 00:43:02.960 through, so

NOTE Confidence: 0.8886579

00:43:03.340 --> 00:43:05.520 she transferred to Cardiology four,

NOTE Confidence: 0.9714374

00:43:06.060 --> 00:43:07.260 heart rate was tolerating the

NOTE Confidence: 0.9714374

00:43:07.260 --> 00:43:07.760 Metoprolol,

NOTE Confidence: 0.92952895

00:43:08.060 --> 00:43:10.060 all her perfusion indices vitals

NOTE Confidence: 0.92952895

00:43:10.060 --> 00:43:11.660 tolerating, and she and it

NOTE Confidence: 0.92952895

00:43:11.660 --> 00:43:13.085 was increased, And she was

NOTE Confidence: 0.92952895

00:43:13.085 --> 00:43:14.844 started on guideline directed medical

NOTE Confidence: 0.92952895

00:43:14.844 --> 00:43:16.444 therapy for new heart failure

NOTE Confidence: 0.92952895

00:43:16.444 --> 00:43:17.505 including empagliflozin,

NOTE Confidence: 0.7174515

00:43:17.805 --> 00:43:18.305 Spiro,

NOTE Confidence: 0.89069206

00:43:19.085 --> 00:43:21.005 and ASR was considered and

NOTE Confidence: 0.89069206

00:43:21.005 --> 00:43:22.525 planned for outpatient but given

NOTE Confidence: 0.89069206

00:43:22.525 --> 00:43:23.664 her recovering creatinine,

NOTE Confidence: 0.95083076

00:43:24.605 --> 00:43:25.885 was planned for outpatient like

NOTE Confidence: 0.95083076

00:43:25.885 --> 00:43:26.464 I mentioned.

NOTE Confidence: 0.9432828

00:43:27.130 --> 00:43:28.510 She was discharged on DDMT

NOTE Confidence: 0.9432828

00:43:28.650 --> 00:43:29.710 in the coming days.

NOTE Confidence: 0.96700805

00:43:31.369 --> 00:43:32.910 One month later at outpatient

NOTE Confidence: 0.96700805

00:43:32.969 --> 00:43:34.730 follow-up, she was doing great.

NOTE Confidence: 0.96700805

00:43:34.969 --> 00:43:36.030 She was on DDMT,

NOTE Confidence: 0.9801637

00:43:36.489 --> 00:43:38.570 losartan was started, she was

NOTE Confidence: 0.9801637

00:43:38.570 --> 00:43:40.030 doing all her daily activities,

NOTE Confidence: 0.86355305

00:43:40.330 --> 00:43:41.710 no signs of Von's overload,

NOTE Confidence: 0.84947413

00:43:42.265 --> 00:43:42.765 and,

NOTE Confidence: 0.96106076

00:43:43.625 --> 00:43:45.225 repeat echo was planned, and

NOTE Confidence: 0.96106076

00:43:45.225 --> 00:43:47.065 just, to go very quickly

NOTE Confidence: 0.96106076

00:43:47.065 --> 00:43:47.565 through,

NOTE Confidence: 0.99335897

00:43:48.105 --> 00:43:49.225 we see that there really

NOTE Confidence: 0.99335897

00:43:49.225 --> 00:43:50.685 wasn't much of a significant

NOTE Confidence: 0.97655857

00:43:51.145 --> 00:43:53.065 gradient anymore. We still noted

NOTE Confidence: 0.97655857

00:43:53.065 --> 00:43:54.505 that septal hypertrophy with a

NOTE Confidence: 0.97655857

00:43:54.505 --> 00:43:55.785 thickness of one point five

NOTE Confidence: 0.97655857

00:43:55.785 --> 00:43:56.285 centimeters.

NOTE Confidence: 0.9288216

00:43:57.519 --> 00:43:59.359 She had mild to moderate

NOTE Confidence: 0.9288216

00:43:59.359 --> 00:44:01.119 MR compared to prior severe

NOTE Confidence: 0.9288216

00:44:01.119 --> 00:44:02.079 that we saw in a

NOTE Confidence: 0.9288216

00:44:02.079 --> 00:44:03.519 case, and her EF recovered

NOTE Confidence: 0.9288216

00:44:03.519 --> 00:44:04.660 to sixty four percent.

NOTE Confidence: 0.96349853

00:44:05.119 --> 00:44:06.239 So just in these last

NOTE Confidence: 0.96349853

00:44:06.239 --> 00:44:07.440 few minutes, I actually don't

NOTE Confidence: 0.96349853

00:44:07.440 --> 00:44:08.660 know what time it is.

NOTE Confidence: 0.65225214

00:44:09.805 --> 00:44:10.545 I just wanted to

NOTE Confidence: 0.9147358

00:44:10.844 --> 00:44:12.445 sorry? Eighteen minutes. Oh, okay.

NOTE Confidence: 0.9147358

00:44:12.445 --> 00:44:13.344 Great. Awesome.

NOTE Confidence: 0.8317817

00:44:15.085 --> 00:44:16.305 So medical management,

NOTE Confidence: 0.9861101

00:44:16.765 --> 00:44:17.885 in the post acute care

NOTE Confidence: 0.9861101

00:44:17.885 --> 00:44:18.844 setting, I just wanted to

NOTE Confidence: 0.9861101

00:44:18.844 --> 00:44:20.225 briefly touch on this,

NOTE Confidence: 0.9534746

00:44:20.925 --> 00:44:21.885 because a lot of these

NOTE Confidence: 0.9534746

00:44:21.885 --> 00:44:22.925 questions come up in my

NOTE Confidence: 0.9534746

00:44:22.925 --> 00:44:24.305 mind during fellows clinic.

NOTE Confidence: 0.94564563

00:44:26.239 --> 00:44:27.359 You know, a question that

NOTE Confidence: 0.94564563

00:44:27.359 --> 00:44:28.480 comes up, like I said

NOTE Confidence: 0.94564563

00:44:28.480 --> 00:44:29.920 in clinic, was, you know,

NOTE Confidence: 0.94564563

00:44:29.920 --> 00:44:31.280 depending on the etiology of

NOTE Confidence: 0.94564563

00:44:31.280 --> 00:44:32.560 heart failure and the presence

NOTE Confidence: 0.94564563

00:44:32.560 --> 00:44:34.580 or absence of cardiogenic shock,

NOTE Confidence: 0.96674156

00:44:35.359 --> 00:44:36.739 should we continue GDMT

NOTE Confidence: 0.99501413

00:44:37.280 --> 00:44:37.780 indefinitely

NOTE Confidence: 0.99616987

00:44:38.080 --> 00:44:39.219 on all of our patients?

NOTE Confidence: 0.9492126

00:44:40.025 --> 00:44:41.545 Is there nuance to, you

NOTE Confidence: 0.9492126

00:44:41.545 --> 00:44:43.785 know, whether the etiology matters,

NOTE Confidence: 0.9492126

00:44:43.785 --> 00:44:45.005 whether the presence of cardiogenic

NOTE Confidence: 0.9492126

00:44:45.065 --> 00:44:46.125 shock like I mentioned?

NOTE Confidence: 0.8501974

00:44:46.905 --> 00:44:48.185 Bart Filiar Community is in

NOTE Confidence: 0.8501974

00:44:48.185 --> 00:44:49.785 agreement, this paper from twenty

NOTE Confidence: 0.8501974

00:44:49.785 --> 00:44:50.525 twenty four,

NOTE Confidence: 0.96129507

00:44:51.465 --> 00:44:52.505 which looked at the French

NOTE Confidence: 0.96129507

00:44:52.505 --> 00:44:54.445 Observatory of Management of Cardiogenic

NOTE Confidence: 0.96129507

00:44:54.585 --> 00:44:56.150 Shock, the French Shock Registry,

NOTE Confidence: 0.96129507

00:44:56.150 --> 00:44:57.430 showed that patients who have

NOTE Confidence: 0.96129507

00:44:57.430 --> 00:44:59.030 an improvement of EF and

NOTE Confidence: 0.96129507

00:44:59.030 --> 00:45:00.550 stay on triple GDMT as

NOTE Confidence: 0.96129507

00:45:00.550 --> 00:45:01.750 opposed to double or single

NOTE Confidence: 0.96129507

00:45:01.750 --> 00:45:02.410 or none,

NOTE Confidence: 0.9831919

00:45:02.790 --> 00:45:04.090 have better survival.

NOTE Confidence: 0.96041596

00:45:05.989 --> 00:45:07.350 But how about specifically in

NOTE Confidence: 0.96041596

00:45:07.350 --> 00:45:08.950 heart failure or cardiogenic shock

NOTE Confidence: 0.96041596

00:45:08.950 --> 00:45:10.010 due to stress cardiomyopathy?

NOTE Confidence: 0.97816044

00:45:12.674 --> 00:45:13.954 From my review, there's really

NOTE Confidence: 0.97816044

00:45:13.954 --> 00:45:15.234 a lack of clarity around

NOTE Confidence: 0.97816044

00:45:15.234 --> 00:45:16.535 this specific situation.

NOTE Confidence: 0.93220586

00:45:17.954 --> 00:45:19.394 There's some modest data from

NOTE Confidence: 0.93220586

00:45:19.394 --> 00:45:20.214 meta analyses

NOTE Confidence: 0.95783204

00:45:20.914 --> 00:45:21.954 such as this one, but

NOTE Confidence: 0.95783204

00:45:21.954 --> 00:45:22.694 no inclusive

NOTE Confidence: 0.9936574

00:45:23.154 --> 00:45:24.914 large scale observational or clinical

NOTE Confidence: 0.9936574

00:45:24.914 --> 00:45:25.815 trial data.

NOTE Confidence: 0.93042797

00:45:26.440 --> 00:45:27.960 This study from Italy showed

NOTE Confidence: 0.93042797

00:45:27.960 --> 00:45:29.239 that there really wasn't any

NOTE Confidence: 0.93042797

00:45:29.239 --> 00:45:30.520 conclusive evidence, and of note

NOTE Confidence: 0.93042797

00:45:30.520 --> 00:45:31.640 this is, you know, back

NOTE Confidence: 0.93042797

00:45:31.640 --> 00:45:32.620 in twenty fourteen,

NOTE Confidence: 0.9769528

00:45:33.400 --> 00:45:35.480 no conclusive evidence to support

NOTE Confidence: 0.9769528

00:45:35.480 --> 00:45:36.840 that beta blockers or ACE

NOTE Confidence: 0.9769528

00:45:36.840 --> 00:45:37.340 inhibitors,

NOTE Confidence: 0.968258

00:45:38.815 --> 00:45:40.975 prevented recurrence of Takotsubo. And

NOTE Confidence: 0.968258

00:45:40.975 --> 00:45:41.855 for what it's worth, the

NOTE Confidence: 0.968258

00:45:41.855 --> 00:45:43.315 risk of recurrence of Takotsubo

NOTE Confidence: 0.968258

00:45:43.455 --> 00:45:44.735 itself is just five to

NOTE Confidence: 0.968258

00:45:44.735 --> 00:45:46.255 twenty two percent in five

NOTE Confidence: 0.968258

00:45:46.255 --> 00:45:48.175 years. So not really clear

NOTE Confidence: 0.968258

00:45:48.175 --> 00:45:49.395 what the effect of GDMT

NOTE Confidence: 0.968258

00:45:49.614 --> 00:45:50.594 would be there.

NOTE Confidence: 0.9730141

00:45:51.140 --> 00:45:52.500 And unfortunately, like I said,

NOTE Confidence: 0.9730141

00:45:52.500 --> 00:45:54.500 no large care evaluation of

NOTE Confidence: 0.9730141

00:45:54.500 --> 00:45:55.620 the usual things we look

NOTE Confidence: 0.9730141

00:45:55.620 --> 00:45:56.900 for in heart failure, repeat

NOTE Confidence: 0.9730141

00:45:56.900 --> 00:45:57.400 hospitalization,

NOTE Confidence: 0.97996

00:45:57.780 --> 00:45:59.940 adverse cardiac events, heart failure

NOTE Confidence: 0.97996

00:45:59.940 --> 00:46:00.440 symptoms.

NOTE Confidence: 0.98677087

00:46:01.140 --> 00:46:02.280 Even less evidence,

NOTE Confidence: 0.9529116

00:46:03.060 --> 00:46:04.120 exists for,

NOTE Confidence: 0.9447919

00:46:04.455 --> 00:46:05.895 you know, these special phenotypes

NOTE Confidence: 0.9447919

00:46:05.895 --> 00:46:07.495 of Takasubo like our patient

NOTE Confidence: 0.9447919

00:46:07.495 --> 00:46:09.035 with LV outflow tract obstruction.

NOTE Confidence: 0.9521883

00:46:09.655 --> 00:46:10.935 And to that effect, I

NOTE Confidence: 0.9521883

00:46:10.935 --> 00:46:12.455 would like to have my

NOTE Confidence: 0.9521883

00:46:12.455 --> 00:46:14.215 last speaker today, doctor Nikhil

NOTE Confidence: 0.9521883

00:46:14.215 --> 00:46:14.715 Sikan,

NOTE Confidence: 0.8902986

00:46:15.575 --> 00:46:16.475 comment on,

NOTE Confidence: 0.98954296

00:46:17.010 --> 00:46:18.850 in this patient, would you

NOTE Confidence: 0.98954296

00:46:18.850 --> 00:46:21.430 continue guideline directed medical therapy?

NOTE Confidence: 0.99978

00:46:21.730 --> 00:46:22.469 What further

NOTE Confidence: 0.97309977

00:46:22.770 --> 00:46:24.770 sort of diagnostic investigations would

NOTE Confidence: 0.97309977

00:46:24.770 --> 00:46:26.290 you recommend, and what would

NOTE Confidence: 0.97309977

00:46:26.290 --> 00:46:26.790 you,

NOTE Confidence: 0.9329289

00:46:27.969 --> 00:46:29.350 do with your fluid management?

NOTE Confidence: 0.9749848

00:46:30.094 --> 00:46:31.214 Thanks, Divya. I I think

NOTE Confidence: 0.9749848

00:46:31.214 --> 00:46:32.015 this is a great case

NOTE Confidence: 0.9749848

00:46:32.015 --> 00:46:33.075 that you put together.

NOTE Confidence: 0.93372387

00:46:34.255 --> 00:46:35.694 I mean, asking a heart

NOTE Confidence: 0.93372387

00:46:35.694 --> 00:46:37.214 failure cardiologist if they're gonna

NOTE Confidence: 0.93372387

00:46:37.214 --> 00:46:38.974 continue GDMT is a I

NOTE Confidence: 0.93372387

00:46:38.974 --> 00:46:40.654 don't know. Like question. Yeah.

NOTE Confidence: 0.93372387

00:46:40.654 --> 00:46:41.775 Clearly, I'm gonna have an

NOTE Confidence: 0.93372387

00:46:41.775 --> 00:46:42.815 answer on that, which is

NOTE Confidence: 0.93372387

00:46:42.815 --> 00:46:44.219 yes. But I I think,

NOTE Confidence: 0.95512486

00:46:44.780 --> 00:46:46.560 like, is this data is,

NOTE Confidence: 0.95512486

00:46:46.780 --> 00:46:49.280 I think, interesting, maybe hypothesis

NOTE Confidence: 0.95512486

00:46:49.340 --> 00:46:50.619 generating in that sense that

NOTE Confidence: 0.95512486

00:46:50.619 --> 00:46:52.160 we need to, you know,

NOTE Confidence: 0.95512486

00:46:52.219 --> 00:46:53.099 bring a lot of these

NOTE Confidence: 0.95512486

00:46:53.099 --> 00:46:54.300 patients together and study how

NOTE Confidence: 0.95512486

00:46:54.300 --> 00:46:55.340 they do long term. But

NOTE Confidence: 0.95512486

00:46:55.340 --> 00:46:56.859 I think I tend to

NOTE Confidence: 0.95512486

00:46:56.859 --> 00:46:57.359 apply

NOTE Confidence: 0.9722008

00:46:58.015 --> 00:47:00.015 the data that looks at

NOTE Confidence: 0.9722008

00:47:00.015 --> 00:47:01.375 how do patients with heart

NOTE Confidence: 0.9722008

00:47:01.375 --> 00:47:03.614 failure with improved EF do

NOTE Confidence: 0.9722008

00:47:03.614 --> 00:47:04.114 overall

NOTE Confidence: 0.97158

00:47:04.575 --> 00:47:05.855 as a group, because that's

NOTE Confidence: 0.97158

00:47:05.855 --> 00:47:06.655 the group that we have

NOTE Confidence: 0.97158

00:47:06.655 --> 00:47:07.695 the most data for. And

NOTE Confidence: 0.97158

00:47:07.695 --> 00:47:09.635 I think the overwhelming evidence

NOTE Confidence: 0.97158

00:47:09.775 --> 00:47:11.989 is that withdrawal of GDMT

NOTE Confidence: 0.97158

00:47:12.130 --> 00:47:13.810 in those patients carries a

NOTE Confidence: 0.97158

00:47:13.810 --> 00:47:14.790 risk of,

NOTE Confidence: 0.9578808

00:47:15.410 --> 00:47:17.170 relapse of heart failure, whether

NOTE Confidence: 0.9578808

00:47:17.170 --> 00:47:18.130 or not it's, you know,

NOTE Confidence: 0.9578808

00:47:18.130 --> 00:47:19.730 a new Takotsubo or just

NOTE Confidence: 0.9578808

00:47:19.730 --> 00:47:20.850 a relapse of heart failure

NOTE Confidence: 0.9578808

00:47:20.850 --> 00:47:22.450 with worsening injection fraction or

NOTE Confidence: 0.9578808

00:47:22.450 --> 00:47:24.370 with clinical heart failure. So

NOTE Confidence: 0.9578808

00:47:24.370 --> 00:47:25.440 I I think

NOTE Confidence: 0.979674

00:47:25.935 --> 00:47:27.135 my practice based on that

NOTE Confidence: 0.979674

00:47:27.135 --> 00:47:28.114 would be to,

NOTE Confidence: 0.96525455

00:47:28.735 --> 00:47:30.175 obviously, have a patient centered

NOTE Confidence: 0.96525455

00:47:30.175 --> 00:47:32.175 discussion because these medications may

NOTE Confidence: 0.96525455

00:47:32.175 --> 00:47:33.455 be continued for long periods

NOTE Confidence: 0.96525455

00:47:33.455 --> 00:47:34.255 of time, if not the

NOTE Confidence: 0.96525455

00:47:34.255 --> 00:47:35.135 rest of their lives. But

NOTE Confidence: 0.96525455

00:47:35.135 --> 00:47:36.755 if they're tolerating these medications,

NOTE Confidence: 0.96525455

00:47:36.895 --> 00:47:38.495 I think it makes sense

NOTE Confidence: 0.96525455

00:47:38.495 --> 00:47:40.114 to continue them at some

NOTE Confidence: 0.96525455

00:47:40.359 --> 00:47:40.859 doses,

NOTE Confidence: 0.99917847

00:47:41.560 --> 00:47:43.020 because the risk of

NOTE Confidence: 0.9539979

00:47:43.400 --> 00:47:45.320 of relapse in improved ejection

NOTE Confidence: 0.9539979

00:47:45.320 --> 00:47:47.099 fraction is a third, maybe,

NOTE Confidence: 0.96822494

00:47:47.400 --> 00:47:48.839 you know, more than that

NOTE Confidence: 0.96822494

00:47:48.839 --> 00:47:49.579 of patients.

NOTE Confidence: 0.9441253

00:47:50.280 --> 00:47:51.400 As far as other, like,

NOTE Confidence: 0.9441253

00:47:51.400 --> 00:47:53.000 diagnostic workups, I think maybe

NOTE Confidence: 0.9441253

00:47:53.000 --> 00:47:54.119 what you're getting at is

NOTE Confidence: 0.9441253

00:47:54.119 --> 00:47:54.619 that,

NOTE Confidence: 0.9609375

00:47:55.205 --> 00:47:56.505 the patient did have,

NOTE Confidence: 0.9797287

00:47:57.525 --> 00:47:59.864 septal hypertrophy here and LVOT

NOTE Confidence: 0.9797287

00:48:00.005 --> 00:48:01.844 obstruction, which sort of brings

NOTE Confidence: 0.9797287

00:48:01.844 --> 00:48:03.525 up the question of whether

NOTE Confidence: 0.9797287

00:48:03.525 --> 00:48:05.285 they have some sort of

NOTE Confidence: 0.9797287

00:48:05.285 --> 00:48:06.344 subtype of

NOTE Confidence: 0.74359936

00:48:06.645 --> 00:48:07.145 hypertrophic

NOTE Confidence: 0.9994451

00:48:07.445 --> 00:48:07.945 cardiomyopathy

NOTE Confidence: 0.9768951

00:48:08.565 --> 00:48:09.625 or another cardiomyopathy.

NOTE Confidence: 0.9383485

00:48:11.520 --> 00:48:12.320 It would be a bit

NOTE Confidence: 0.9383485

00:48:12.320 --> 00:48:14.239 unusual to have that kind

NOTE Confidence: 0.9383485

00:48:14.239 --> 00:48:15.940 of presentation where you have

NOTE Confidence: 0.9383485

00:48:16.000 --> 00:48:17.200 a stress myopathy in the

NOTE Confidence: 0.9383485

00:48:17.200 --> 00:48:18.560 setting of an underlying HCM.

NOTE Confidence: 0.9383485

00:48:18.560 --> 00:48:20.160 Although, HCM, as we know,

NOTE Confidence: 0.9383485

00:48:20.160 --> 00:48:21.680 is very common. Probably one

NOTE Confidence: 0.9383485

00:48:21.680 --> 00:48:23.300 in two hundred fifty people,

NOTE Confidence: 0.9762832

00:48:23.815 --> 00:48:24.775 to one in five hundred

NOTE Confidence: 0.9762832

00:48:24.775 --> 00:48:26.375 people have some form of

NOTE Confidence: 0.9762832

00:48:26.375 --> 00:48:28.295 it. So, it's possible. What

NOTE Confidence: 0.9762832

00:48:28.295 --> 00:48:29.175 I would say with these

NOTE Confidence: 0.9762832

00:48:29.175 --> 00:48:30.315 patients who have,

NOTE Confidence: 0.9555807

00:48:31.495 --> 00:48:32.635 these kind of borderline

NOTE Confidence: 0.8832127

00:48:32.935 --> 00:48:35.035 findings like this is I,

NOTE Confidence: 0.8832127

00:48:35.094 --> 00:48:36.775 especially in our institution, often

NOTE Confidence: 0.8832127

00:48:36.775 --> 00:48:38.155 will get a cardiac MRI

NOTE Confidence: 0.99407333

00:48:38.455 --> 00:48:39.114 in them

NOTE Confidence: 0.91791564

00:48:39.440 --> 00:48:40.660 to better understand,

NOTE Confidence: 0.9774874

00:48:41.760 --> 00:48:42.900 the exact measurements,

NOTE Confidence: 0.91333467

00:48:43.360 --> 00:48:44.340 as well as,

NOTE Confidence: 0.98312116

00:48:44.880 --> 00:48:46.560 late gadolinium enhancement, and some

NOTE Confidence: 0.98312116

00:48:46.560 --> 00:48:47.520 of the other findings that

NOTE Confidence: 0.98312116

00:48:47.520 --> 00:48:48.340 may be helpful

NOTE Confidence: 0.9276799

00:48:48.720 --> 00:48:50.080 to suggest. And then, obviously,

NOTE Confidence: 0.9276799

00:48:50.080 --> 00:48:51.360 take a good history understanding

NOTE Confidence: 0.9276799

00:48:51.360 --> 00:48:52.160 if they have a family

NOTE Confidence: 0.9276799

00:48:52.160 --> 00:48:54.195 history or comorbidities. I believe

NOTE Confidence: 0.9276799

00:48:54.275 --> 00:48:56.114 this patient had hypertension, so

NOTE Confidence: 0.9276799

00:48:56.114 --> 00:48:57.875 it's entirely possible that the

NOTE Confidence: 0.9276799

00:48:57.875 --> 00:48:58.775 basal septal

NOTE Confidence: 0.96452177

00:48:59.155 --> 00:49:00.775 hypertrophy is from that,

NOTE Confidence: 0.976988

00:49:01.635 --> 00:49:02.835 and that, you know, I

NOTE Confidence: 0.976988

00:49:02.835 --> 00:49:04.594 I think could probably explain

NOTE Confidence: 0.976988

00:49:04.594 --> 00:49:06.035 what we're talking about here.

NOTE Confidence: 0.976988

00:49:06.035 --> 00:49:06.755 But if you had a

NOTE Confidence: 0.976988

00:49:06.755 --> 00:49:08.435 suspicion, it's not unreasonable to

NOTE Confidence: 0.976988

00:49:08.435 --> 00:49:10.170 obtain genetic testing in an

NOTE Confidence: 0.976988

00:49:10.170 --> 00:49:11.930 MRI given the, how common

NOTE Confidence: 0.976988

00:49:11.930 --> 00:49:12.910 HCM is.

NOTE Confidence: 0.9283935

00:49:13.930 --> 00:49:14.829 I have a question.

NOTE Confidence: 0.92101794

00:49:15.849 --> 00:49:17.690 So, Nikhil, this patient, Divya,

NOTE Confidence: 0.92101794

00:49:17.690 --> 00:49:18.809 this patient was discharged on

NOTE Confidence: 0.92101794

00:49:18.809 --> 00:49:20.670 what day? Hospital day? Hospital

NOTE Confidence: 0.92101794

00:49:20.809 --> 00:49:22.969 day three. To hospital day

NOTE Confidence: 0.92101794

00:49:22.969 --> 00:49:24.650 three or Yeah. Three or

NOTE Confidence: 0.92101794

00:49:24.650 --> 00:49:25.150 four.

NOTE Confidence: 0.94458646

00:49:25.844 --> 00:49:26.344 So

NOTE Confidence: 0.9306118

00:49:27.125 --> 00:49:28.165 taking the chart trying to

NOTE Confidence: 0.9306118

00:49:28.165 --> 00:49:30.325 find it. So, Nikhil, if,

NOTE Confidence: 0.9306118

00:49:30.325 --> 00:49:31.525 you know, our mantra is

NOTE Confidence: 0.9306118

00:49:31.525 --> 00:49:32.165 to get all of our

NOTE Confidence: 0.9306118

00:49:32.165 --> 00:49:34.105 patients on TDMT before discharge.

NOTE Confidence: 0.9306118

00:49:34.244 --> 00:49:36.185 This patient just recovered from

NOTE Confidence: 0.9943522

00:49:36.645 --> 00:49:37.785 LVOT obstruction.

NOTE Confidence: 0.99852645

00:49:38.600 --> 00:49:39.100 Do

NOTE Confidence: 0.94059056

00:49:39.480 --> 00:49:41.000 I hesitate not from a

NOTE Confidence: 0.94059056

00:49:41.000 --> 00:49:42.280 renal perspective like this team

NOTE Confidence: 0.94059056

00:49:42.280 --> 00:49:43.480 did, but from a blood

NOTE Confidence: 0.94059056

00:49:43.480 --> 00:49:45.320 pressure lowering perspective of starting

NOTE Confidence: 0.94059056

00:49:45.320 --> 00:49:46.760 an ACE and AR? Do

NOTE Confidence: 0.94059056

00:49:46.760 --> 00:49:47.960 I still maximize it to

NOTE Confidence: 0.94059056

00:49:47.960 --> 00:49:49.739 the to the maximum tolerated

NOTE Confidence: 0.9602947

00:49:50.360 --> 00:49:51.719 per the studies? Do I

NOTE Confidence: 0.9602947

00:49:51.800 --> 00:49:52.920 does is there any change

NOTE Confidence: 0.9602947

00:49:52.920 --> 00:49:54.040 of how I think about

NOTE Confidence: 0.9602947

00:49:54.040 --> 00:49:55.234 the timing of this?

NOTE Confidence: 0.9100618

00:49:55.855 --> 00:49:57.214 Or, how would you have

NOTE Confidence: 0.9100618

00:49:57.214 --> 00:49:57.855 approached it if you were

NOTE Confidence: 0.9100618

00:49:57.855 --> 00:49:58.734 in the primary? Would you

NOTE Confidence: 0.9100618

00:49:58.734 --> 00:49:59.855 have delayed or would you

NOTE Confidence: 0.9100618

00:49:59.855 --> 00:50:01.694 said, nope? You know, studies

NOTE Confidence: 0.9100618

00:50:01.694 --> 00:50:02.734 show put the patient on

NOTE Confidence: 0.9100618

00:50:02.734 --> 00:50:04.515 all four GDMT before discharge.

NOTE Confidence: 0.9100618

00:50:04.654 --> 00:50:06.094 Let's add the r before

NOTE Confidence: 0.9100618

00:50:06.094 --> 00:50:07.295 on day four, or would

NOTE Confidence: 0.9100618

00:50:07.295 --> 00:50:08.414 you have waited a little

NOTE Confidence: 0.9100618

00:50:08.414 --> 00:50:08.914 bit?

NOTE Confidence: 0.98115873

00:50:10.450 --> 00:50:11.410 So I I think those

NOTE Confidence: 0.98115873

00:50:11.410 --> 00:50:13.010 studies that we're talking about

NOTE Confidence: 0.98115873

00:50:13.010 --> 00:50:13.830 really look

NOTE Confidence: 0.9351424

00:50:14.210 --> 00:50:15.730 at adherence, and, certainly, patients

NOTE Confidence: 0.9351424

00:50:15.730 --> 00:50:16.550 that are on,

NOTE Confidence: 0.9577283

00:50:17.410 --> 00:50:19.030 all four pillars of GDMT

NOTE Confidence: 0.9577283

00:50:19.090 --> 00:50:20.610 prior to discharge are are

NOTE Confidence: 0.9577283

00:50:20.610 --> 00:50:22.015 more likely to take those

NOTE Confidence: 0.9577283

00:50:22.015 --> 00:50:23.614 medications long term, and then

NOTE Confidence: 0.9577283

00:50:23.614 --> 00:50:24.495 because of that are more

NOTE Confidence: 0.9577283

00:50:24.495 --> 00:50:25.455 likely to have a better

NOTE Confidence: 0.9577283

00:50:25.455 --> 00:50:25.955 outcome.

NOTE Confidence: 0.9080131

00:50:26.415 --> 00:50:27.375 But, I think we kind

NOTE Confidence: 0.9080131

00:50:27.375 --> 00:50:28.355 of need to individualize

NOTE Confidence: 0.9323431

00:50:28.655 --> 00:50:30.655 patient decisions. And I think

NOTE Confidence: 0.9323431

00:50:30.655 --> 00:50:31.855 more important with a patient

NOTE Confidence: 0.9323431

00:50:31.855 --> 00:50:33.215 like this is arranging for

NOTE Confidence: 0.9323431

00:50:33.215 --> 00:50:33.715 close

NOTE Confidence: 0.98795015

00:50:34.119 --> 00:50:35.560 follow-up in the outpatient setting,

NOTE Confidence: 0.98795015

00:50:35.560 --> 00:50:36.440 not so much that we

NOTE Confidence: 0.98795015

00:50:36.440 --> 00:50:37.800 need to necessarily have them

NOTE Confidence: 0.98795015

00:50:37.800 --> 00:50:39.500 on all four pillars.

NOTE Confidence: 0.92639023

00:50:40.119 --> 00:50:41.560 Obviously, this patient was in

NOTE Confidence: 0.92639023

00:50:41.560 --> 00:50:43.320 shock, I guess, seventy two

NOTE Confidence: 0.92639023

00:50:43.320 --> 00:50:45.339 hours before discharge. And so,

NOTE Confidence: 0.92639023

00:50:45.400 --> 00:50:46.300 in my mind,

NOTE Confidence: 0.9676189

00:50:48.335 --> 00:50:49.375 you know, the beta blocker

NOTE Confidence: 0.9676189

00:50:49.375 --> 00:50:50.094 makes a lot of sense

NOTE Confidence: 0.9676189

00:50:50.094 --> 00:50:51.295 given all the physiology that

NOTE Confidence: 0.9676189

00:50:51.295 --> 00:50:52.575 we've talked about. But some

NOTE Confidence: 0.9676189

00:50:52.575 --> 00:50:53.775 of the other GDMT, I

NOTE Confidence: 0.9676189

00:50:53.775 --> 00:50:55.055 think, would be important to

NOTE Confidence: 0.9676189

00:50:55.055 --> 00:50:56.015 get on board. I mean,

NOTE Confidence: 0.9676189

00:50:56.015 --> 00:50:57.295 personally, I would have, you

NOTE Confidence: 0.9676189

00:50:57.295 --> 00:50:58.815 know, had considered some kind

NOTE Confidence: 0.9676189

00:50:58.815 --> 00:50:59.714 of RAS inhibition

NOTE Confidence: 0.9823592

00:51:00.869 --> 00:51:02.469 at very low dose prior

NOTE Confidence: 0.9823592

00:51:02.469 --> 00:51:03.690 to discharge. But,

NOTE Confidence: 0.99843806

00:51:04.230 --> 00:51:05.690 you know, I don't see

NOTE Confidence: 0.95446837

00:51:06.390 --> 00:51:07.750 it as a requirement. But

NOTE Confidence: 0.95446837

00:51:07.750 --> 00:51:08.469 I I do see it

NOTE Confidence: 0.95446837

00:51:08.469 --> 00:51:09.510 as a requirement that this

NOTE Confidence: 0.95446837

00:51:09.510 --> 00:51:11.609 patient be seen very close

NOTE Confidence: 0.95446837

00:51:11.670 --> 00:51:12.950 follow-up, and then have those

NOTE Confidence: 0.95446837

00:51:12.950 --> 00:51:14.809 medications titrated in that setting.

NOTE Confidence: 0.95446837

00:51:14.869 --> 00:51:15.369 Awesome.

NOTE Confidence: 0.9019928

00:51:17.045 --> 00:51:17.924 So maybe we can open

NOTE Confidence: 0.9019928

00:51:17.924 --> 00:51:18.825 up for questions.

NOTE Confidence: 0.96858305

00:51:19.204 --> 00:51:20.484 And I'm gonna make a

NOTE Confidence: 0.96858305

00:51:20.484 --> 00:51:21.364 few comments and then give

NOTE Confidence: 0.96858305

00:51:21.364 --> 00:51:22.484 it to Stefania, who I

NOTE Confidence: 0.96858305

00:51:22.484 --> 00:51:23.364 was gonna ask you to

NOTE Confidence: 0.96858305

00:51:23.364 --> 00:51:24.904 comment on, actually. So,

NOTE Confidence: 0.98680574

00:51:25.684 --> 00:51:27.384 so first of all, phenomenal

NOTE Confidence: 0.9584888

00:51:27.844 --> 00:51:28.344 job.

NOTE Confidence: 0.8476197

00:51:33.260 --> 00:51:34.080 And, and really,

NOTE Confidence: 0.9137068

00:51:34.780 --> 00:51:35.660 I I wanna highlight a

NOTE Confidence: 0.9137068

00:51:35.660 --> 00:51:37.120 couple of things. One is,

NOTE Confidence: 0.84307575

00:51:39.020 --> 00:51:40.540 I hope you realize this

NOTE Confidence: 0.84307575

00:51:40.540 --> 00:51:41.040 patient

NOTE Confidence: 0.9994887

00:51:41.340 --> 00:51:43.280 could have easily died

NOTE Confidence: 0.95037055

00:51:43.974 --> 00:51:44.775 in the out in an

NOTE Confidence: 0.95037055

00:51:44.775 --> 00:51:46.055 outside hospital, and in many

NOTE Confidence: 0.95037055

00:51:46.055 --> 00:51:47.275 cases, would

NOTE Confidence: 0.9982826

00:51:47.575 --> 00:51:48.555 not do well.

NOTE Confidence: 0.9984107

00:51:48.855 --> 00:51:50.454 And so this really highlights

NOTE Confidence: 0.9984107

00:51:50.454 --> 00:51:51.194 the power

NOTE Confidence: 0.9935084

00:51:51.974 --> 00:51:53.035 of our health system,

NOTE Confidence: 0.9987337

00:51:53.335 --> 00:51:54.234 of our expertise

NOTE Confidence: 0.9095848

00:51:54.614 --> 00:51:55.114 across

NOTE Confidence: 0.97690254

00:51:55.575 --> 00:51:57.080 we have four different subspecialties

NOTE Confidence: 0.97690254

00:51:57.300 --> 00:51:58.580 identified here in this front

NOTE Confidence: 0.97690254

00:51:58.580 --> 00:51:59.080 row

NOTE Confidence: 0.8030349

00:51:59.540 --> 00:51:59.860 and,

NOTE Confidence: 0.88919926

00:52:00.420 --> 00:52:01.780 and and the command of,

NOTE Confidence: 0.9094656

00:52:02.500 --> 00:52:03.400 of of this,

NOTE Confidence: 0.947105

00:52:04.100 --> 00:52:05.140 of their knowledge. And I

NOTE Confidence: 0.947105

00:52:05.140 --> 00:52:06.660 think it's just really wonderful

NOTE Confidence: 0.947105

00:52:06.660 --> 00:52:07.860 to see. So, really, just

NOTE Confidence: 0.947105

00:52:07.860 --> 00:52:09.000 a comment in general.

NOTE Confidence: 0.97031444

00:52:09.300 --> 00:52:10.180 You know, when I I

NOTE Confidence: 0.97031444

00:52:10.180 --> 00:52:10.660 had the,

NOTE Confidence: 0.9293104

00:52:11.985 --> 00:52:13.825 you know and John might

NOTE Confidence: 0.9293104

00:52:13.825 --> 00:52:15.025 add some comments after this

NOTE Confidence: 0.9293104

00:52:15.025 --> 00:52:17.025 after Stefania's question, but and

NOTE Confidence: 0.9293104

00:52:17.025 --> 00:52:18.465 and, Jeff. So I think

NOTE Confidence: 0.9293104

00:52:18.465 --> 00:52:19.745 this brings us back to

NOTE Confidence: 0.9293104

00:52:19.745 --> 00:52:21.265 trying to understand first principles

NOTE Confidence: 0.9293104

00:52:21.265 --> 00:52:22.545 and mechanisms a little bit

NOTE Confidence: 0.9293104

00:52:22.545 --> 00:52:23.045 because,

NOTE Confidence: 0.9148853

00:52:23.760 --> 00:52:24.839 you know, the there was

NOTE Confidence: 0.9148853

00:52:24.839 --> 00:52:26.080 a couple elements that I

NOTE Confidence: 0.9148853

00:52:26.080 --> 00:52:27.200 recognized, and I'm, you know,

NOTE Confidence: 0.9148853

00:52:27.200 --> 00:52:29.040 no expert here, but was

NOTE Confidence: 0.9148853

00:52:29.040 --> 00:52:30.739 probably there's some baseline microaggressation

NOTE Confidence: 0.89733136

00:52:31.280 --> 00:52:32.800 that's increasing LV out to

NOTE Confidence: 0.83256793

00:52:34.000 --> 00:52:34.660 LV pressures.

NOTE Confidence: 0.973686

00:52:36.400 --> 00:52:38.320 That changes our the the

NOTE Confidence: 0.973686

00:52:38.320 --> 00:52:38.560 limit

NOTE Confidence: 0.936118

00:52:39.155 --> 00:52:40.935 the wall stress in general.

NOTE Confidence: 0.94785076

00:52:41.395 --> 00:52:43.335 And what was happening likely

NOTE Confidence: 0.94785076

00:52:43.474 --> 00:52:44.594 was that this person was

NOTE Confidence: 0.94785076

00:52:44.594 --> 00:52:46.835 getting increasingly ischemic even though

NOTE Confidence: 0.94785076

00:52:46.835 --> 00:52:47.734 they had epicardial

NOTE Confidence: 0.9827675

00:52:48.275 --> 00:52:49.655 normal coronary arteries

NOTE Confidence: 0.9553267

00:52:50.275 --> 00:52:51.474 because of the fact that

NOTE Confidence: 0.9553267

00:52:51.474 --> 00:52:53.494 wall stress was increasing and

NOTE Confidence: 0.99886274

00:52:53.980 --> 00:52:54.480 endocardial

NOTE Confidence: 0.96284324

00:52:54.780 --> 00:52:56.239 perfusion was decreasing.

NOTE Confidence: 0.8331928

00:52:56.780 --> 00:52:58.880 And troponins were elevated, BMPs

NOTE Confidence: 0.8331928

00:52:58.940 --> 00:52:59.600 were high,

NOTE Confidence: 0.99823016

00:53:00.219 --> 00:53:00.719 and

NOTE Confidence: 0.95599717

00:53:01.100 --> 00:53:02.960 some of the natural instincts

NOTE Confidence: 0.95599717

00:53:03.020 --> 00:53:04.140 of how we approach these

NOTE Confidence: 0.95599717

00:53:04.140 --> 00:53:05.820 patients could have only made

NOTE Confidence: 0.95599717

00:53:05.820 --> 00:53:07.340 that worse. Right? And so

NOTE Confidence: 0.95599717

00:53:07.340 --> 00:53:08.385 you had to, you know,

NOTE Confidence: 0.95599717

00:53:08.465 --> 00:53:09.844 kind of modify it. So

NOTE Confidence: 0.95599717

00:53:10.065 --> 00:53:11.344 in six years sitting on

NOTE Confidence: 0.95599717

00:53:11.344 --> 00:53:13.364 the myocardial sphemia and metabolism,

NOTE Confidence: 0.98529506

00:53:15.185 --> 00:53:16.005 study section,

NOTE Confidence: 0.97349584

00:53:16.625 --> 00:53:18.305 and I inherited that seat

NOTE Confidence: 0.97349584

00:53:18.305 --> 00:53:19.265 from Larry Young, who I

NOTE Confidence: 0.97349584

00:53:19.265 --> 00:53:20.725 didn't know really well before,

NOTE Confidence: 0.9989507

00:53:21.505 --> 00:53:22.725 I would say that

NOTE Confidence: 0.9791548

00:53:23.049 --> 00:53:24.589 pretty much on every

NOTE Confidence: 0.9146894

00:53:25.130 --> 00:53:26.750 meeting there were several

NOTE Confidence: 0.90681374

00:53:27.289 --> 00:53:27.789 outstanding,

NOTE Confidence: 0.8263041

00:53:28.489 --> 00:53:29.230 and smart

NOTE Confidence: 0.9976273

00:53:29.769 --> 00:53:30.269 submissions

NOTE Confidence: 0.9839702

00:53:30.809 --> 00:53:33.469 on the role of catecholamine

NOTE Confidence: 0.9839702

00:53:33.769 --> 00:53:34.269 excess,

NOTE Confidence: 0.9879047

00:53:34.969 --> 00:53:35.950 as a mechanism

NOTE Confidence: 0.9393339

00:53:36.344 --> 00:53:38.185 for stress carboxy. But to

NOTE Confidence: 0.9393339

00:53:38.185 --> 00:53:38.844 my knowledge,

NOTE Confidence: 0.99927187

00:53:39.305 --> 00:53:40.844 we still don't know exactly

NOTE Confidence: 0.75826997

00:53:41.705 --> 00:53:42.605 the the mechanism

NOTE Confidence: 0.9931755

00:53:42.984 --> 00:53:44.045 for stress carboxy.

NOTE Confidence: 0.9915069

00:53:44.585 --> 00:53:46.025 And so I'm curious, you

NOTE Confidence: 0.9915069

00:53:46.025 --> 00:53:46.525 know,

NOTE Confidence: 0.9975828

00:53:48.505 --> 00:53:50.045 since this case really demonstrates

NOTE Confidence: 0.9547674

00:53:50.425 --> 00:53:52.400 this ability to use multiple

NOTE Confidence: 0.9547674

00:53:52.400 --> 00:53:54.100 subspecialties and get through challenges,

NOTE Confidence: 0.87079996

00:53:55.040 --> 00:53:56.160 in the ideal world, and

NOTE Confidence: 0.87079996

00:53:56.160 --> 00:53:57.360 this is to maybe to

NOTE Confidence: 0.87079996

00:53:57.360 --> 00:53:58.420 you guys, Lou,

NOTE Confidence: 0.95228153

00:53:59.520 --> 00:54:00.880 what kind of, if you

NOTE Confidence: 0.95228153

00:54:00.880 --> 00:54:02.100 were able to sample

NOTE Confidence: 0.9985412

00:54:02.960 --> 00:54:04.525 in real time to try

NOTE Confidence: 0.9985412

00:54:04.525 --> 00:54:05.105 to understand

NOTE Confidence: 0.96677166

00:54:05.805 --> 00:54:07.405 mechanistically what was happening for

NOTE Confidence: 0.96677166

00:54:07.405 --> 00:54:08.145 this patient,

NOTE Confidence: 0.96784514

00:54:08.445 --> 00:54:09.745 and then that might drive

NOTE Confidence: 0.96784514

00:54:10.045 --> 00:54:11.725 decisions around beta blockade or

NOTE Confidence: 0.96784514

00:54:11.725 --> 00:54:12.385 other things,

NOTE Confidence: 0.91733676

00:54:13.005 --> 00:54:13.805 what would we have done?

NOTE Confidence: 0.91733676

00:54:13.805 --> 00:54:14.765 And so that's kinda just

NOTE Confidence: 0.91733676

00:54:14.844 --> 00:54:15.725 let's throw it out there.

NOTE Confidence: 0.91733676

00:54:15.725 --> 00:54:16.605 But maybe I'll give this

NOTE Confidence: 0.91733676

00:54:16.605 --> 00:54:17.645 to Stefani to ask your

NOTE Confidence: 0.91733676

00:54:17.645 --> 00:54:18.844 question and maybe John and

NOTE Confidence: 0.91733676

00:54:18.844 --> 00:54:20.550 Jeff's and maybe Jeff and

NOTE Confidence: 0.91733676

00:54:20.550 --> 00:54:21.690 others, Rachel,

NOTE Confidence: 0.7041887

00:54:22.150 --> 00:54:22.650 answer.

NOTE Confidence: 0.9073407

00:54:23.670 --> 00:54:24.630 Thank you very much. It

NOTE Confidence: 0.9073407

00:54:24.630 --> 00:54:26.330 was an amazing presentation,

NOTE Confidence: 0.9994643

00:54:26.630 --> 00:54:27.530 very digestible

NOTE Confidence: 0.8537121

00:54:27.830 --> 00:54:29.130 also for non clinician.

NOTE Confidence: 0.94236094

00:54:29.830 --> 00:54:31.350 Yeah. So, actually, related to

NOTE Confidence: 0.94236094

00:54:31.350 --> 00:54:33.190 that particular question, at least

NOTE Confidence: 0.94236094

00:54:33.190 --> 00:54:34.010 in in

NOTE Confidence: 0.917125

00:54:34.390 --> 00:54:35.050 in mammalian

NOTE Confidence: 0.82167524

00:54:35.350 --> 00:54:36.614 model is being shown that

NOTE Confidence: 0.82167524

00:54:36.614 --> 00:54:37.114 aging,

NOTE Confidence: 0.9514531

00:54:38.215 --> 00:54:40.315 create denervation of the heart

NOTE Confidence: 0.9514531

00:54:40.455 --> 00:54:42.135 via a mechanism by which

NOTE Confidence: 0.9514531

00:54:42.135 --> 00:54:43.995 the vascular cell produce

NOTE Confidence: 0.90078455

00:54:44.455 --> 00:54:47.114 this narrow repellent molecule, semaphorent

NOTE Confidence: 0.90078455

00:54:47.335 --> 00:54:49.000 three, and then kick the

NOTE Confidence: 0.90078455

00:54:49.000 --> 00:54:51.079 neuron away. And we don't

NOTE Confidence: 0.90078455

00:54:51.079 --> 00:54:51.900 know why

NOTE Confidence: 0.9432776

00:54:52.279 --> 00:54:53.719 that happened in a natural

NOTE Confidence: 0.9432776

00:54:53.719 --> 00:54:55.319 aging environment, but I was

NOTE Confidence: 0.9432776

00:54:55.319 --> 00:54:56.619 wondering if patients

NOTE Confidence: 0.9318385

00:54:57.319 --> 00:54:58.759 that are subject to this

NOTE Confidence: 0.9318385

00:54:58.759 --> 00:55:00.440 stress induced might be indeed

NOTE Confidence: 0.9318385

00:55:00.440 --> 00:55:01.660 have a different mechanism

NOTE Confidence: 0.99166465

00:55:01.960 --> 00:55:02.539 by which

NOTE Confidence: 0.97149026

00:55:02.994 --> 00:55:04.755 they actually maintain a lot

NOTE Confidence: 0.97149026

00:55:04.755 --> 00:55:05.494 of innervation.

NOTE Confidence: 0.89359957

00:55:06.114 --> 00:55:06.775 And, therefore,

NOTE Confidence: 0.9694562

00:55:07.234 --> 00:55:09.155 when they're under stress, these

NOTE Confidence: 0.9694562

00:55:09.155 --> 00:55:11.474 nerves start to act in

NOTE Confidence: 0.9694562

00:55:11.474 --> 00:55:12.935 a bizarre way. So

NOTE Confidence: 0.7559397

00:55:13.315 --> 00:55:15.094 one way could test again,

NOTE Confidence: 0.7945166

00:55:15.880 --> 00:55:17.020 measure blood

NOTE Confidence: 0.9510362

00:55:17.400 --> 00:55:18.840 of this type of molecule

NOTE Confidence: 0.9510362

00:55:18.840 --> 00:55:20.780 that are important for regulating

NOTE Confidence: 0.9510362

00:55:20.840 --> 00:55:23.320 neuron. Science fiction, but maybe

NOTE Confidence: 0.9510362

00:55:23.320 --> 00:55:24.619 some idea. Yeah.

NOTE Confidence: 0.93953353

00:55:25.800 --> 00:55:27.080 I wonder too if,

NOTE Confidence: 0.997821

00:55:28.025 --> 00:55:29.225 that could be connected at

NOTE Confidence: 0.997821

00:55:29.225 --> 00:55:30.765 all to sort of the

NOTE Confidence: 0.9650769

00:55:31.065 --> 00:55:33.625 hormonal and biochemical milieu of

NOTE Confidence: 0.9650769

00:55:33.625 --> 00:55:34.125 postmenopause

NOTE Confidence: 0.9514995

00:55:34.585 --> 00:55:36.265 as well since we aging

NOTE Confidence: 0.9514995

00:55:36.265 --> 00:55:36.925 and postmenopause

NOTE Confidence: 0.87473965

00:55:37.465 --> 00:55:38.525 are together in

NOTE Confidence: 0.93211424

00:55:38.985 --> 00:55:40.985 in those patients present with

NOTE Confidence: 0.93211424

00:55:40.985 --> 00:55:41.725 stress cardiomyopathy.

NOTE Confidence: 0.98641217

00:55:42.185 --> 00:55:42.685 So

NOTE Confidence: 0.98716813

00:55:44.369 --> 00:55:46.530 Wonderful presentation. Thank you. You

NOTE Confidence: 0.98716813

00:55:46.530 --> 00:55:47.730 had mentioned that there was

NOTE Confidence: 0.98716813

00:55:47.730 --> 00:55:49.010 an old left bundle branch

NOTE Confidence: 0.98716813

00:55:49.010 --> 00:55:50.630 block. And I was wondering

NOTE Confidence: 0.99193686

00:55:50.930 --> 00:55:52.050 about your thoughts on the

NOTE Confidence: 0.99193686

00:55:52.050 --> 00:55:52.550 etiology

NOTE Confidence: 0.98290884

00:55:53.089 --> 00:55:54.710 and then whether it contributed

NOTE Confidence: 0.98290884

00:55:54.770 --> 00:55:56.369 to the the current acute

NOTE Confidence: 0.98290884

00:55:56.369 --> 00:55:56.869 picture.

NOTE Confidence: 0.94944227

00:55:57.650 --> 00:55:58.150 Yes.

NOTE Confidence: 0.84550154

00:55:59.375 --> 00:56:00.415 So, I think it

NOTE Confidence: 0.67154187

00:56:01.055 --> 00:56:02.094 if you wanna say something?

NOTE Confidence: 0.67154187

00:56:02.094 --> 00:56:03.214 I was so I I

NOTE Confidence: 0.67154187

00:56:03.214 --> 00:56:04.195 had his first

NOTE Confidence: 0.7864277

00:56:44.230 --> 00:56:45.590 Right. So if someone's sick

NOTE Confidence: 0.7864277

00:56:45.590 --> 00:56:46.489 with a love bundle,

NOTE Confidence: 0.98449147

00:56:47.030 --> 00:56:48.469 you gotta come in. And

NOTE Confidence: 0.98449147

00:56:48.469 --> 00:56:49.430 and for what it's worth,

NOTE Confidence: 0.98449147

00:56:49.430 --> 00:56:50.469 the the change that we

NOTE Confidence: 0.98449147

00:56:50.469 --> 00:56:51.670 made was also informed by

NOTE Confidence: 0.98449147

00:56:51.670 --> 00:56:53.210 my experiences as a fellow,

NOTE Confidence: 0.98449147

00:56:53.270 --> 00:56:54.550 and I know you guys

NOTE Confidence: 0.98449147

00:56:54.550 --> 00:56:55.485 have had the same

NOTE Confidence: 0.9538428

00:56:55.885 --> 00:56:57.885 experience where the patient comes

NOTE Confidence: 0.9538428

00:56:57.885 --> 00:56:59.405 in and you're trying to

NOTE Confidence: 0.9538428

00:56:59.405 --> 00:57:00.445 do the right thing, and

NOTE Confidence: 0.9538428

00:57:00.445 --> 00:57:01.405 you know how to manage

NOTE Confidence: 0.9538428

00:57:01.405 --> 00:57:03.005 cardiogenic shock, and you're trying

NOTE Confidence: 0.9538428

00:57:03.005 --> 00:57:04.285 your focus, and you're like,

NOTE Confidence: 0.9538428

00:57:04.285 --> 00:57:05.165 am I looking at a

NOTE Confidence: 0.9538428

00:57:05.165 --> 00:57:06.685 MR gradient? What am I

NOTE Confidence: 0.9538428

00:57:06.685 --> 00:57:07.425 looking at?

NOTE Confidence: 0.9557388

00:57:07.890 --> 00:57:09.329 I just simply remember second

NOTE Confidence: 0.9557388

00:57:09.329 --> 00:57:10.529 year calling one of my

NOTE Confidence: 0.9557388

00:57:10.529 --> 00:57:11.569 attendings and being like, no,

NOTE Confidence: 0.9557388

00:57:11.569 --> 00:57:12.849 no, that's the MR gradient.

NOTE Confidence: 0.9557388

00:57:12.849 --> 00:57:14.150 Stop doing what you're doing.

NOTE Confidence: 0.9557388

00:57:14.369 --> 00:57:14.770 So,

NOTE Confidence: 0.9971383

00:57:15.250 --> 00:57:16.450 you know, that's that's why

NOTE Confidence: 0.9971383

00:57:16.450 --> 00:57:18.069 we added that piece of

NOTE Confidence: 0.9000183

00:57:18.529 --> 00:57:20.150 struggling a little bit more

NOTE Confidence: 0.9000183

00:57:20.295 --> 00:57:21.035 Thank you. In

NOTE Confidence: 0.86188424

00:57:21.335 --> 00:57:22.615 the lab. Yeah. That was

NOTE Confidence: 0.86188424

00:57:22.615 --> 00:57:23.434 great, Divya.

NOTE Confidence: 0.99278736

00:57:24.055 --> 00:57:25.655 So the patient was started

NOTE Confidence: 0.99278736

00:57:25.655 --> 00:57:26.395 on metoprolol

NOTE Confidence: 0.9245318

00:57:27.335 --> 00:57:28.875 because we all use metoprolol.

NOTE Confidence: 0.9842263

00:57:29.655 --> 00:57:30.155 So

NOTE Confidence: 0.9857356

00:57:30.934 --> 00:57:32.714 any thoughts about using

NOTE Confidence: 0.9968632

00:57:33.174 --> 00:57:34.694 those beta blockers that may

NOTE Confidence: 0.9968632

00:57:34.694 --> 00:57:35.194 reduce

NOTE Confidence: 0.92053765

00:57:35.610 --> 00:57:36.910 beta adrenergic receptors,

NOTE Confidence: 0.8794115

00:57:37.530 --> 00:57:38.990 I. E. Those with intrinsic

NOTE Confidence: 0.54740924

00:57:39.770 --> 00:57:40.270 sympatomeimetic

NOTE Confidence: 0.734357

00:57:40.890 --> 00:57:41.390 activity?

NOTE Confidence: 0.9955959

00:57:41.850 --> 00:57:43.050 And is there any data

NOTE Confidence: 0.9955959

00:57:43.050 --> 00:57:44.170 about that? Is this something

NOTE Confidence: 0.9955959

00:57:44.170 --> 00:57:45.230 that should be studied?

NOTE Confidence: 0.9364276

00:57:48.095 --> 00:57:49.214 I certainly think it would

NOTE Confidence: 0.9364276

00:57:49.214 --> 00:57:51.135 be interesting to study that,

NOTE Confidence: 0.9364276

00:57:51.135 --> 00:57:53.075 especially given what doctor Velasquez

NOTE Confidence: 0.9364276

00:57:53.295 --> 00:57:54.414 was hinting at with the

NOTE Confidence: 0.9364276

00:57:54.414 --> 00:57:54.914 catamaranergic

NOTE Confidence: 0.83969986

00:57:55.615 --> 00:57:57.555 surge that happens in Takacsudocardiography

NOTE Confidence: 0.98271394

00:57:58.414 --> 00:57:59.375 as one of the proposed

NOTE Confidence: 0.98271394

00:57:59.375 --> 00:57:59.875 mechanisms.

NOTE Confidence: 0.93692476

00:58:01.055 --> 00:58:01.934 I will say that I

NOTE Confidence: 0.93692476

00:58:01.934 --> 00:58:03.740 think that decision was more

NOTE Confidence: 0.93692476

00:58:03.740 --> 00:58:05.339 informed just by, you know,

NOTE Confidence: 0.93692476

00:58:05.339 --> 00:58:06.460 the evidence we have for

NOTE Confidence: 0.93692476

00:58:06.460 --> 00:58:08.560 guideline directed medical therapy, metoprolol

NOTE Confidence: 0.93692476

00:58:08.619 --> 00:58:10.160 succinate being one of those,

NOTE Confidence: 0.9986992

00:58:10.540 --> 00:58:11.339 but I think that would

NOTE Confidence: 0.9986992

00:58:11.339 --> 00:58:13.119 be very interesting to explore.

NOTE Confidence: 0.9915603

00:58:16.855 --> 00:58:17.335 So,

NOTE Confidence: 0.9525219

00:58:17.815 --> 00:58:19.595 that was an awesome presentation,

NOTE Confidence: 0.9569262

00:58:19.975 --> 00:58:20.475 and,

NOTE Confidence: 0.99963653

00:58:21.015 --> 00:58:22.075 again, congratulations

NOTE Confidence: 0.9992399

00:58:22.535 --> 00:58:24.375 on managing the case. I

NOTE Confidence: 0.9992399

00:58:24.375 --> 00:58:25.115 would never

NOTE Confidence: 0.99960536

00:58:26.135 --> 00:58:27.355 suggest that

NOTE Confidence: 0.9985606

00:58:27.655 --> 00:58:28.155 the

NOTE Confidence: 0.9998833

00:58:28.650 --> 00:58:29.150 positive

NOTE Confidence: 0.9761072

00:58:29.450 --> 00:58:31.530 outcome was luck. I would

NOTE Confidence: 0.9761072

00:58:31.530 --> 00:58:32.829 not wanna say that.

NOTE Confidence: 0.97403294

00:58:34.410 --> 00:58:36.170 But maybe a little bit

NOTE Confidence: 0.97403294

00:58:36.410 --> 00:58:37.530 you know, we've all seen

NOTE Confidence: 0.97403294

00:58:37.530 --> 00:58:38.890 a range of stress induced

NOTE Confidence: 0.97403294

00:58:38.890 --> 00:58:39.390 cardiomyopathy.

NOTE Confidence: 0.9996884

00:58:40.170 --> 00:58:40.910 Some people

NOTE Confidence: 0.98776984

00:58:41.289 --> 00:58:42.349 recover quickly,

NOTE Confidence: 0.9979053

00:58:42.970 --> 00:58:43.950 which I would

NOTE Confidence: 0.9982251

00:58:44.415 --> 00:58:45.715 suggest that this person

NOTE Confidence: 0.97026473

00:58:46.415 --> 00:58:48.095 recovered quickly from their stress

NOTE Confidence: 0.97026473

00:58:48.095 --> 00:58:48.995 induced cardiomyopathy.

NOTE Confidence: 0.9814735

00:58:49.535 --> 00:58:50.975 Some, it takes much longer.

NOTE Confidence: 0.9814735

00:58:50.975 --> 00:58:52.095 We've seen I've seen people

NOTE Confidence: 0.9814735

00:58:52.095 --> 00:58:53.155 in the neuro ICU

NOTE Confidence: 0.9989429

00:58:53.695 --> 00:58:55.695 that have had extremely low

NOTE Confidence: 0.9989429

00:58:55.695 --> 00:58:57.235 cardiac outputs for

NOTE Confidence: 0.9592508

00:58:58.440 --> 00:58:59.420 weeks, actually.

NOTE Confidence: 0.99963874

00:59:00.119 --> 00:59:01.980 And the problem here was

NOTE Confidence: 0.95030785

00:59:02.680 --> 00:59:04.200 that that this patient had

NOTE Confidence: 0.95030785

00:59:04.200 --> 00:59:05.880 a a fixed cardiac output,

NOTE Confidence: 0.95030785

00:59:05.880 --> 00:59:06.380 right,

NOTE Confidence: 0.9827709

00:59:07.000 --> 00:59:08.839 because of the outflow obstruction.

NOTE Confidence: 0.9827709

00:59:08.839 --> 00:59:10.300 It's like taking somebody with

NOTE Confidence: 0.9836601

00:59:10.875 --> 00:59:12.715 really critical AS and thinking,

NOTE Confidence: 0.9836601

00:59:12.715 --> 00:59:13.995 what can I do to

NOTE Confidence: 0.9836601

00:59:13.995 --> 00:59:15.355 help their cardiac output? And

NOTE Confidence: 0.9836601

00:59:15.355 --> 00:59:16.475 you have to relieve the

NOTE Confidence: 0.9836601

00:59:16.475 --> 00:59:16.975 obstruction.

NOTE Confidence: 0.99173564

00:59:17.595 --> 00:59:18.475 So in this case, I

NOTE Confidence: 0.99173564

00:59:18.475 --> 00:59:20.075 think the obstruction got better

NOTE Confidence: 0.99173564

00:59:20.075 --> 00:59:20.575 because

NOTE Confidence: 0.8915533

00:59:21.115 --> 00:59:22.815 the wall stress has improved

NOTE Confidence: 0.8915533

00:59:22.955 --> 00:59:25.135 and the stress induced cardiomyopathy,

NOTE Confidence: 0.9964541

00:59:26.589 --> 00:59:28.530 got better. I'm I'm wondering

NOTE Confidence: 0.99010646

00:59:28.869 --> 00:59:30.349 this is long winded, but

NOTE Confidence: 0.99010646

00:59:30.349 --> 00:59:31.010 I'm wondering

NOTE Confidence: 0.99236727

00:59:31.550 --> 00:59:32.670 if this was a big

NOTE Confidence: 0.99236727

00:59:32.670 --> 00:59:33.170 enough

NOTE Confidence: 0.9984422

00:59:33.790 --> 00:59:35.089 phenotypic subtype

NOTE Confidence: 0.9488119

00:59:35.630 --> 00:59:37.150 and some of these people

NOTE Confidence: 0.9488119

00:59:37.150 --> 00:59:39.150 actually didn't do well, did

NOTE Confidence: 0.9488119

00:59:39.150 --> 00:59:40.755 very poorly. Because as you

NOTE Confidence: 0.9488119

00:59:40.914 --> 00:59:42.214 as as you and Carlos

NOTE Confidence: 0.9488119

00:59:42.275 --> 00:59:43.634 correctly pointed out, there are

NOTE Confidence: 0.9488119

00:59:43.634 --> 00:59:44.835 very few of the usual

NOTE Confidence: 0.9488119

00:59:44.835 --> 00:59:46.375 maneuvers are gonna be helpful

NOTE Confidence: 0.9488119

00:59:46.674 --> 00:59:47.575 in this setting.

NOTE Confidence: 0.92287666

00:59:47.954 --> 00:59:49.555 Is I wonder if you'd

NOTE Confidence: 0.92287666

00:59:49.555 --> 00:59:51.015 even have to think about

NOTE Confidence: 0.9995585

00:59:51.555 --> 00:59:53.095 acute measures to

NOTE Confidence: 0.97702444

00:59:53.400 --> 00:59:55.240 relieve the obstruction somehow, and

NOTE Confidence: 0.97702444

00:59:55.240 --> 00:59:56.359 I have no idea what

NOTE Confidence: 0.97702444

00:59:56.359 --> 00:59:57.559 those would be. I mean,

NOTE Confidence: 0.97702444

00:59:57.559 --> 00:59:58.359 I don't think you're gonna

NOTE Confidence: 0.97702444

00:59:58.359 --> 01:00:00.599 do septal ethanol ablation in

NOTE Confidence: 0.97702444

01:00:00.599 --> 01:00:01.799 a patient in shock. You

NOTE Confidence: 0.97702444

01:00:01.799 --> 01:00:03.640 know? But but something to

NOTE Confidence: 0.97702444

01:00:03.640 --> 01:00:05.240 relieve the obstruction. Any any

NOTE Confidence: 0.97702444

01:00:05.240 --> 01:00:06.460 thoughts from the structuralist

NOTE Confidence: 0.86610585

01:00:06.839 --> 01:00:08.085 about that? Yeah. I think

NOTE Confidence: 0.86610585

01:00:08.085 --> 01:00:10.025 from from from the pharmacologic

NOTE Confidence: 0.93212706

01:00:10.325 --> 01:00:11.765 perspective. So the first thing

NOTE Confidence: 0.93212706

01:00:11.765 --> 01:00:12.645 we did was stop the

NOTE Confidence: 0.93212706

01:00:12.645 --> 01:00:14.505 debutamine. Right? So you're stopping

NOTE Confidence: 0.93212706

01:00:14.565 --> 01:00:15.305 the inotropic.

NOTE Confidence: 0.9934379

01:00:15.925 --> 01:00:16.425 And,

NOTE Confidence: 0.9575205

01:00:16.885 --> 01:00:18.085 we gave, I if I

NOTE Confidence: 0.9575205

01:00:18.085 --> 01:00:19.685 remember correctly, two liters of

NOTE Confidence: 0.9575205

01:00:19.685 --> 01:00:20.185 saline,

NOTE Confidence: 0.91290367

01:00:20.645 --> 01:00:21.465 wide open.

NOTE Confidence: 0.98025614

01:00:22.020 --> 01:00:22.520 And,

NOTE Confidence: 0.9676499

01:00:23.140 --> 01:00:24.180 we were ready to go

NOTE Confidence: 0.9676499

01:00:24.180 --> 01:00:25.940 on NEO, which is just

NOTE Confidence: 0.9676499

01:00:25.940 --> 01:00:26.840 pure alpha.

NOTE Confidence: 0.9781704

01:00:27.140 --> 01:00:28.120 So you're you're you're

NOTE Confidence: 0.99848086

01:00:28.820 --> 01:00:30.600 applying HCM principles

NOTE Confidence: 0.9929501

01:00:31.060 --> 01:00:33.300 into into this. In terms

NOTE Confidence: 0.9929501

01:00:33.300 --> 01:00:34.900 of mechanical relieving of the

NOTE Confidence: 0.9929501

01:00:34.900 --> 01:00:35.400 LVOT,

NOTE Confidence: 0.96565855

01:00:36.075 --> 01:00:37.915 unless you have something across

NOTE Confidence: 0.96565855

01:00:37.915 --> 01:00:39.835 the aortic valve into, like,

NOTE Confidence: 0.96565855

01:00:39.835 --> 01:00:41.375 an and and that's where

NOTE Confidence: 0.96565855

01:00:41.515 --> 01:00:42.335 that's where

NOTE Confidence: 0.94918865

01:00:42.795 --> 01:00:45.055 the non provoking LVOT gradient

NOTE Confidence: 0.94918865

01:00:45.115 --> 01:00:46.955 MCS comes into play, I

NOTE Confidence: 0.94918865

01:00:46.955 --> 01:00:48.015 e, the transvalvular

NOTE Confidence: 0.817739

01:00:48.315 --> 01:00:48.815 pump.

NOTE Confidence: 0.9178503

01:00:49.195 --> 01:00:50.430 I I don't see any

NOTE Confidence: 0.9178503

01:00:50.670 --> 01:00:52.450 quick fix other than that.

NOTE Confidence: 0.9178503

01:00:52.670 --> 01:00:53.869 But I just wanted to

NOTE Confidence: 0.9178503

01:00:53.869 --> 01:00:55.630 ask Nikhil, from the advanced

NOTE Confidence: 0.9178503

01:00:55.630 --> 01:00:56.609 therapies perspective,

NOTE Confidence: 0.9528491

01:00:57.790 --> 01:00:59.230 you know, so this patient

NOTE Confidence: 0.9528491

01:00:59.230 --> 01:01:01.069 recovered relatively quickly, but how

NOTE Confidence: 0.9528491

01:01:01.069 --> 01:01:02.130 long do you wait

NOTE Confidence: 0.46803144

01:01:02.510 --> 01:01:02.670 on

NOTE Confidence: 0.9759282

01:01:03.495 --> 01:01:04.535 to pull the trigger on

NOTE Confidence: 0.9759282

01:01:04.535 --> 01:01:06.615 advanced therapies, and how do

NOTE Confidence: 0.9759282

01:01:06.615 --> 01:01:07.655 you list these patients? I

NOTE Confidence: 0.9759282

01:01:07.655 --> 01:01:08.695 mean, there is no special

NOTE Confidence: 0.9759282

01:01:08.695 --> 01:01:09.195 consideration

NOTE Confidence: 0.9999057

01:01:09.495 --> 01:01:09.995 for

NOTE Confidence: 0.95792603

01:01:10.615 --> 01:01:11.115 for,

NOTE Confidence: 0.77560025

01:01:12.535 --> 01:01:13.035 Takatsubo,

NOTE Confidence: 0.9287938

01:01:13.495 --> 01:01:14.935 or do you list them

NOTE Confidence: 0.9287938

01:01:14.935 --> 01:01:16.535 based on what devices they're

NOTE Confidence: 0.9287938

01:01:16.535 --> 01:01:17.755 on, if they're on any?

NOTE Confidence: 0.8254777

01:01:18.130 --> 01:01:19.670 Yeah. I guess you're referring

NOTE Confidence: 0.8254777

01:01:19.810 --> 01:01:20.930 if the patient doesn't make

NOTE Confidence: 0.8254777

01:01:20.930 --> 01:01:21.810 it out of the hospital

NOTE Confidence: 0.8254777

01:01:21.810 --> 01:01:22.950 or if they do.

NOTE Confidence: 0.95989287

01:01:24.290 --> 01:01:25.170 Yeah. I mean, I I

NOTE Confidence: 0.95989287

01:01:25.170 --> 01:01:27.109 think we would treat them,

NOTE Confidence: 0.9764897

01:01:27.970 --> 01:01:29.090 I guess, two points. One

NOTE Confidence: 0.9764897

01:01:29.090 --> 01:01:29.985 one was, you know, if

NOTE Confidence: 0.9764897

01:01:30.065 --> 01:01:31.025 if this patient is in

NOTE Confidence: 0.9764897

01:01:31.025 --> 01:01:32.565 some kind of shock spiral,

NOTE Confidence: 0.984734

01:01:33.185 --> 01:01:34.305 and we're unable to get

NOTE Confidence: 0.984734

01:01:34.305 --> 01:01:35.105 them out of it with

NOTE Confidence: 0.984734

01:01:35.105 --> 01:01:37.205 medical or MCS interventions,

NOTE Confidence: 0.9612638

01:01:38.145 --> 01:01:39.025 you know, I I think

NOTE Confidence: 0.9612638

01:01:39.025 --> 01:01:41.125 that would become apparent relatively

NOTE Confidence: 0.9612638

01:01:41.265 --> 01:01:43.045 quickly. You know, it may

NOTE Confidence: 0.9422255

01:01:43.350 --> 01:01:44.310 be that a patient like

NOTE Confidence: 0.9422255

01:01:44.310 --> 01:01:45.510 this, you know, in that

NOTE Confidence: 0.9422255

01:01:45.510 --> 01:01:47.110 algorithm that you had nicely

NOTE Confidence: 0.9422255

01:01:47.110 --> 01:01:48.950 created gets escalated to like

NOTE Confidence: 0.9422255

01:01:48.950 --> 01:01:49.850 a VA ECMO.

NOTE Confidence: 0.9830822

01:01:50.150 --> 01:01:51.590 At that point, we usually

NOTE Confidence: 0.9830822

01:01:51.590 --> 01:01:53.430 do start the evaluation process

NOTE Confidence: 0.9830822

01:01:53.430 --> 01:01:54.550 if we think that they

NOTE Confidence: 0.9830822

01:01:54.550 --> 01:01:55.050 are

NOTE Confidence: 0.9711843

01:01:55.905 --> 01:01:57.905 a reasonable candidate for advanced

NOTE Confidence: 0.9711843

01:01:57.905 --> 01:01:58.405 therapies,

NOTE Confidence: 0.94555986

01:01:58.705 --> 01:02:00.945 based on other factors, including

NOTE Confidence: 0.94555986

01:02:00.945 --> 01:02:02.065 their age and and things

NOTE Confidence: 0.94555986

01:02:02.065 --> 01:02:03.745 like that, and and other

NOTE Confidence: 0.94555986

01:02:03.745 --> 01:02:04.245 disease.

NOTE Confidence: 0.9254688

01:02:05.665 --> 01:02:06.865 But I guess and the

NOTE Confidence: 0.9254688

01:02:06.865 --> 01:02:07.825 other point is, you know,

NOTE Confidence: 0.9254688

01:02:07.825 --> 01:02:09.010 we'll we'll talk as an

NOTE Confidence: 0.9254688

01:02:09.010 --> 01:02:09.510 interdisciplinary

NOTE Confidence: 0.9709256

01:02:09.970 --> 01:02:11.270 team. I mean, there are,

NOTE Confidence: 0.9709256

01:02:11.410 --> 01:02:12.790 I guess, to Jeff's point,

NOTE Confidence: 0.9709256

01:02:12.930 --> 01:02:14.790 potential surgical interventions

NOTE Confidence: 0.98065686

01:02:15.170 --> 01:02:16.310 that can relieve,

NOTE Confidence: 0.96292377

01:02:17.650 --> 01:02:19.730 mechanical obstruction. The Mayo Group

NOTE Confidence: 0.96292377

01:02:19.730 --> 01:02:21.330 has published on this in

NOTE Confidence: 0.96292377

01:02:21.330 --> 01:02:22.790 mid cavitary obstruction.

NOTE Confidence: 0.98620147

01:02:23.250 --> 01:02:24.585 There's a subset of HCM

NOTE Confidence: 0.98620147

01:02:24.905 --> 01:02:27.145 patients that have severe mid

NOTE Confidence: 0.98620147

01:02:27.145 --> 01:02:29.065 cavitary obstruction, and using an

NOTE Confidence: 0.98620147

01:02:29.065 --> 01:02:30.585 apical approach, they've been able

NOTE Confidence: 0.98620147

01:02:30.585 --> 01:02:32.045 to surgically relieve that.

NOTE Confidence: 0.96242756

01:02:32.744 --> 01:02:33.785 So if we believe that

NOTE Confidence: 0.96242756

01:02:33.785 --> 01:02:35.145 the single driving force is

NOTE Confidence: 0.96242756

01:02:35.145 --> 01:02:36.365 that ongoing obstruction,

NOTE Confidence: 0.96620876

01:02:37.059 --> 01:02:38.099 in the right, you know,

NOTE Confidence: 0.96620876

01:02:38.099 --> 01:02:39.539 surgical team's hands, there may

NOTE Confidence: 0.96620876

01:02:39.539 --> 01:02:40.660 be an intervention that we

NOTE Confidence: 0.96620876

01:02:40.660 --> 01:02:41.780 could do. But I guess,

NOTE Confidence: 0.96620876

01:02:41.780 --> 01:02:42.920 in answer to your question,

NOTE Confidence: 0.96620876

01:02:42.980 --> 01:02:44.180 you know, it we would

NOTE Confidence: 0.96620876

01:02:44.180 --> 01:02:45.539 probably list them like anybody

NOTE Confidence: 0.96620876

01:02:45.539 --> 01:02:46.500 else. And if they needed

NOTE Confidence: 0.96620876

01:02:46.500 --> 01:02:47.700 MCS, that would mean, you

NOTE Confidence: 0.96620876

01:02:47.700 --> 01:02:49.059 know, status two or status

NOTE Confidence: 0.96620876

01:02:49.059 --> 01:02:49.559 one.

NOTE Confidence: 0.99293905

01:02:50.525 --> 01:02:51.345 I just wanna,

NOTE Confidence: 0.9483617

01:02:51.645 --> 01:02:52.145 clarify.

NOTE Confidence: 0.9762019

01:02:52.525 --> 01:02:54.125 I would say it's not

NOTE Confidence: 0.9762019

01:02:54.125 --> 01:02:55.565 necessarily an apples to apples

NOTE Confidence: 0.9762019

01:02:55.565 --> 01:02:57.005 of saying a fixed obstruction

NOTE Confidence: 0.9762019

01:02:57.005 --> 01:02:57.905 like an AS.

NOTE Confidence: 0.94963676

01:02:58.765 --> 01:02:59.645 So at the time that

NOTE Confidence: 0.94963676

01:02:59.645 --> 01:03:01.165 Carlos did this cath, the

NOTE Confidence: 0.94963676

01:03:01.165 --> 01:03:02.285 patient was on five o

NOTE Confidence: 0.94963676

01:03:02.285 --> 01:03:03.450 debutamine. And so there is

NOTE Confidence: 0.94963676

01:03:03.450 --> 01:03:05.050 definitely, you know, as we

NOTE Confidence: 0.94963676

01:03:05.050 --> 01:03:06.010 see in the top left

NOTE Confidence: 0.94963676

01:03:06.010 --> 01:03:07.210 corner, this is where we're

NOTE Confidence: 0.94963676

01:03:07.210 --> 01:03:09.070 having the obstructions from the

NOTE Confidence: 0.94963676

01:03:09.290 --> 01:03:09.790 hyperdynamic

NOTE Confidence: 0.9030022

01:03:10.090 --> 01:03:11.849 base. And so we were

NOTE Confidence: 0.9030022

01:03:11.849 --> 01:03:13.930 definitely exacerbating it with the

NOTE Confidence: 0.9030022

01:03:13.930 --> 01:03:15.530 dobutamine increase. And that is

NOTE Confidence: 0.9030022

01:03:15.530 --> 01:03:16.650 the that is why we

NOTE Confidence: 0.9030022

01:03:16.650 --> 01:03:17.294 were getting the contradictory, you

NOTE Confidence: 0.9030022

01:03:17.294 --> 01:03:17.434 know, lab results. And that

NOTE Confidence: 0.9030022

01:03:17.434 --> 01:03:17.574 is why we were getting

NOTE Confidence: 0.9030022

01:03:17.574 --> 01:03:17.742 the contradictory, you know, lab

NOTE Confidence: 0.9030022

01:03:17.742 --> 01:03:18.520 results. And that's

NOTE Confidence: 0.9879862

01:03:18.935 --> 01:03:19.595 lab results.

NOTE Confidence: 0.89226

01:03:19.895 --> 01:03:21.015 And that's why we saw

NOTE Confidence: 0.89226

01:03:21.015 --> 01:03:22.215 those findings on this cath

NOTE Confidence: 0.89226

01:03:22.215 --> 01:03:23.415 numbers was on five o

NOTE Confidence: 0.89226

01:03:23.415 --> 01:03:24.215 two b. So a lot

NOTE Confidence: 0.89226

01:03:24.215 --> 01:03:25.655 of it was androgenic and

NOTE Confidence: 0.89226

01:03:25.655 --> 01:03:27.515 was us exacerbating the problem.

NOTE Confidence: 0.89226

01:03:27.655 --> 01:03:28.935 And that's where Carlos has

NOTE Confidence: 0.89226

01:03:28.935 --> 01:03:30.055 thought of doing the LV

NOTE Confidence: 0.89226

01:03:30.055 --> 01:03:30.555 gram

NOTE Confidence: 0.9672188

01:03:31.980 --> 01:03:33.340 and getting that and getting

NOTE Confidence: 0.9672188

01:03:33.340 --> 01:03:34.860 those gradients across the valve

NOTE Confidence: 0.9672188

01:03:34.860 --> 01:03:35.660 showing that this is an

NOTE Confidence: 0.9672188

01:03:35.660 --> 01:03:36.160 obstruction

NOTE Confidence: 0.94251376

01:03:36.620 --> 01:03:38.060 is where it really revealed

NOTE Confidence: 0.94251376

01:03:38.060 --> 01:03:38.700 what we need to do

NOTE Confidence: 0.94251376

01:03:38.700 --> 01:03:39.660 and we need to reverse

NOTE Confidence: 0.94251376

01:03:39.660 --> 01:03:40.860 course, which is what he

NOTE Confidence: 0.94251376

01:03:40.860 --> 01:03:41.360 did.

NOTE Confidence: 0.9162117

01:03:41.740 --> 01:03:43.420 So maybe one last question

NOTE Confidence: 0.9162117

01:03:43.420 --> 01:03:44.540 from Aria, and then we

NOTE Confidence: 0.9162117

01:03:44.540 --> 01:03:45.740 can, close it up. And

NOTE Confidence: 0.7981242

01:03:46.965 --> 01:03:48.405 I mean, I have, actually

NOTE Confidence: 0.7981242

01:03:48.405 --> 01:03:50.585 question here, regarding your dumetamine

NOTE Confidence: 0.7981242

01:03:50.725 --> 01:03:52.405 because initially, actually, improved the

NOTE Confidence: 0.7981242

01:03:52.405 --> 01:03:53.065 blood pressure.

NOTE Confidence: 0.83832055

01:03:53.605 --> 01:03:54.565 When you put the patient

NOTE Confidence: 0.83832055

01:03:54.565 --> 01:03:55.925 up between, it it didn't

NOTE Confidence: 0.83832055

01:03:55.925 --> 01:03:56.965 improve it. And it's very

NOTE Confidence: 0.83832055

01:03:56.965 --> 01:03:58.585 in contrast with IP HCM

NOTE Confidence: 0.83832055

01:03:58.885 --> 01:04:00.990 because HCM patient don't have,

NOTE Confidence: 0.83832055

01:04:00.990 --> 01:04:01.810 you know,

NOTE Confidence: 0.47289982

01:04:02.350 --> 01:04:02.850 gargleone

NOTE Confidence: 0.5628003

01:04:03.230 --> 01:04:03.810 and hypercontractor.

NOTE Confidence: 0.7813032

01:04:05.390 --> 01:04:07.230 So maybe kind of my

NOTE Confidence: 0.84380454

01:04:07.870 --> 01:04:08.850 a little titering

NOTE Confidence: 0.89833194

01:04:09.390 --> 01:04:10.430 may actually help in this

NOTE Confidence: 0.89833194

01:04:10.430 --> 01:04:11.870 case. The second thing is

NOTE Confidence: 0.89833194

01:04:11.870 --> 01:04:13.070 that, Kay, what what Mehran

NOTE Confidence: 0.89833194

01:04:13.070 --> 01:04:14.770 actually mentioned, there are anecdotal

NOTE Confidence: 0.954631

01:04:15.195 --> 01:04:17.775 report that beta adrenergic receptor

NOTE Confidence: 0.954631

01:04:17.915 --> 01:04:19.215 are actually much more

NOTE Confidence: 0.9364138

01:04:19.595 --> 01:04:20.795 present in these patients in

NOTE Confidence: 0.9364138

01:04:20.795 --> 01:04:22.555 the apical region. So the

NOTE Confidence: 0.9364138

01:04:22.555 --> 01:04:24.395 catecholamine is not different. So

NOTE Confidence: 0.9364138

01:04:24.395 --> 01:04:25.355 if you look at the

NOTE Confidence: 0.9364138

01:04:25.355 --> 01:04:26.715 cases where people have been

NOTE Confidence: 0.9364138

01:04:26.715 --> 01:04:28.635 given by mistake adrenaline in

NOTE Confidence: 0.9364138

01:04:28.795 --> 01:04:30.395 by dentist or somebody, there's

NOTE Confidence: 0.9364138

01:04:30.395 --> 01:04:31.470 no basal,

NOTE Confidence: 0.9290375

01:04:32.730 --> 01:04:34.250 kind of preservation of the

NOTE Confidence: 0.9290375

01:04:34.250 --> 01:04:36.410 contraction. They have global. Everything

NOTE Confidence: 0.9290375

01:04:36.410 --> 01:04:37.770 is down. So this is

NOTE Confidence: 0.9290375

01:04:37.770 --> 01:04:39.530 not catecholamine itself, but actually

NOTE Confidence: 0.9290375

01:04:39.530 --> 01:04:40.510 responds to catecholamine.

NOTE Confidence: 0.94609755

01:04:40.890 --> 01:04:41.790 Oh, thank you.

NOTE Confidence: 0.9394744

01:04:43.295 --> 01:04:44.815 Well, I since the hour

NOTE Confidence: 0.9394744

01:04:44.815 --> 01:04:45.935 is at the end,

NOTE Confidence: 0.9826029

01:04:46.335 --> 01:04:47.535 I just wanna end with

NOTE Confidence: 0.9826029

01:04:47.535 --> 01:04:48.975 just a comment about our

NOTE Confidence: 0.9826029

01:04:48.975 --> 01:04:50.655 Wednesday education day and what

NOTE Confidence: 0.9826029

01:04:50.655 --> 01:04:52.495 a phenomenal capstone this is

NOTE Confidence: 0.9826029

01:04:52.495 --> 01:04:54.175 to the educational opportunities for

NOTE Confidence: 0.9826029

01:04:54.175 --> 01:04:55.295 the fellows. I'd like to

NOTE Confidence: 0.9826029

01:04:55.295 --> 01:04:56.815 congratulate the organizing team for

NOTE Confidence: 0.9826029

01:04:56.815 --> 01:04:58.355 putting together this great conference,

NOTE Confidence: 0.9934224

01:04:58.680 --> 01:04:59.339 the mentors

NOTE Confidence: 0.98266965

01:04:59.800 --> 01:05:02.200 for clearly being able to

NOTE Confidence: 0.98266965

01:05:02.200 --> 01:05:04.060 develop this really great discussion,

NOTE Confidence: 0.9601253

01:05:04.839 --> 01:05:05.880 and to Divya. I think

NOTE Confidence: 0.9601253

01:05:05.880 --> 01:05:07.980 there are two divergent audiences

NOTE Confidence: 0.9601253

01:05:08.040 --> 01:05:09.560 here. You have the ninety

NOTE Confidence: 0.9601253

01:05:09.560 --> 01:05:10.599 percent of the audience who

NOTE Confidence: 0.9601253

01:05:10.599 --> 01:05:11.819 thought this was a fantastic

NOTE Confidence: 0.9601253

01:05:11.960 --> 01:05:13.800 and unbelievable presentation and so

NOTE Confidence: 0.9601253

01:05:13.800 --> 01:05:15.215 well presented. And then you

NOTE Confidence: 0.9601253

01:05:15.215 --> 01:05:16.895 have your third year co

NOTE Confidence: 0.9601253

01:05:16.895 --> 01:05:18.035 fellows who are now,

NOTE Confidence: 0.9728759

01:05:18.415 --> 01:05:19.155 a little bit,

NOTE Confidence: 0.97888803

01:05:20.495 --> 01:05:21.535 upset because they have to

NOTE Confidence: 0.97888803

01:05:21.535 --> 01:05:22.655 live up to this bar,

NOTE Confidence: 0.97888803

01:05:22.655 --> 01:05:23.615 but I'm sure they will.

NOTE Confidence: 0.97888803

01:05:23.615 --> 01:05:25.135 So congratulations. We'll see you

NOTE Confidence: 0.97888803

01:05:25.135 --> 01:05:25.635 all.

NOTE Confidence: 0.9402651

01:05:26.430 --> 01:05:26.930 Thank

NOTE Confidence: 0.8614558

01:05:31.069 --> 01:05:31.569 you.

NOTE Confidence: 0.8738188

01:05:32.430 --> 01:05:32.930 Thank

NOTE Confidence: 0.8909039

01:05:35.069 --> 01:05:35.869 you. Thank you. Thank you.

NOTE Confidence: 0.8909039

01:05:35.869 --> 01:05:36.910 Thank you. Thank you. Thank

NOTE Confidence: 0.8909039

01:05:36.910 --> 01:05:38.530 you. Thank you.

NOTE Confidence: 0.7670146

01:05:38.910 --> 01:05:39.569 Thank you.

NOTE Confidence: 0.9616158

01:05:43.694 --> 01:05:45.615 Thank you. Thank you. Thank

NOTE Confidence: 0.9616158

01:05:45.615 --> 01:05:46.734 you so much. I really

NOTE Confidence: 0.9616158

01:05:46.734 --> 01:05:47.714 appreciate it.