

WEBVTT

NOTE duration: "00:57:16.416"

NOTE Confidence: 0.9406173

00:05:55.245 --> 00:05:57.105 Okay. Good afternoon, everybody.

NOTE Confidence: 0.9539167

00:05:59.450 --> 00:06:01.390 Just going through upcoming schedule,

NOTE Confidence: 0.9754936

00:06:01.850 --> 00:06:03.370 some faculty research,

NOTE Confidence: 0.9498937

00:06:03.770 --> 00:06:05.290 meetings coming up. And then,

NOTE Confidence: 0.9498937

00:06:05.450 --> 00:06:07.290 as briefly alluded to, last

NOTE Confidence: 0.9498937

00:06:07.290 --> 00:06:09.130 week, doctor Berkhof is coming

NOTE Confidence: 0.9498937

00:06:09.130 --> 00:06:10.490 in early February, and that'll

NOTE Confidence: 0.9498937

00:06:10.490 --> 00:06:12.589 be the Forrester Lee, CBM

NOTE Confidence: 0.9498937

00:06:12.730 --> 00:06:13.550 Giants lecture.

NOTE Confidence: 0.98747337

00:06:14.195 --> 00:06:15.714 And then doctor Shen will

NOTE Confidence: 0.98747337

00:06:15.714 --> 00:06:17.075 be doing a great structural

NOTE Confidence: 0.98747337

00:06:17.075 --> 00:06:18.515 case conference later in the

NOTE Confidence: 0.98747337

00:06:18.515 --> 00:06:19.015 month.

NOTE Confidence: 0.9447925

00:06:22.595 --> 00:06:23.955 So it's my great pleasure

NOTE Confidence: 0.9447925

00:06:23.955 --> 00:06:25.714 today to introduce doctor Rob
NOTE Confidence: 0.9447925

00:06:25.714 --> 00:06:26.214 Adderan.
NOTE Confidence: 0.9044526

00:06:26.675 --> 00:06:28.115 He is a associate professor
NOTE Confidence: 0.9044526

00:06:28.115 --> 00:06:29.415 of medicine in cardiovascular
NOTE Confidence: 0.99947965

00:06:29.770 --> 00:06:30.990 medicine here at Yale.
NOTE Confidence: 0.98806345

00:06:31.449 --> 00:06:32.490 He is director of the
NOTE Confidence: 0.98806345

00:06:32.490 --> 00:06:35.229 endovascular and interventional cardiology fellow-
ships,
NOTE Confidence: 0.9445082

00:06:35.689 --> 00:06:36.729 and he's a member of
NOTE Confidence: 0.9445082

00:06:36.729 --> 00:06:38.490 the Vascular Disease Council and
NOTE Confidence: 0.9445082

00:06:38.490 --> 00:06:40.729 Publications and Guidelines Committee of
NOTE Confidence: 0.9445082

00:06:40.729 --> 00:06:42.029 the Society of Cardiovascular
NOTE Confidence: 0.99791104

00:06:42.409 --> 00:06:43.789 Angiography and Interventions.
NOTE Confidence: 0.9484081

00:06:44.535 --> 00:06:46.215 Doctor Adiran is chair and
NOTE Confidence: 0.9484081

00:06:46.215 --> 00:06:47.654 lead author of the chronic
NOTE Confidence: 0.9484081

00:06:47.654 --> 00:06:49.654 venous disease guidelines and the
NOTE Confidence: 0.9484081

00:06:49.654 --> 00:06:51.815 Society for cardiac angiography and

NOTE Confidence: 0.9484081

00:06:51.815 --> 00:06:52.315 interventions.

NOTE Confidence: 0.9662514

00:06:52.935 --> 00:06:54.215 He has chaired the early

NOTE Confidence: 0.9662514

00:06:54.215 --> 00:06:56.135 career committee and the of

NOTE Confidence: 0.9662514

00:06:56.135 --> 00:06:57.975 the American Venus Forum from

NOTE Confidence: 0.9662514

00:06:57.975 --> 00:06:59.095 twenty twenty four to the

NOTE Confidence: 0.9662514

00:06:59.095 --> 00:06:59.595 present.

NOTE Confidence: 0.9786983

00:07:00.060 --> 00:07:01.020 He is on the board

NOTE Confidence: 0.9786983

00:07:01.020 --> 00:07:02.380 of the American Board of

NOTE Confidence: 0.9786983

00:07:02.380 --> 00:07:04.000 Venus and Lymphatic Medicine.

NOTE Confidence: 0.98766506

00:07:04.460 --> 00:07:06.140 His research interests include the

NOTE Confidence: 0.98766506

00:07:06.140 --> 00:07:08.000 physiology of venous insufficiency

NOTE Confidence: 0.9982786

00:07:08.540 --> 00:07:09.920 and deep vein obstruction.

NOTE Confidence: 0.9392119

00:07:10.380 --> 00:07:11.260 Please join me in a

NOTE Confidence: 0.9392119

00:07:11.260 --> 00:07:12.700 well in a warm welcome

NOTE Confidence: 0.9392119

00:07:12.700 --> 00:07:13.680 of doctor Adderan.

NOTE Confidence: 0.98312974

00:07:20.764 --> 00:07:21.965 Thank you very much, doctor

NOTE Confidence: 0.98312974

00:07:21.965 --> 00:07:23.104 Clark, and I'm really,

NOTE Confidence: 0.9936235

00:07:23.805 --> 00:07:24.705 really delighted,

NOTE Confidence: 0.99973863

00:07:25.724 --> 00:07:27.405 to be invited to speak

NOTE Confidence: 0.99973863

00:07:27.405 --> 00:07:28.224 here today.

NOTE Confidence: 0.99859405

00:07:30.210 --> 00:07:31.830 I have no disclosures.

NOTE Confidence: 0.9991524

00:07:33.490 --> 00:07:33.990 So

NOTE Confidence: 0.9670531

00:07:35.009 --> 00:07:36.289 as a brief summary, what

NOTE Confidence: 0.9670531

00:07:36.289 --> 00:07:37.090 we hope to do is

NOTE Confidence: 0.9670531

00:07:37.090 --> 00:07:39.409 to introduce chronic venous disease

NOTE Confidence: 0.9670531

00:07:39.409 --> 00:07:40.849 in particular in particular of

NOTE Confidence: 0.9670531

00:07:40.849 --> 00:07:41.970 the of the legs. We'll

NOTE Confidence: 0.9670531

00:07:41.970 --> 00:07:42.930 look a little bit at

NOTE Confidence: 0.9670531

00:07:42.930 --> 00:07:43.590 the pathophysiology.

NOTE Confidence: 0.9802471

00:07:44.645 --> 00:07:45.765 We'll look at some treatment

NOTE Confidence: 0.9802471

00:07:45.765 --> 00:07:46.725 options that are out there
NOTE Confidence: 0.9802471

00:07:46.725 --> 00:07:47.225 now.
NOTE Confidence: 0.96412003

00:07:47.525 --> 00:07:48.325 Look at some of the
NOTE Confidence: 0.96412003

00:07:48.325 --> 00:07:50.245 guidelines and some interesting cases
NOTE Confidence: 0.96412003

00:07:50.245 --> 00:07:51.065 along the way.
NOTE Confidence: 0.989629

00:07:51.685 --> 00:07:53.225 So as it turns out,
NOTE Confidence: 0.9738566

00:07:54.165 --> 00:07:55.705 venous disease and varicosities
NOTE Confidence: 0.9911643

00:07:56.085 --> 00:07:57.785 are not a new phenomenon.
NOTE Confidence: 0.9214466

00:07:58.460 --> 00:07:59.580 As you can see from
NOTE Confidence: 0.9214466

00:07:59.580 --> 00:08:01.260 this bust at the foot
NOTE Confidence: 0.9214466

00:08:01.260 --> 00:08:03.100 of the Acropolis and actually
NOTE Confidence: 0.9214466

00:08:03.100 --> 00:08:05.200 Egyptian papyrus dating back
NOTE Confidence: 0.9698693

00:08:05.900 --> 00:08:07.760 over three thousand years ago
NOTE Confidence: 0.9698693

00:08:07.980 --> 00:08:08.480 describes
NOTE Confidence: 0.99263287

00:08:08.860 --> 00:08:10.875 serpentine windings in the legs.
NOTE Confidence: 0.9845027

00:08:11.275 --> 00:08:12.635 So it's not new. It's

NOTE Confidence: 0.9845027
00:08:12.635 --> 00:08:13.515 been part of the human
NOTE Confidence: 0.9845027
00:08:13.515 --> 00:08:15.055 condition for a long time.
NOTE Confidence: 0.9857555
00:08:15.595 --> 00:08:17.675 And people have tried to
NOTE Confidence: 0.9857555
00:08:17.675 --> 00:08:18.555 treat it for a long
NOTE Confidence: 0.9857555
00:08:18.555 --> 00:08:19.695 time. I look at these
NOTE Confidence: 0.94167805
00:08:20.075 --> 00:08:21.595 kind of rock star ancient
NOTE Confidence: 0.94167805
00:08:21.595 --> 00:08:22.655 physicians, Hippocrates,
NOTE Confidence: 0.9834303
00:08:23.035 --> 00:08:25.195 Celsus, and Galen, and they
NOTE Confidence: 0.9834303
00:08:25.195 --> 00:08:25.695 all
NOTE Confidence: 0.99296397
00:08:26.550 --> 00:08:27.770 treated venous disease.
NOTE Confidence: 0.9991711
00:08:28.470 --> 00:08:30.570 Actually, they noted an association
NOTE Confidence: 0.9741623
00:08:30.950 --> 00:08:32.890 between varicose veins and ulcers
NOTE Confidence: 0.9741623
00:08:32.950 --> 00:08:33.990 for as far back as
NOTE Confidence: 0.9741623
00:08:33.990 --> 00:08:35.610 then, and they actually
NOTE Confidence: 0.99614006
00:08:36.230 --> 00:08:37.210 applied compression.
NOTE Confidence: 0.9168682

00:08:38.070 --> 00:08:38.970 And in fact,
NOTE Confidence: 0.9781798

00:08:39.295 --> 00:08:41.455 Galen was particularly stylish. He
NOTE Confidence: 0.9781798

00:08:41.455 --> 00:08:42.975 would do stripping of the
NOTE Confidence: 0.9781798

00:08:42.975 --> 00:08:44.735 veins and then pour some
NOTE Confidence: 0.9781798

00:08:44.735 --> 00:08:45.955 wine over it afterwards.
NOTE Confidence: 0.933805

00:08:46.655 --> 00:08:48.015 So, a good use of,
NOTE Confidence: 0.933805

00:08:48.175 --> 00:08:49.155 Merlot maybe.
NOTE Confidence: 0.848893

00:08:50.335 --> 00:08:51.315 And then famously,
NOTE Confidence: 0.9344469

00:08:51.695 --> 00:08:53.490 the a very tough man,
NOTE Confidence: 0.9344469

00:08:53.490 --> 00:08:54.949 Roman general and statesman,
NOTE Confidence: 0.9787669

00:08:55.410 --> 00:08:57.570 Gaius Marius, underwent varicose veins
NOTE Confidence: 0.9787669

00:08:57.570 --> 00:08:58.070 surgery
NOTE Confidence: 0.9983694

00:08:59.889 --> 00:09:00.389 during
NOTE Confidence: 0.9764736

00:09:00.929 --> 00:09:02.449 that point in time. And,
NOTE Confidence: 0.9764736

00:09:02.449 --> 00:09:04.050 of course, no anesthesia, no
NOTE Confidence: 0.9764736

00:09:04.050 --> 00:09:05.745 local back then. And he

NOTE Confidence: 0.9764736
00:09:05.745 --> 00:09:07.425 refused surgery to the other
NOTE Confidence: 0.9764736
00:09:07.425 --> 00:09:08.245 leg saying,
NOTE Confidence: 0.9989259
00:09:08.545 --> 00:09:10.065 I see the cure is
NOTE Confidence: 0.9989259
00:09:10.065 --> 00:09:11.285 not worth the pain.
NOTE Confidence: 0.9992934
00:09:13.184 --> 00:09:14.005 Over the years,
NOTE Confidence: 0.9997021
00:09:14.545 --> 00:09:15.765 we have very slowly
NOTE Confidence: 0.9632397
00:09:16.625 --> 00:09:18.145 gained more knowledge. But for
NOTE Confidence: 0.9632397
00:09:18.145 --> 00:09:19.290 a very long time because
NOTE Confidence: 0.9632397
00:09:19.290 --> 00:09:20.410 of the so called humor
NOTE Confidence: 0.9632397
00:09:20.410 --> 00:09:21.690 theory, the thought was that
NOTE Confidence: 0.9632397
00:09:21.690 --> 00:09:22.910 ulcers are allowing
NOTE Confidence: 0.97121793
00:09:23.450 --> 00:09:25.530 evil humors to leave the
NOTE Confidence: 0.97121793
00:09:25.530 --> 00:09:26.570 body. So we did not
NOTE Confidence: 0.97121793
00:09:26.570 --> 00:09:28.250 even think about treating ulcers
NOTE Confidence: 0.97121793
00:09:28.250 --> 00:09:29.950 for many many many centuries.
NOTE Confidence: 0.98681164

00:09:30.490 --> 00:09:32.190 Then by the seventeenth century,
NOTE Confidence: 0.9662696

00:09:32.705 --> 00:09:34.485 the concept of valvular incompetence
NOTE Confidence: 0.9662696

00:09:34.705 --> 00:09:37.025 was noted. The the term
NOTE Confidence: 0.9662696

00:09:37.025 --> 00:09:39.585 varicose ulcer came about. Later
NOTE Confidence: 0.9662696

00:09:39.585 --> 00:09:40.645 on, we appreciated
NOTE Confidence: 0.9557661

00:09:41.025 --> 00:09:42.725 the mechanical theory of venous
NOTE Confidence: 0.8996492

00:09:44.065 --> 00:09:45.365 insufficiency better.
NOTE Confidence: 0.9851544

00:09:45.985 --> 00:09:47.750 We understood the post thrombotic
NOTE Confidence: 0.9851544

00:09:47.890 --> 00:09:49.170 syndrome better, and the term
NOTE Confidence: 0.9851544

00:09:49.170 --> 00:09:51.890 venous ulcer came about. And
NOTE Confidence: 0.9851544

00:09:51.890 --> 00:09:53.429 now in modern times,
NOTE Confidence: 0.99846

00:09:54.770 --> 00:09:56.450 over twenty five million Americans
NOTE Confidence: 0.99846

00:09:56.690 --> 00:09:57.350 in fact,
NOTE Confidence: 0.9655376

00:09:58.130 --> 00:10:00.015 in terms of amount of
NOTE Confidence: 0.9655376

00:10:00.095 --> 00:10:01.635 disease, if you include all
NOTE Confidence: 0.9655376

00:10:01.695 --> 00:10:03.054 forms of it is commoner

NOTE Confidence: 0.9655376

00:10:03.054 --> 00:10:04.735 than PAD, very common as

NOTE Confidence: 0.9655376

00:10:04.735 --> 00:10:06.095 we age. Most of us

NOTE Confidence: 0.9655376

00:10:06.095 --> 00:10:07.855 will have some form of

NOTE Confidence: 0.9655376

00:10:07.855 --> 00:10:09.155 varicose veins, etcetera.

NOTE Confidence: 0.99871534

00:10:09.615 --> 00:10:10.755 And the risk factors

NOTE Confidence: 0.90996766

00:10:11.295 --> 00:10:12.975 are many, but certainly family

NOTE Confidence: 0.90996766

00:10:12.975 --> 00:10:15.155 histories there, multiple pregnancies, obesity,

NOTE Confidence: 0.90996766

00:10:15.215 --> 00:10:15.715 etcetera.

NOTE Confidence: 0.9799886

00:10:16.230 --> 00:10:17.589 And in fact, probably the

NOTE Confidence: 0.9799886

00:10:17.589 --> 00:10:18.950 leading cause of leg ulcers

NOTE Confidence: 0.9799886

00:10:18.950 --> 00:10:19.770 overall is

NOTE Confidence: 0.9810295

00:10:20.149 --> 00:10:21.290 venous hypertension.

NOTE Confidence: 0.952256

00:10:23.270 --> 00:10:25.130 Interestingly, many of our endovascular

NOTE Confidence: 0.952256

00:10:25.429 --> 00:10:26.550 fellows, when they finish the

NOTE Confidence: 0.952256

00:10:26.550 --> 00:10:28.390 fellowship year and they start

NOTE Confidence: 0.952256

00:10:28.390 --> 00:10:30.070 their practice, they email back,
NOTE Confidence: 0.952256

00:10:30.070 --> 00:10:31.209 send help. I
NOTE Confidence: 0.9807502

00:10:31.545 --> 00:10:33.225 underestimated how much venous disease
NOTE Confidence: 0.9807502

00:10:33.225 --> 00:10:34.365 I'll see in my career.
NOTE Confidence: 0.9807502

00:10:34.505 --> 00:10:36.345 So so, what should I
NOTE Confidence: 0.9807502

00:10:36.345 --> 00:10:36.845 do?
NOTE Confidence: 0.99207145

00:10:38.665 --> 00:10:39.804 So very common
NOTE Confidence: 0.99109644

00:10:40.585 --> 00:10:42.365 indeed. If we're to broadly
NOTE Confidence: 0.99109644

00:10:42.585 --> 00:10:43.885 divide up advanced
NOTE Confidence: 0.9684004

00:10:45.020 --> 00:10:46.700 arterial or critical lymph friendly
NOTE Confidence: 0.9684004

00:10:46.700 --> 00:10:49.020 ischemia with venous disease, the
NOTE Confidence: 0.9684004

00:10:49.020 --> 00:10:51.020 ischemia takes a different form.
NOTE Confidence: 0.9684004

00:10:51.020 --> 00:10:52.720 The ulceration's a little different.
NOTE Confidence: 0.9684004

00:10:52.780 --> 00:10:54.400 As you might expect with
NOTE Confidence: 0.9965916

00:10:55.740 --> 00:10:57.440 arterial disease, the ischemia
NOTE Confidence: 0.96807796

00:10:57.900 --> 00:10:59.679 affects the very, very extremities,

NOTE Confidence: 0.9980305

00:11:01.235 --> 00:11:02.375 and there is necrosis.

NOTE Confidence: 0.94985765

00:11:03.315 --> 00:11:04.375 Venous ulcers,

NOTE Confidence: 0.9950875

00:11:04.915 --> 00:11:06.995 for some reason, seem to

NOTE Confidence: 0.9950875

00:11:06.995 --> 00:11:08.695 concentrate around the ankle

NOTE Confidence: 0.966109

00:11:09.235 --> 00:11:10.355 and the lower two thirds

NOTE Confidence: 0.966109

00:11:10.355 --> 00:11:11.575 of the leg area.

NOTE Confidence: 0.9049379

00:11:13.230 --> 00:11:14.850 And the C app classification,

NOTE Confidence: 0.9049379

00:11:15.070 --> 00:11:15.950 this is just the c

NOTE Confidence: 0.9049379

00:11:15.950 --> 00:11:17.709 that I'm showing you, try

NOTE Confidence: 0.9049379

00:11:17.709 --> 00:11:19.390 to put together the gamut

NOTE Confidence: 0.9049379

00:11:19.390 --> 00:11:19.890 of

NOTE Confidence: 0.9988154

00:11:20.589 --> 00:11:22.190 the manifestations that you might

NOTE Confidence: 0.9988154

00:11:22.190 --> 00:11:23.649 see clinically of

NOTE Confidence: 0.95164126

00:11:24.029 --> 00:11:25.230 venous disease. And you can

NOTE Confidence: 0.95164126

00:11:25.230 --> 00:11:26.375 see things such as spider

NOTE Confidence: 0.95164126

00:11:26.375 --> 00:11:27.815 veins, reticular veins that hardly
NOTE Confidence: 0.95164126

00:11:27.815 --> 00:11:30.135 ever bother anybody, flaricose veins
NOTE Confidence: 0.95164126

00:11:30.135 --> 00:11:30.795 that may,
NOTE Confidence: 0.97501844

00:11:31.255 --> 00:11:32.695 and on and on to
NOTE Confidence: 0.97501844

00:11:32.695 --> 00:11:33.195 lipodermatosclerosis
NOTE Confidence: 0.8754656

00:11:33.975 --> 00:11:35.035 with the so called
NOTE Confidence: 0.95990545

00:11:35.575 --> 00:11:37.495 upside down champagne bottle sign
NOTE Confidence: 0.95990545

00:11:37.495 --> 00:11:38.875 and and, ulceration.
NOTE Confidence: 0.99465466

00:11:40.350 --> 00:11:42.429 And one way to describe
NOTE Confidence: 0.99465466

00:11:42.429 --> 00:11:44.350 what may happen in venous
NOTE Confidence: 0.99465466

00:11:44.350 --> 00:11:46.670 insufficiency is is to broadly
NOTE Confidence: 0.99465466

00:11:46.670 --> 00:11:48.610 say that as we stand,
NOTE Confidence: 0.94566447

00:11:49.950 --> 00:11:51.309 our vein pressures start to
NOTE Confidence: 0.94566447

00:11:51.309 --> 00:11:53.175 rise a little faster. And
NOTE Confidence: 0.94566447

00:11:53.175 --> 00:11:54.475 if we have venous insufficiency
NOTE Confidence: 0.94566447

00:11:54.535 --> 00:11:56.075 or ambitative venous hypertension,

NOTE Confidence: 0.98756623

00:11:56.695 --> 00:11:58.295 the walking does help lower

NOTE Confidence: 0.98756623

00:11:58.295 --> 00:11:59.894 the vein pressure. But in

NOTE Confidence: 0.98756623

00:11:59.894 --> 00:12:01.495 those with venous insufficiency, it

NOTE Confidence: 0.98756623

00:12:01.495 --> 00:12:03.175 doesn't drop as much as

NOTE Confidence: 0.98756623

00:12:03.175 --> 00:12:03.915 it should.

NOTE Confidence: 0.9946322

00:12:04.455 --> 00:12:05.415 What we did was put

NOTE Confidence: 0.9946322

00:12:05.415 --> 00:12:06.774 together this graphic in a

NOTE Confidence: 0.9946322

00:12:06.774 --> 00:12:07.675 recent review

NOTE Confidence: 0.95013934

00:12:08.510 --> 00:12:10.429 to describe that really with

NOTE Confidence: 0.95013934

00:12:10.429 --> 00:12:12.190 venous insufficiency, there's not only

NOTE Confidence: 0.95013934

00:12:12.190 --> 00:12:13.710 obstruction in some cases, but

NOTE Confidence: 0.95013934

00:12:13.710 --> 00:12:15.970 reflux and sometimes, frankly, both.

NOTE Confidence: 0.97468793

00:12:16.429 --> 00:12:17.550 And the sum total of

NOTE Confidence: 0.97468793

00:12:17.550 --> 00:12:18.670 that can lead to venous

NOTE Confidence: 0.97468793

00:12:18.670 --> 00:12:20.529 hypertension, and we also added

NOTE Confidence: 0.9856785

00:12:20.910 --> 00:12:22.429 obesity to the mix because
NOTE Confidence: 0.9856785

00:12:22.429 --> 00:12:23.410 that can contribute
NOTE Confidence: 0.91624147

00:12:24.195 --> 00:12:24.934 common problem.
NOTE Confidence: 0.99793214

00:12:25.235 --> 00:12:26.755 And the net effect of
NOTE Confidence: 0.99793214

00:12:26.755 --> 00:12:27.575 that is
NOTE Confidence: 0.9916683

00:12:28.035 --> 00:12:30.675 associated with inflammation, thrombosis, and
NOTE Confidence: 0.9916683

00:12:30.675 --> 00:12:33.015 any treatments that have been
NOTE Confidence: 0.9916683

00:12:33.235 --> 00:12:33.735 attempted
NOTE Confidence: 0.9838395

00:12:34.595 --> 00:12:35.895 are designed to
NOTE Confidence: 0.9993151

00:12:36.380 --> 00:12:37.760 block or mitigate
NOTE Confidence: 0.99836767

00:12:38.140 --> 00:12:39.520 any one of these things
NOTE Confidence: 0.99836767

00:12:39.580 --> 00:12:40.400 that are contributing
NOTE Confidence: 0.99711525

00:12:40.779 --> 00:12:42.059 to the end result of
NOTE Confidence: 0.99711525

00:12:42.059 --> 00:12:44.240 pain, edema, ulcers, etcetera.
NOTE Confidence: 0.9797689

00:12:45.740 --> 00:12:47.660 So very simply, on the
NOTE Confidence: 0.9797689

00:12:47.660 --> 00:12:48.940 left, I'm just showing you

NOTE Confidence: 0.9797689

00:12:48.940 --> 00:12:50.220 some deep veins and some

NOTE Confidence: 0.9797689

00:12:50.220 --> 00:12:51.755 superficial veins. The superficial

NOTE Confidence: 0.98932207

00:12:52.295 --> 00:12:53.655 veins on the right could

NOTE Confidence: 0.98932207

00:12:53.655 --> 00:12:55.175 be, for example, the great

NOTE Confidence: 0.98932207

00:12:55.175 --> 00:12:56.455 saphenous that we'll talk about

NOTE Confidence: 0.98932207

00:12:56.455 --> 00:12:58.475 today. They communicate with perforators

NOTE Confidence: 0.98932207

00:12:58.615 --> 00:12:59.515 and with normal

NOTE Confidence: 0.915177

00:12:59.895 --> 00:13:01.575 vein valve function. The flow

NOTE Confidence: 0.915177

00:13:01.575 --> 00:13:02.955 should be integrate

NOTE Confidence: 0.9217023

00:13:03.415 --> 00:13:04.695 and with the deep veins

NOTE Confidence: 0.9217023

00:13:04.695 --> 00:13:05.515 helped by

NOTE Confidence: 0.7803354

00:13:06.130 --> 00:13:07.589 the cath soleus pump.

NOTE Confidence: 0.9993075

00:13:08.130 --> 00:13:08.949 If there

NOTE Confidence: 0.70123076

00:13:10.130 --> 00:13:11.670 is theinous insufficiency,

NOTE Confidence: 0.9987601

00:13:12.769 --> 00:13:14.230 as you can imagine,

NOTE Confidence: 0.9834351

00:13:16.529 --> 00:13:18.309 there is not that integrate
NOTE Confidence: 0.9834351

00:13:18.449 --> 00:13:19.490 or upward flow that we
NOTE Confidence: 0.9834351

00:13:19.490 --> 00:13:20.690 might expect, and we get
NOTE Confidence: 0.9834351

00:13:20.690 --> 00:13:21.190 that
NOTE Confidence: 0.99655455

00:13:22.184 --> 00:13:22.684 hypertension.
NOTE Confidence: 0.9704682

00:13:24.025 --> 00:13:25.065 There are also a couple
NOTE Confidence: 0.9704682

00:13:25.065 --> 00:13:27.325 of examples here of compression.
NOTE Confidence: 0.9704682

00:13:27.625 --> 00:13:28.905 One classic one that you
NOTE Confidence: 0.9704682

00:13:28.905 --> 00:13:30.025 would have heard about is
NOTE Confidence: 0.9704682

00:13:30.025 --> 00:13:31.465 the the so called non
NOTE Confidence: 0.9704682

00:13:31.465 --> 00:13:33.065 thrombotic lesions or the May
NOTE Confidence: 0.9704682

00:13:33.065 --> 00:13:34.345 Thirner syndrome. And you can
NOTE Confidence: 0.9704682

00:13:34.345 --> 00:13:35.565 see on the
NOTE Confidence: 0.8283485

00:13:37.920 --> 00:13:38.959 you can see my arrow
NOTE Confidence: 0.8283485

00:13:38.959 --> 00:13:39.699 right here,
NOTE Confidence: 0.99502414

00:13:40.720 --> 00:13:42.320 the iliac artery can compress

NOTE Confidence: 0.99502414
00:13:42.320 --> 00:13:43.760 the iliac vein, but compression
NOTE Confidence: 0.99502414
00:13:43.760 --> 00:13:44.660 can happen elsewhere.
NOTE Confidence: 0.98984414
00:13:45.199 --> 00:13:46.399 And the case below, which
NOTE Confidence: 0.98984414
00:13:46.399 --> 00:13:47.199 I won't talk about, but
NOTE Confidence: 0.98984414
00:13:47.199 --> 00:13:48.000 just so you can see,
NOTE Confidence: 0.98984414
00:13:48.000 --> 00:13:49.040 there are many examples of
NOTE Confidence: 0.98984414
00:13:49.040 --> 00:13:50.019 this in our bodies.
NOTE Confidence: 0.96993494
00:13:51.184 --> 00:13:52.465 Spare thought for a man
NOTE Confidence: 0.96993494
00:13:52.465 --> 00:13:53.905 who might have hematuria or
NOTE Confidence: 0.96993494
00:13:53.905 --> 00:13:55.745 flank pain, groin pain, for
NOTE Confidence: 0.96993494
00:13:55.745 --> 00:13:56.945 a woman who gets pain
NOTE Confidence: 0.96993494
00:13:56.945 --> 00:13:58.165 after sexual intercourse
NOTE Confidence: 0.9761013
00:13:58.785 --> 00:13:59.825 and is found to have
NOTE Confidence: 0.9761013
00:13:59.825 --> 00:14:01.665 an engorged left ovarian vein.
NOTE Confidence: 0.9761013
00:14:01.665 --> 00:14:02.625 And in this case, it
NOTE Confidence: 0.9761013

00:14:02.625 --> 00:14:03.365 is because
NOTE Confidence: 0.9869312

00:14:05.420 --> 00:14:07.580 her left ovarian vein, which
NOTE Confidence: 0.9869312

00:14:07.580 --> 00:14:08.480 drains into
NOTE Confidence: 0.9784218

00:14:09.020 --> 00:14:10.380 the left renal vein here,
NOTE Confidence: 0.9784218

00:14:10.380 --> 00:14:11.500 has to pass into the
NOTE Confidence: 0.9784218

00:14:11.500 --> 00:14:12.000 IVC
NOTE Confidence: 0.99052924

00:14:12.620 --> 00:14:13.840 behind the SMA,
NOTE Confidence: 0.93259186

00:14:14.220 --> 00:14:15.360 which in some cases,
NOTE Confidence: 0.9991497

00:14:16.059 --> 00:14:16.559 presses
NOTE Confidence: 0.99902683

00:14:17.065 --> 00:14:17.805 and pinches
NOTE Confidence: 0.97680014

00:14:18.185 --> 00:14:19.305 between the SMA and the
NOTE Confidence: 0.97680014

00:14:19.305 --> 00:14:20.505 aorta. And this is the
NOTE Confidence: 0.97680014

00:14:20.505 --> 00:14:22.445 so called nutcracker syndrome.
NOTE Confidence: 0.9849618

00:14:23.065 --> 00:14:24.345 So there are many ways
NOTE Confidence: 0.9849618

00:14:24.345 --> 00:14:25.465 in which the veins which
NOTE Confidence: 0.9849618

00:14:25.465 --> 00:14:26.905 have lower pressure compared to

NOTE Confidence: 0.9849618
00:14:26.905 --> 00:14:27.565 the arteries
NOTE Confidence: 0.99254686
00:14:27.865 --> 00:14:28.845 can be compressed.
NOTE Confidence: 0.96708536
00:14:29.740 --> 00:14:30.700 And spare a thought for
NOTE Confidence: 0.96708536
00:14:30.700 --> 00:14:32.720 someone who's had a DBT
NOTE Confidence: 0.96708536
00:14:32.780 --> 00:14:34.140 in the past, many of
NOTE Confidence: 0.96708536
00:14:34.140 --> 00:14:35.260 you will have sent patients
NOTE Confidence: 0.96708536
00:14:35.260 --> 00:14:36.140 who had a DBT a
NOTE Confidence: 0.96708536
00:14:36.140 --> 00:14:37.420 year ago for an ultrasound
NOTE Confidence: 0.96708536
00:14:37.420 --> 00:14:38.460 and the report comes back
NOTE Confidence: 0.96708536
00:14:38.460 --> 00:14:40.300 and says chronic thrombus. Well,
NOTE Confidence: 0.96708536
00:14:40.300 --> 00:14:42.000 it's really not thrombus anymore.
NOTE Confidence: 0.9767757
00:14:42.375 --> 00:14:43.735 What they're usually seeing is
NOTE Confidence: 0.9767757
00:14:43.735 --> 00:14:45.735 this, which is very tough
NOTE Confidence: 0.9767757
00:14:45.735 --> 00:14:46.235 leathery
NOTE Confidence: 0.96997607
00:14:46.615 --> 00:14:48.535 type three collagen, which can,
NOTE Confidence: 0.96997607

00:14:48.535 --> 00:14:49.975 of course, cause valve damage

NOTE Confidence: 0.96997607

00:14:49.975 --> 00:14:51.275 and, frankly, obstruction.

NOTE Confidence: 0.99630916

00:14:53.815 --> 00:14:55.435 So we know based on

NOTE Confidence: 0.9982231

00:14:56.170 --> 00:14:58.730 both animal and human studies

NOTE Confidence: 0.9982231

00:14:58.730 --> 00:14:59.230 that

NOTE Confidence: 0.97386014

00:14:59.610 --> 00:15:01.050 with venous hypertension in the

NOTE Confidence: 0.97386014

00:15:01.050 --> 00:15:02.030 limbs, we get

NOTE Confidence: 0.9366431

00:15:02.650 --> 00:15:04.510 inflammation, leukocyte infiltration,

NOTE Confidence: 0.9221556

00:15:05.290 --> 00:15:06.270 matrix metalloproteinase

NOTE Confidence: 0.7233985

00:15:06.970 --> 00:15:07.470 endothelins

NOTE Confidence: 0.82652617

00:15:08.010 --> 00:15:09.710 are over expressed, and MMPs

NOTE Confidence: 0.82652617

00:15:09.770 --> 00:15:10.090 as,

NOTE Confidence: 0.9987149

00:15:10.795 --> 00:15:11.935 the basic science

NOTE Confidence: 0.85646284

00:15:13.595 --> 00:15:14.255 of us,

NOTE Confidence: 0.8816457

00:15:14.635 --> 00:15:16.075 folk among us know degrade

NOTE Confidence: 0.8816457

00:15:16.075 --> 00:15:17.295 collagen and elastin.

NOTE Confidence: 0.9960137
00:15:18.075 --> 00:15:19.615 And they're associated with
NOTE Confidence: 0.8377209
00:15:20.075 --> 00:15:20.575 inflammation.
NOTE Confidence: 0.9912995
00:15:21.835 --> 00:15:23.755 They stimulate fibrosis. So all
NOTE Confidence: 0.9912995
00:15:23.755 --> 00:15:24.895 these have a multiple
NOTE Confidence: 0.96887535
00:15:25.500 --> 00:15:26.940 or a multiplying effect that
NOTE Confidence: 0.96887535
00:15:26.940 --> 00:15:28.220 leads to weakening of the
NOTE Confidence: 0.96887535
00:15:28.220 --> 00:15:29.440 veins and inflammation.
NOTE Confidence: 0.9633707
00:15:30.460 --> 00:15:31.500 And we do know that,
NOTE Confidence: 0.9633707
00:15:31.500 --> 00:15:32.460 actually, if you look at
NOTE Confidence: 0.9633707
00:15:32.460 --> 00:15:33.760 varicose veins histologically,
NOTE Confidence: 0.99793434
00:15:34.460 --> 00:15:36.140 they have lower levels of
NOTE Confidence: 0.99793434
00:15:36.140 --> 00:15:36.640 elastin,
NOTE Confidence: 0.97225237
00:15:37.020 --> 00:15:38.780 laminin, and collagen. So they're
NOTE Confidence: 0.97225237
00:15:38.780 --> 00:15:40.480 less elastic to begin with.
NOTE Confidence: 0.9947324
00:15:41.375 --> 00:15:43.075 And with the increased endothelial
NOTE Confidence: 0.9973672

00:15:43.695 --> 00:15:44.195 permeability,
NOTE Confidence: 0.94373906

00:15:44.815 --> 00:15:46.195 the red cells extravasate,
NOTE Confidence: 0.9984557

00:15:46.575 --> 00:15:47.774 and you get the classic
NOTE Confidence: 0.9984557

00:15:47.774 --> 00:15:48.274 hemosiderin
NOTE Confidence: 0.9990996

00:15:48.975 --> 00:15:50.175 deposition that you see in
NOTE Confidence: 0.9990996

00:15:50.175 --> 00:15:51.235 this image here.
NOTE Confidence: 0.9638726

00:15:53.550 --> 00:15:54.830 And in fact, blood that's
NOTE Confidence: 0.9638726

00:15:54.830 --> 00:15:56.750 collected from from human varicose
NOTE Confidence: 0.9638726

00:15:56.750 --> 00:15:58.450 veins contains more
NOTE Confidence: 0.99861616

00:15:58.910 --> 00:16:01.710 inflammatory markers and lower white
NOTE Confidence: 0.99861616

00:16:01.710 --> 00:16:02.530 blood cells
NOTE Confidence: 0.9053613

00:16:02.910 --> 00:16:04.530 suggesting that they're getting trapped.
NOTE Confidence: 0.9981225

00:16:06.075 --> 00:16:06.575 Clinically,
NOTE Confidence: 0.98770267

00:16:06.955 --> 00:16:08.795 the symptoms are many, but
NOTE Confidence: 0.98770267

00:16:08.795 --> 00:16:09.515 here are some of the
NOTE Confidence: 0.98770267

00:16:09.515 --> 00:16:11.115 classic ones. The aching of

NOTE Confidence: 0.98770267
00:16:11.115 --> 00:16:11.774 the heaviness
NOTE Confidence: 0.9029827
00:16:12.154 --> 00:16:14.015 with PAD will get claudication
NOTE Confidence: 0.93649757
00:16:14.395 --> 00:16:16.235 potentially or night cramps with
NOTE Confidence: 0.93649757
00:16:16.235 --> 00:16:17.595 venous disease. You can certainly
NOTE Confidence: 0.93649757
00:16:17.595 --> 00:16:18.879 get night cramps, but the
NOTE Confidence: 0.93649757
00:16:18.879 --> 00:16:20.240 aching, the heaviness, the itching
NOTE Confidence: 0.93649757
00:16:20.240 --> 00:16:22.240 is very common. Restless legs
NOTE Confidence: 0.93649757
00:16:22.240 --> 00:16:23.839 at night. And, of course,
NOTE Confidence: 0.93649757
00:16:23.839 --> 00:16:24.339 ultimately,
NOTE Confidence: 0.9439344
00:16:25.040 --> 00:16:26.339 ulceration can occur.
NOTE Confidence: 0.99905676
00:16:26.800 --> 00:16:27.300 So
NOTE Confidence: 0.7513454
00:16:28.639 --> 00:16:29.139 interestingly,
NOTE Confidence: 0.9983277
00:16:29.519 --> 00:16:31.120 even though venous disease has
NOTE Confidence: 0.9983277
00:16:31.120 --> 00:16:32.000 been around for a long
NOTE Confidence: 0.9983277
00:16:32.000 --> 00:16:32.500 time,
NOTE Confidence: 0.95442855

00:16:33.505 --> 00:16:34.945 practicing and the study of
NOTE Confidence: 0.95442855

00:16:34.945 --> 00:16:36.065 venous disease is in a
NOTE Confidence: 0.95442855

00:16:36.065 --> 00:16:37.685 way like studying cardiology
NOTE Confidence: 0.96413535

00:16:38.625 --> 00:16:40.065 back in the sixties. There's
NOTE Confidence: 0.96413535

00:16:40.065 --> 00:16:41.445 still yet to be determined.
NOTE Confidence: 0.99956447

00:16:41.985 --> 00:16:43.285 The research
NOTE Confidence: 0.9702929

00:16:44.065 --> 00:16:46.225 devoted to it has lagged
NOTE Confidence: 0.9702929

00:16:46.225 --> 00:16:48.084 behind, I think, even PAD.
NOTE Confidence: 0.9829292

00:16:48.800 --> 00:16:50.660 So that's an interesting opportunity.
NOTE Confidence: 0.9829292

00:16:50.720 --> 00:16:51.540 And in fact,
NOTE Confidence: 0.9654491

00:16:52.320 --> 00:16:53.459 as a group, cardiologists
NOTE Confidence: 0.97763735

00:16:54.160 --> 00:16:56.579 are probably only second nationally
NOTE Confidence: 0.97763735

00:16:56.720 --> 00:16:58.560 to vascular surgeons and the
NOTE Confidence: 0.97763735

00:16:58.560 --> 00:16:59.060 number
NOTE Confidence: 0.96802974

00:16:59.839 --> 00:17:01.940 of vascular procedures, vein ablations,
NOTE Confidence: 0.96802974

00:17:02.000 --> 00:17:03.765 etcetera that are done. And

NOTE Confidence: 0.96802974

00:17:03.765 --> 00:17:04.825 there's a lot of variability

NOTE Confidence: 0.96802974

00:17:04.885 --> 00:17:06.244 or simply lack of knowledge.

NOTE Confidence: 0.96802974

00:17:06.244 --> 00:17:06.744 So

NOTE Confidence: 0.97511876

00:17:07.045 --> 00:17:08.805 a few years ago, we

NOTE Confidence: 0.97511876

00:17:08.805 --> 00:17:10.244 decided to get together with

NOTE Confidence: 0.97511876

00:17:10.244 --> 00:17:11.845 a group through Sky, our

NOTE Confidence: 0.97511876

00:17:11.845 --> 00:17:12.345 society,

NOTE Confidence: 0.9993802

00:17:12.725 --> 00:17:13.705 but it was a

NOTE Confidence: 0.9726371

00:17:15.125 --> 00:17:16.244 document with a lot of

NOTE Confidence: 0.9726371

00:17:16.244 --> 00:17:18.345 help to put together guidelines

NOTE Confidence: 0.9726371

00:17:18.484 --> 00:17:19.225 to assist,

NOTE Confidence: 0.9649272

00:17:19.900 --> 00:17:21.600 clinicians in the care of

NOTE Confidence: 0.9649272

00:17:21.660 --> 00:17:23.500 venous disease. The people who

NOTE Confidence: 0.9649272

00:17:23.500 --> 00:17:24.540 help with this, some were

NOTE Confidence: 0.9649272

00:17:24.540 --> 00:17:26.800 vascular medicine specialists, some were

NOTE Confidence: 0.9649272

00:17:26.859 --> 00:17:27.359 surgeons,
NOTE Confidence: 0.98410535

00:17:28.060 --> 00:17:30.160 some were cardiologists and methodologists.
NOTE Confidence: 0.98410535

00:17:30.300 --> 00:17:31.340 And, of course, to create
NOTE Confidence: 0.98410535

00:17:31.340 --> 00:17:32.540 guidelines, we needed to do
NOTE Confidence: 0.98410535

00:17:32.540 --> 00:17:33.840 a systematic review
NOTE Confidence: 0.97944325

00:17:34.325 --> 00:17:35.845 and a technical review, which
NOTE Confidence: 0.97944325

00:17:35.845 --> 00:17:37.285 we did. It took about
NOTE Confidence: 0.97944325

00:17:37.285 --> 00:17:38.165 two to three years, and
NOTE Confidence: 0.97944325

00:17:38.165 --> 00:17:38.905 it was published,
NOTE Confidence: 0.9877868

00:17:39.285 --> 00:17:40.565 not that long ago. And
NOTE Confidence: 0.9877868

00:17:40.565 --> 00:17:41.865 I just wanna show you
NOTE Confidence: 0.9877868

00:17:42.005 --> 00:17:43.285 some of the guidelines and
NOTE Confidence: 0.9877868

00:17:43.285 --> 00:17:45.065 the basis behind them.
NOTE Confidence: 0.99892825

00:17:45.605 --> 00:17:46.244 So one is
NOTE Confidence: 0.9442746

00:17:47.045 --> 00:17:48.085 and this is the first
NOTE Confidence: 0.9442746

00:17:48.085 --> 00:17:48.984 thing in the guidelines

NOTE Confidence: 0.5835248

00:17:49.285 --> 00:17:49.445 is

NOTE Confidence: 0.986649

00:17:50.220 --> 00:17:52.059 and you remember Hippocrates and

NOTE Confidence: 0.986649

00:17:52.059 --> 00:17:52.880 those guys

NOTE Confidence: 0.9354578

00:17:53.340 --> 00:17:55.039 years ago were using compression

NOTE Confidence: 0.96199507

00:17:55.340 --> 00:17:57.340 for patients with symptomatic varicose

NOTE Confidence: 0.96199507

00:17:57.340 --> 00:17:57.840 veins

NOTE Confidence: 0.9707924

00:17:58.380 --> 00:18:00.240 and or chronic venous insufficiency.

NOTE Confidence: 0.948047

00:18:01.179 --> 00:18:03.020 The panel recommends or suggests

NOTE Confidence: 0.948047

00:18:03.020 --> 00:18:04.539 in this case, compression therapy

NOTE Confidence: 0.948047

00:18:04.539 --> 00:18:06.135 rather than no compression alone.

NOTE Confidence: 0.948047

00:18:06.295 --> 00:18:07.415 You've all heard about no

NOTE Confidence: 0.948047

00:18:07.415 --> 00:18:07.915 compression

NOTE Confidence: 0.97307324

00:18:08.375 --> 00:18:09.275 versus compression

NOTE Confidence: 0.98519963

00:18:09.734 --> 00:18:11.015 and how patients feel about

NOTE Confidence: 0.98519963

00:18:11.015 --> 00:18:11.515 it.

NOTE Confidence: 0.9408594

00:18:12.935 --> 00:18:14.295 Conrad Jobbs, you've heard of
NOTE Confidence: 0.9408594

00:18:14.295 --> 00:18:16.775 Jobbs Stockings, noted that patients
NOTE Confidence: 0.9408594

00:18:16.775 --> 00:18:18.615 with venous insufficiency, when they're
NOTE Confidence: 0.9408594

00:18:18.615 --> 00:18:19.115 submerged
NOTE Confidence: 0.9607334

00:18:20.055 --> 00:18:20.875 in water,
NOTE Confidence: 0.99613476

00:18:21.900 --> 00:18:23.280 say that their legs actually
NOTE Confidence: 0.98810244

00:18:23.740 --> 00:18:24.480 feel better.
NOTE Confidence: 0.95325756

00:18:25.100 --> 00:18:26.640 And the thought was that
NOTE Confidence: 0.95325756

00:18:26.700 --> 00:18:28.400 as you are deeper in,
NOTE Confidence: 0.95325756

00:18:28.540 --> 00:18:30.380 there's greater pressure and that's
NOTE Confidence: 0.95325756

00:18:30.380 --> 00:18:32.619 creating a gradient upwards to
NOTE Confidence: 0.95325756

00:18:32.619 --> 00:18:34.000 perhaps aid with flow.
NOTE Confidence: 0.9700243

00:18:34.615 --> 00:18:35.975 And he thought, and now
NOTE Confidence: 0.9700243

00:18:35.975 --> 00:18:37.835 we are assuming it's related
NOTE Confidence: 0.9561607

00:18:38.135 --> 00:18:40.054 to Laplace and Pascal's laws,
NOTE Confidence: 0.9561607

00:18:40.054 --> 00:18:40.554 that

NOTE Confidence: 0.99482894

00:18:41.015 --> 00:18:42.554 with compression stockings,

NOTE Confidence: 0.96852267

00:18:43.815 --> 00:18:45.015 the radius of the ankle

NOTE Confidence: 0.96852267

00:18:45.015 --> 00:18:46.615 is less than at the

NOTE Confidence: 0.96852267

00:18:46.615 --> 00:18:48.090 calf level. And so you

NOTE Confidence: 0.96852267

00:18:48.090 --> 00:18:49.690 have a greater pressure effect

NOTE Confidence: 0.96852267

00:18:49.690 --> 00:18:50.730 of the ankle than at

NOTE Confidence: 0.96852267

00:18:50.730 --> 00:18:51.770 the calf level, so you

NOTE Confidence: 0.96852267

00:18:51.770 --> 00:18:52.670 get that graduated

NOTE Confidence: 0.9768591

00:18:53.210 --> 00:18:55.070 compression effect. That's the name.

NOTE Confidence: 0.9768591

00:18:55.130 --> 00:18:56.250 So he was really the

NOTE Confidence: 0.9768591

00:18:56.250 --> 00:18:57.550 first person to

NOTE Confidence: 0.9819353

00:18:58.570 --> 00:19:01.210 suggest compression stockings, understanding that

NOTE Confidence: 0.9819353

00:19:01.210 --> 00:19:02.350 they were emulating

NOTE Confidence: 0.95825934

00:19:03.274 --> 00:19:04.654 immersion in water.

NOTE Confidence: 0.9777219

00:19:05.195 --> 00:19:06.955 Now compression stockings do not

NOTE Confidence: 0.9777219

00:19:06.955 --> 00:19:08.794 reduce venous hypertension. If you

NOTE Confidence: 0.9777219

00:19:08.794 --> 00:19:10.234 stand, your vein pressures will

NOTE Confidence: 0.9777219

00:19:10.234 --> 00:19:11.054 rise, but

NOTE Confidence: 0.96466035

00:19:11.515 --> 00:19:13.674 they do reduce interstitial pooling

NOTE Confidence: 0.96466035

00:19:13.674 --> 00:19:15.615 and that is related to

NOTE Confidence: 0.96466035

00:19:15.850 --> 00:19:17.529 better outcomes. So to this

NOTE Confidence: 0.96466035

00:19:17.529 --> 00:19:18.809 day, even all these years

NOTE Confidence: 0.96466035

00:19:18.809 --> 00:19:20.509 later, to this very day,

NOTE Confidence: 0.96466035

00:19:20.649 --> 00:19:21.869 it is still a cornerstone

NOTE Confidence: 0.96466035

00:19:22.009 --> 00:19:22.509 treatment.

NOTE Confidence: 0.9713727

00:19:24.490 --> 00:19:26.330 And it does certainly reduce

NOTE Confidence: 0.9713727

00:19:26.330 --> 00:19:27.450 the rates of ulcer healing

NOTE Confidence: 0.9713727

00:19:27.450 --> 00:19:28.750 and recurrence if you continue

NOTE Confidence: 0.9713727

00:19:28.809 --> 00:19:30.345 to use it. But, of

NOTE Confidence: 0.9713727

00:19:30.345 --> 00:19:31.545 course, the challenges with it,

NOTE Confidence: 0.9713727

00:19:31.545 --> 00:19:32.425 as you would have all

NOTE Confidence: 0.9713727
00:19:32.425 --> 00:19:34.265 seen, are with the elderly,
NOTE Confidence: 0.9713727
00:19:34.265 --> 00:19:35.085 with the obese
NOTE Confidence: 0.8912608
00:19:35.625 --> 00:19:37.804 being able to don or
NOTE Confidence: 0.8912608
00:19:37.865 --> 00:19:39.005 remove these
NOTE Confidence: 0.9760152
00:19:39.465 --> 00:19:40.445 stockings. So
NOTE Confidence: 0.95839596
00:19:40.744 --> 00:19:41.565 some solutions,
NOTE Confidence: 0.9997625
00:19:41.865 --> 00:19:42.445 you can
NOTE Confidence: 0.9334793
00:19:42.750 --> 00:19:43.869 ask your patient to go
NOTE Confidence: 0.9334793
00:19:43.869 --> 00:19:45.070 on Amazon and for about
NOTE Confidence: 0.9334793
00:19:45.070 --> 00:19:45.810 forty dollars,
NOTE Confidence: 0.9529878
00:19:46.190 --> 00:19:47.470 get one of these gadgets,
NOTE Confidence: 0.9529878
00:19:47.470 --> 00:19:49.170 the Donner devices to help
NOTE Confidence: 0.9529878
00:19:49.310 --> 00:19:50.770 put the stockings on,
NOTE Confidence: 0.9609585
00:19:51.390 --> 00:19:52.910 or the little donut device
NOTE Confidence: 0.9609585
00:19:52.910 --> 00:19:54.750 to help unroll it. And
NOTE Confidence: 0.9609585

00:19:54.750 --> 00:19:55.410 it helps
NOTE Confidence: 0.9994623

00:19:55.804 --> 00:19:56.705 to some degree.
NOTE Confidence: 0.98178506

00:19:57.484 --> 00:19:58.945 We can get them the
NOTE Confidence: 0.98178506

00:19:59.164 --> 00:20:00.845 zipper kind, which they like
NOTE Confidence: 0.98178506

00:20:00.845 --> 00:20:02.285 if it fits well. Some
NOTE Confidence: 0.98178506

00:20:02.285 --> 00:20:03.424 of these obviously
NOTE Confidence: 0.89477456

00:20:03.804 --> 00:20:04.625 lose their,
NOTE Confidence: 0.98883057

00:20:06.205 --> 00:20:08.285 ability over time. Velcro is
NOTE Confidence: 0.98883057

00:20:08.285 --> 00:20:10.080 very popular, though expensive.
NOTE Confidence: 0.9372783

00:20:10.460 --> 00:20:11.840 And then on the right,
NOTE Confidence: 0.96832204

00:20:12.460 --> 00:20:13.580 two that you can see
NOTE Confidence: 0.96832204

00:20:13.580 --> 00:20:15.180 here, these are really more
NOTE Confidence: 0.96832204

00:20:15.180 --> 00:20:15.680 reserved
NOTE Confidence: 0.95995325

00:20:16.300 --> 00:20:18.160 for lymphedema patients, but
NOTE Confidence: 0.8868679

00:20:18.700 --> 00:20:21.040 particularly this device here is
NOTE Confidence: 0.9905884

00:20:21.675 --> 00:20:23.355 quite inexpensive. It's really a

NOTE Confidence: 0.9905884
00:20:23.355 --> 00:20:23.855 Velcro
NOTE Confidence: 0.89573
00:20:24.555 --> 00:20:25.595 device that's put on and
NOTE Confidence: 0.89573
00:20:25.595 --> 00:20:26.575 then you can
NOTE Confidence: 0.99736655
00:20:26.955 --> 00:20:27.595 press the
NOTE Confidence: 0.9420742
00:20:28.235 --> 00:20:29.275 you can crank up the
NOTE Confidence: 0.9420742
00:20:29.275 --> 00:20:30.815 pressure, there are air pockets,
NOTE Confidence: 0.9420742
00:20:31.035 --> 00:20:32.075 and then it has a
NOTE Confidence: 0.9420742
00:20:32.075 --> 00:20:33.115 pop up valve. So you
NOTE Confidence: 0.9420742
00:20:33.115 --> 00:20:34.875 cannot mess it up. And,
NOTE Confidence: 0.9420742
00:20:34.955 --> 00:20:36.335 it's very easy to apply.
NOTE Confidence: 0.9420742
00:20:36.570 --> 00:20:37.690 And I think the coolest
NOTE Confidence: 0.9420742
00:20:37.690 --> 00:20:38.889 of all is this device.
NOTE Confidence: 0.9420742
00:20:38.889 --> 00:20:40.029 You've heard of home
NOTE Confidence: 0.9928252
00:20:40.330 --> 00:20:41.929 air pumps, but this is
NOTE Confidence: 0.9928252
00:20:42.090 --> 00:20:43.869 it uses electrical energy
NOTE Confidence: 0.9685003

00:20:44.330 --> 00:20:45.929 that applies to memory metal
NOTE Confidence: 0.9685003

00:20:45.929 --> 00:20:47.630 that heats and the memory
NOTE Confidence: 0.9264381

00:20:48.490 --> 00:20:50.325 metal or the the metal,
NOTE Confidence: 0.9264381

00:20:50.325 --> 00:20:50.965 which is sort of a
NOTE Confidence: 0.9264381

00:20:50.965 --> 00:20:52.585 nitinol alloy, will
NOTE Confidence: 0.9629417

00:20:52.885 --> 00:20:54.405 contract and create a a
NOTE Confidence: 0.9629417

00:20:54.405 --> 00:20:54.905 peristaltic
NOTE Confidence: 0.98514104

00:20:55.365 --> 00:20:56.505 wave that kind
NOTE Confidence: 0.9582067

00:20:56.885 --> 00:20:58.085 of massages the leg. It's
NOTE Confidence: 0.9582067

00:20:58.085 --> 00:20:59.445 like a lymphoidema pump, but
NOTE Confidence: 0.9582067

00:20:59.445 --> 00:21:00.565 you can actually walk around
NOTE Confidence: 0.9582067

00:21:00.565 --> 00:21:02.085 with it. So pretty cool
NOTE Confidence: 0.9582067

00:21:02.085 --> 00:21:03.284 ideas, and they're easy to
NOTE Confidence: 0.9582067

00:21:03.284 --> 00:21:05.409 apply, and they're often available
NOTE Confidence: 0.9582067

00:21:05.409 --> 00:21:05.909 through
NOTE Confidence: 0.9968858

00:21:06.289 --> 00:21:06.789 insurance.

NOTE Confidence: 0.99892217

00:21:07.809 --> 00:21:09.889 Before I continue, any questions

NOTE Confidence: 0.99892217

00:21:09.889 --> 00:21:11.109 or comments about

NOTE Confidence: 0.9818823

00:21:12.130 --> 00:21:13.730 these devices or compression in

NOTE Confidence: 0.9818823

00:21:13.730 --> 00:21:14.230 general?

NOTE Confidence: 0.96286803

00:21:17.505 --> 00:21:18.945 Alright. Wanna show you a

NOTE Confidence: 0.96286803

00:21:18.945 --> 00:21:20.705 couple of interesting articles that

NOTE Confidence: 0.96286803

00:21:20.705 --> 00:21:22.244 have been published about compression.

NOTE Confidence: 0.96286803

00:21:22.304 --> 00:21:23.445 And this one interestingly,

NOTE Confidence: 0.9295164

00:21:24.065 --> 00:21:25.345 really is not about venous

NOTE Confidence: 0.9295164

00:21:25.345 --> 00:21:26.784 patients. This was a single

NOTE Confidence: 0.9295164

00:21:26.784 --> 00:21:28.385 center small study, still made

NOTE Confidence: 0.9295164

00:21:28.385 --> 00:21:29.264 it to the New England

NOTE Confidence: 0.9295164

00:21:29.264 --> 00:21:29.764 Journal.

NOTE Confidence: 0.98036885

00:21:30.160 --> 00:21:31.359 And they took patients who

NOTE Confidence: 0.98036885

00:21:31.359 --> 00:21:32.660 had chronic edema,

NOTE Confidence: 0.9958677

00:21:33.040 --> 00:21:34.660 and they were getting recurrent
NOTE Confidence: 0.9958677

00:21:34.800 --> 00:21:35.300 cellulitis.
NOTE Confidence: 0.9948726

00:21:36.080 --> 00:21:37.359 Most of the edema was
NOTE Confidence: 0.9948726

00:21:37.359 --> 00:21:38.340 due to obesity,
NOTE Confidence: 0.97662693

00:21:38.720 --> 00:21:40.400 not lymphedema, and only a
NOTE Confidence: 0.97662693

00:21:40.400 --> 00:21:42.100 minority had venous hypertension.
NOTE Confidence: 0.99900925

00:21:42.960 --> 00:21:44.500 But the group that received
NOTE Confidence: 0.99964285

00:21:46.045 --> 00:21:47.105 compression therapy
NOTE Confidence: 0.9963687

00:21:47.645 --> 00:21:49.744 had showed a drastic reduction
NOTE Confidence: 0.9963687

00:21:49.805 --> 00:21:52.065 in rates of recurrent cellulitis.
NOTE Confidence: 0.9728043

00:21:53.805 --> 00:21:54.765 So this is, I think,
NOTE Confidence: 0.9728043

00:21:54.765 --> 00:21:55.265 very
NOTE Confidence: 0.9672024

00:21:55.565 --> 00:21:56.765 practical and something that we
NOTE Confidence: 0.9672024

00:21:56.765 --> 00:21:57.565 can apply to a lot
NOTE Confidence: 0.9672024

00:21:57.565 --> 00:21:58.385 of our patients.
NOTE Confidence: 0.9845615

00:22:00.540 --> 00:22:01.600 We also noted,

NOTE Confidence: 0.9998272

00:22:02.299 --> 00:22:02.799 that

NOTE Confidence: 0.9993272

00:22:03.900 --> 00:22:04.880 a lot of practitioners

NOTE Confidence: 0.9990702

00:22:05.340 --> 00:22:06.960 who take care of

NOTE Confidence: 0.97083396

00:22:07.260 --> 00:22:09.020 venous ulcer disease or advanced

NOTE Confidence: 0.97083396

00:22:09.020 --> 00:22:11.179 disease were too afraid to

NOTE Confidence: 0.97083396

00:22:11.179 --> 00:22:11.679 apply

NOTE Confidence: 0.9991209

00:22:11.980 --> 00:22:13.040 compression stockings

NOTE Confidence: 0.99436545

00:22:13.515 --> 00:22:14.715 to their patients because of

NOTE Confidence: 0.99436545

00:22:14.715 --> 00:22:16.155 the theoretical fear that it

NOTE Confidence: 0.99436545

00:22:16.155 --> 00:22:18.415 might cause a cardiac decompensation.

NOTE Confidence: 0.96175283

00:22:19.115 --> 00:22:20.155 This was never borne out

NOTE Confidence: 0.96175283

00:22:20.155 --> 00:22:22.234 by anything. Now we did

NOTE Confidence: 0.96175283

00:22:22.234 --> 00:22:23.435 a study. You could not

NOTE Confidence: 0.96175283

00:22:23.435 --> 00:22:25.195 do a randomized control trial

NOTE Confidence: 0.96175283

00:22:25.195 --> 00:22:26.475 because you would be taking

NOTE Confidence: 0.96175283

00:22:26.475 --> 00:22:27.755 an ulcer patient saying, hey.
NOTE Confidence: 0.96175283

00:22:27.755 --> 00:22:29.115 I'm gonna randomize you to
NOTE Confidence: 0.96175283

00:22:29.115 --> 00:22:30.850 not get the the treatment
NOTE Confidence: 0.96175283

00:22:30.850 --> 00:22:31.809 that you need. But we
NOTE Confidence: 0.96175283

00:22:31.809 --> 00:22:32.850 at least looked at the
NOTE Confidence: 0.96175283

00:22:32.850 --> 00:22:34.050 retrospective data. We looked at
NOTE Confidence: 0.96175283

00:22:34.050 --> 00:22:35.190 the Yale data,
NOTE Confidence: 0.9208128

00:22:35.809 --> 00:22:37.410 and, you can see doctor
NOTE Confidence: 0.9208128

00:22:37.410 --> 00:22:38.690 Ahmad help us with the
NOTE Confidence: 0.9208128

00:22:38.690 --> 00:22:39.190 study.
NOTE Confidence: 0.9989858

00:22:40.369 --> 00:22:41.330 And we looked at the
NOTE Confidence: 0.9989858

00:22:41.330 --> 00:22:43.170 Yale database of patients with
NOTE Confidence: 0.9989858

00:22:43.170 --> 00:22:43.830 heart failure
NOTE Confidence: 0.9495486

00:22:44.615 --> 00:22:46.955 and diastolic dysfunction, low EF,
NOTE Confidence: 0.969923

00:22:47.975 --> 00:22:49.595 who were getting compression therapy.
NOTE Confidence: 0.969923

00:22:49.734 --> 00:22:51.175 And we compared the data

NOTE Confidence: 0.969923
00:22:51.175 --> 00:22:52.775 to historic controls with the
NOTE Confidence: 0.969923
00:22:52.775 --> 00:22:53.515 CHAMP registry.
NOTE Confidence: 0.9775985
00:22:54.215 --> 00:22:55.595 And in summary,
NOTE Confidence: 0.9973072
00:22:55.975 --> 00:22:57.515 the rates of exacerbation
NOTE Confidence: 0.97016084
00:22:57.815 --> 00:22:58.635 with CHF
NOTE Confidence: 0.99141043
00:22:59.590 --> 00:23:01.450 with compression were very low
NOTE Confidence: 0.97495157
00:23:01.990 --> 00:23:03.350 and, in fact, lower than
NOTE Confidence: 0.97495157
00:23:03.350 --> 00:23:05.110 in the CHAMP registry. So
NOTE Confidence: 0.97495157
00:23:05.110 --> 00:23:06.150 there was no signal to
NOTE Confidence: 0.97495157
00:23:06.150 --> 00:23:07.130 suggest that
NOTE Confidence: 0.99492383
00:23:07.430 --> 00:23:08.730 patients would decompensate
NOTE Confidence: 0.9819118
00:23:09.350 --> 00:23:11.130 if you treated them with
NOTE Confidence: 0.9819118
00:23:11.190 --> 00:23:12.330 compression stockings.
NOTE Confidence: 0.99714535
00:23:15.465 --> 00:23:17.304 Our second guideline is that
NOTE Confidence: 0.99714535
00:23:17.304 --> 00:23:18.924 for patients who have symptomatic
NOTE Confidence: 0.94600886

00:23:19.784 --> 00:23:21.164 saphenous vein reflux,
NOTE Confidence: 0.9960094

00:23:21.705 --> 00:23:23.144 that they would benefit from
NOTE Confidence: 0.9960094

00:23:23.144 --> 00:23:24.764 ablation therapy over conservative.
NOTE Confidence: 0.9945242

00:23:25.144 --> 00:23:26.105 And I'll just take a
NOTE Confidence: 0.9945242

00:23:26.105 --> 00:23:27.804 second to describe to you
NOTE Confidence: 0.9945242

00:23:27.919 --> 00:23:29.200 what we're talking about because
NOTE Confidence: 0.9945242

00:23:29.200 --> 00:23:30.260 this is very common.
NOTE Confidence: 0.99934566

00:23:30.799 --> 00:23:31.700 On the
NOTE Confidence: 0.9975997

00:23:32.640 --> 00:23:33.460 left here,
NOTE Confidence: 0.9743872

00:23:33.919 --> 00:23:34.880 you can see some of
NOTE Confidence: 0.9743872

00:23:34.880 --> 00:23:35.779 the deep veins.
NOTE Confidence: 0.98988825

00:23:36.080 --> 00:23:37.859 The great saphenous vein runs
NOTE Confidence: 0.98988825

00:23:37.919 --> 00:23:39.760 medially, the small saphenous in
NOTE Confidence: 0.98988825

00:23:39.760 --> 00:23:40.419 the back.
NOTE Confidence: 0.9789295

00:23:40.945 --> 00:23:41.445 Oftentimes,
NOTE Confidence: 0.98673606

00:23:42.625 --> 00:23:44.225 incompetent valves in the great

NOTE Confidence: 0.98673606

00:23:44.225 --> 00:23:45.744 saphenous vein lead to symptoms.

NOTE Confidence: 0.98673606

00:23:45.744 --> 00:23:46.885 So if you see someone,

NOTE Confidence: 0.98673606

00:23:47.105 --> 00:23:48.225 and I'm sure you've all

NOTE Confidence: 0.98673606

00:23:48.225 --> 00:23:49.585 seen people who have veins

NOTE Confidence: 0.98673606

00:23:49.585 --> 00:23:50.725 that are like this,

NOTE Confidence: 0.9692317

00:23:51.105 --> 00:23:52.005 these varicosities,

NOTE Confidence: 0.98289186

00:23:53.119 --> 00:23:54.480 this is not the you're

NOTE Confidence: 0.98289186

00:23:54.480 --> 00:23:55.359 not looking at the great

NOTE Confidence: 0.98289186

00:23:55.359 --> 00:23:56.960 saphenous vein. The great saphenous

NOTE Confidence: 0.98289186

00:23:56.960 --> 00:23:58.080 vein is underneath. And if

NOTE Confidence: 0.98289186

00:23:58.080 --> 00:23:59.540 you suddenly see a vein

NOTE Confidence: 0.9922927

00:23:59.920 --> 00:24:01.920 protruding out like this, chances

NOTE Confidence: 0.9922927

00:24:01.920 --> 00:24:03.220 are that there's an incompetent

NOTE Confidence: 0.9922927

00:24:03.280 --> 00:24:05.475 saphenous vein immediately underneath that.

NOTE Confidence: 0.9922927

00:24:05.715 --> 00:24:07.715 And that is effectively feeding

NOTE Confidence: 0.9922927

00:24:07.715 --> 00:24:09.715 or dumping into what you
NOTE Confidence: 0.9922927

00:24:09.715 --> 00:24:10.994 see here and leading to
NOTE Confidence: 0.9922927

00:24:10.994 --> 00:24:11.734 the symptoms.
NOTE Confidence: 0.98736435

00:24:13.554 --> 00:24:16.115 To demonstrate that someone has
NOTE Confidence: 0.98736435

00:24:16.115 --> 00:24:18.434 saphenous reflux, a common test
NOTE Confidence: 0.98736435

00:24:18.434 --> 00:24:20.054 is to do a doppler
NOTE Confidence: 0.98736435

00:24:20.115 --> 00:24:20.615 study.
NOTE Confidence: 0.92410403

00:24:21.150 --> 00:24:22.830 And to demonstrate that on
NOTE Confidence: 0.92410403

00:24:22.830 --> 00:24:24.130 the left,
NOTE Confidence: 0.9305659

00:24:25.470 --> 00:24:27.550 we have, if you'll imagine,
NOTE Confidence: 0.9305659

00:24:27.550 --> 00:24:28.990 it's saphenous vein that is
NOTE Confidence: 0.9305659

00:24:28.990 --> 00:24:29.490 incompetent.
NOTE Confidence: 0.99915713

00:24:30.270 --> 00:24:31.650 And we can compress
NOTE Confidence: 0.9686298

00:24:33.150 --> 00:24:34.830 below with either a cuff
NOTE Confidence: 0.9686298

00:24:34.830 --> 00:24:35.730 or by hand
NOTE Confidence: 0.9294117

00:24:36.030 --> 00:24:37.375 to force the blood to

NOTE Confidence: 0.9294117

00:24:37.375 --> 00:24:39.215 move integrate and then suddenly

NOTE Confidence: 0.9294117

00:24:39.215 --> 00:24:40.035 let go.

NOTE Confidence: 0.97671235

00:24:40.655 --> 00:24:42.515 An incompetent valve by definition

NOTE Confidence: 0.97671235

00:24:42.575 --> 00:24:44.255 should snapshot very quickly within

NOTE Confidence: 0.97671235

00:24:44.255 --> 00:24:45.695 half a second. But if

NOTE Confidence: 0.97671235

00:24:45.695 --> 00:24:47.135 it doesn't, there's just a

NOTE Confidence: 0.97671235

00:24:47.135 --> 00:24:48.255 certain period of time when

NOTE Confidence: 0.97671235

00:24:48.255 --> 00:24:49.695 that reflux occurs and it

NOTE Confidence: 0.97671235

00:24:49.695 --> 00:24:52.414 fills that reservoir that's lower

NOTE Confidence: 0.97671235

00:24:52.414 --> 00:24:54.470 down. And the PW that

NOTE Confidence: 0.97671235

00:24:54.470 --> 00:24:55.750 you see here shows an

NOTE Confidence: 0.97671235

00:24:55.750 --> 00:24:57.609 example of reflux. The PW

NOTE Confidence: 0.96315485

00:24:58.389 --> 00:24:59.590 cursor is put on the

NOTE Confidence: 0.96315485

00:24:59.590 --> 00:25:00.950 great saphenous vein or any

NOTE Confidence: 0.96315485

00:25:00.950 --> 00:25:02.330 other vein that you want,

NOTE Confidence: 0.96315485

00:25:02.389 --> 00:25:04.149 and you can compress below
NOTE Confidence: 0.96315485

00:25:04.149 --> 00:25:05.830 the vein and let go.
NOTE Confidence: 0.96315485

00:25:05.830 --> 00:25:07.269 You can see this reverse
NOTE Confidence: 0.96315485

00:25:07.269 --> 00:25:08.795 flow, in this case, lasts
NOTE Confidence: 0.96315485

00:25:08.795 --> 00:25:09.934 over four seconds.
NOTE Confidence: 0.9501008

00:25:11.675 --> 00:25:12.875 So this is an is
NOTE Confidence: 0.9501008

00:25:12.875 --> 00:25:15.275 an incompetent vein, presumably because
NOTE Confidence: 0.9501008

00:25:15.275 --> 00:25:16.335 the vein is dilated.
NOTE Confidence: 0.9727752

00:25:16.955 --> 00:25:18.795 But is a vein that's
NOTE Confidence: 0.9727752

00:25:18.795 --> 00:25:20.734 refluxing for, say, three seconds
NOTE Confidence: 0.9727752

00:25:20.875 --> 00:25:22.975 any healthier than a vein
NOTE Confidence: 0.9727752

00:25:23.035 --> 00:25:23.535 that's
NOTE Confidence: 0.9882619

00:25:23.950 --> 00:25:25.310 refluxing for, I don't know,
NOTE Confidence: 0.9882619

00:25:25.310 --> 00:25:25.810 ten.
NOTE Confidence: 0.9994806

00:25:27.790 --> 00:25:29.330 The idea of insufficiency
NOTE Confidence: 0.9576759

00:25:30.030 --> 00:25:30.830 to all of you who

NOTE Confidence: 0.9576759

00:25:30.830 --> 00:25:32.030 do echo is very different

NOTE Confidence: 0.9576759

00:25:32.030 --> 00:25:33.250 because the heart's pulsatile.

NOTE Confidence: 0.9919522

00:25:33.550 --> 00:25:35.150 You're looking generally at one

NOTE Confidence: 0.9919522

00:25:35.150 --> 00:25:36.750 cycle. With veins, it's a

NOTE Confidence: 0.9919522

00:25:36.750 --> 00:25:37.810 whole different thing.

NOTE Confidence: 0.9578301

00:25:38.735 --> 00:25:40.435 Essentially, the valve is incompetent

NOTE Confidence: 0.9578301

00:25:40.575 --> 00:25:42.015 and it stops leaking when

NOTE Confidence: 0.9578301

00:25:42.015 --> 00:25:43.955 that reservoir has been filled.

NOTE Confidence: 0.99519366

00:25:44.415 --> 00:25:45.695 But there was still this

NOTE Confidence: 0.99519366

00:25:45.695 --> 00:25:46.755 common misconception

NOTE Confidence: 0.9541276

00:25:47.055 --> 00:25:48.655 that the duration of reflux

NOTE Confidence: 0.9541276

00:25:48.655 --> 00:25:49.475 time mattered.

NOTE Confidence: 0.90029496

00:25:49.935 --> 00:25:51.475 And, led by Damianos

NOTE Confidence: 0.91816

00:25:52.039 --> 00:25:53.320 Kokanidis, who was a fellow

NOTE Confidence: 0.91816

00:25:53.320 --> 00:25:54.600 here, is now faculty with

NOTE Confidence: 0.91816

00:25:54.600 --> 00:25:56.299 us, we looked at
NOTE Confidence: 0.97372484

00:25:56.600 --> 00:25:58.600 the correlation between reflux time
NOTE Confidence: 0.97372484

00:25:58.600 --> 00:26:00.440 and venous symptom scores. And
NOTE Confidence: 0.97372484

00:26:00.440 --> 00:26:02.140 in summary, there's no correlation.
NOTE Confidence: 0.97372484

00:26:02.200 --> 00:26:03.640 They're not related. It is
NOTE Confidence: 0.97372484

00:26:03.640 --> 00:26:04.779 not a factor.
NOTE Confidence: 0.9624162

00:26:07.625 --> 00:26:08.825 What we do know is
NOTE Confidence: 0.9624162

00:26:08.825 --> 00:26:10.105 that if you have someone
NOTE Confidence: 0.9624162

00:26:10.105 --> 00:26:11.945 who's symptomatic with the saphenous
NOTE Confidence: 0.9624162

00:26:11.945 --> 00:26:13.645 vein that is incompetent,
NOTE Confidence: 0.9995726

00:26:14.105 --> 00:26:14.605 eliminating
NOTE Confidence: 0.9981565

00:26:16.105 --> 00:26:18.345 that incompetent vein will help
NOTE Confidence: 0.9981565

00:26:18.345 --> 00:26:19.005 the patient
NOTE Confidence: 0.9984387

00:26:19.320 --> 00:26:20.139 feel better
NOTE Confidence: 0.944327

00:26:20.440 --> 00:26:21.559 or it would help to
NOTE Confidence: 0.944327

00:26:21.559 --> 00:26:22.539 heal the ulcer.

NOTE Confidence: 0.97930557

00:26:23.159 --> 00:26:24.119 This has been known for

NOTE Confidence: 0.97930557

00:26:24.119 --> 00:26:25.720 quite some time just that

NOTE Confidence: 0.97930557

00:26:25.720 --> 00:26:27.240 it's been done in some

NOTE Confidence: 0.97930557

00:26:27.240 --> 00:26:28.919 surgical way with some very

NOTE Confidence: 0.97930557

00:26:28.919 --> 00:26:30.940 invasive and morbid procedures.

NOTE Confidence: 0.9739963

00:26:31.480 --> 00:26:32.679 Nowadays, and to some of

NOTE Confidence: 0.9739963

00:26:32.679 --> 00:26:33.720 you who've spent time in

NOTE Confidence: 0.9739963

00:26:33.720 --> 00:26:35.155 the in the clinics with

NOTE Confidence: 0.9739963

00:26:35.155 --> 00:26:36.055 us, we can

NOTE Confidence: 0.9783224

00:26:36.435 --> 00:26:38.435 close down an incompetent vein

NOTE Confidence: 0.9783224

00:26:38.435 --> 00:26:39.955 with a catheter procedure under

NOTE Confidence: 0.9783224

00:26:39.955 --> 00:26:41.555 local. It can either be

NOTE Confidence: 0.9783224

00:26:41.555 --> 00:26:43.315 heat energy with radio frequency

NOTE Confidence: 0.9783224

00:26:43.315 --> 00:26:43.895 or laser

NOTE Confidence: 0.9495851

00:26:44.355 --> 00:26:45.975 or in the middle with

NOTE Confidence: 0.89403105

00:26:47.530 --> 00:26:48.570 what you see the bottom
NOTE Confidence: 0.89403105

00:26:48.570 --> 00:26:49.690 here, this is super glue
NOTE Confidence: 0.89403105

00:26:49.690 --> 00:26:50.430 or cyanoacrylate,
NOTE Confidence: 0.98871946

00:26:51.690 --> 00:26:53.850 or this technology actually invented
NOTE Confidence: 0.98871946

00:26:53.850 --> 00:26:54.350 by,
NOTE Confidence: 0.9547908

00:26:54.890 --> 00:26:56.890 Michael Tall, a former IR
NOTE Confidence: 0.9547908

00:26:56.890 --> 00:26:58.350 professor here at Yale,
NOTE Confidence: 0.9993439

00:26:59.050 --> 00:27:01.310 where the device will spin
NOTE Confidence: 0.904348

00:27:02.625 --> 00:27:04.545 rapidly inside the vein, scraping
NOTE Confidence: 0.904348

00:27:04.545 --> 00:27:06.165 the endothelium while the scleroscent
NOTE Confidence: 0.904348

00:27:06.305 --> 00:27:07.445 is injected slowly,
NOTE Confidence: 0.97282994

00:27:07.905 --> 00:27:09.105 and that will close the
NOTE Confidence: 0.97282994

00:27:09.105 --> 00:27:10.385 vein. Or you can use
NOTE Confidence: 0.97282994

00:27:10.385 --> 00:27:12.305 a sclerosing agent like the
NOTE Confidence: 0.97282994

00:27:12.305 --> 00:27:13.425 bottom right to close the
NOTE Confidence: 0.97282994

00:27:13.425 --> 00:27:14.545 vein down. But the bottom

NOTE Confidence: 0.97282994

00:27:14.545 --> 00:27:16.180 line is that what we've

NOTE Confidence: 0.97282994

00:27:16.180 --> 00:27:17.220 noticed is that if you

NOTE Confidence: 0.97282994

00:27:17.220 --> 00:27:18.980 close down an incompetent saphenous

NOTE Confidence: 0.97282994

00:27:18.980 --> 00:27:20.980 vein and allow effectively for

NOTE Confidence: 0.97282994

00:27:20.980 --> 00:27:22.500 the deep veins to, so

NOTE Confidence: 0.97282994

00:27:22.500 --> 00:27:24.280 to speak, take over, people

NOTE Confidence: 0.99666077

00:27:24.820 --> 00:27:25.560 feel better.

NOTE Confidence: 0.95929116

00:27:26.020 --> 00:27:27.780 And lasers have been around

NOTE Confidence: 0.95929116

00:27:27.780 --> 00:27:28.820 in medicine for a long

NOTE Confidence: 0.95929116

00:27:28.820 --> 00:27:30.734 time in Venus work for

NOTE Confidence: 0.95929116

00:27:30.734 --> 00:27:32.255 over twenty five years and

NOTE Confidence: 0.95929116

00:27:32.255 --> 00:27:34.195 similar with radio frequency ablation.

NOTE Confidence: 0.95929116

00:27:34.494 --> 00:27:36.255 And they have over ninety

NOTE Confidence: 0.95929116

00:27:36.255 --> 00:27:37.855 percent success rate in shutting

NOTE Confidence: 0.95929116

00:27:37.855 --> 00:27:38.815 the vein down. Here's an

NOTE Confidence: 0.95929116

00:27:38.815 --> 00:27:39.315 animal
NOTE Confidence: 0.9270633

00:27:39.855 --> 00:27:40.815 installed I think this is
NOTE Confidence: 0.9270633

00:27:40.815 --> 00:27:42.015 from a goat model where
NOTE Confidence: 0.9270633

00:27:42.015 --> 00:27:43.234 they took a great saphenous
NOTE Confidence: 0.9270633

00:27:43.295 --> 00:27:44.760 vein that you see on
NOTE Confidence: 0.9270633

00:27:44.760 --> 00:27:46.200 the left and they performed
NOTE Confidence: 0.9270633

00:27:46.200 --> 00:27:46.700 radiofrequency
NOTE Confidence: 0.9712535

00:27:47.080 --> 00:27:48.200 ablation. The first thing you
NOTE Confidence: 0.9712535

00:27:48.200 --> 00:27:49.180 notice is
NOTE Confidence: 0.9075661

00:27:49.640 --> 00:27:50.700 that it's venoconstricted,
NOTE Confidence: 0.98410654

00:27:51.160 --> 00:27:52.780 this thrombus, and the endothelium
NOTE Confidence: 0.98410654

00:27:53.000 --> 00:27:53.900 does get denuded.
NOTE Confidence: 0.99959886

00:27:54.520 --> 00:27:55.180 And then
NOTE Confidence: 0.9913457

00:27:56.119 --> 00:27:57.500 over a matter of time,
NOTE Confidence: 0.9913457

00:27:57.744 --> 00:28:00.005 the complete lumen is fibrosed
NOTE Confidence: 0.9913457

00:28:00.225 --> 00:28:01.044 and gone.

NOTE Confidence: 0.99009323
00:28:03.424 --> 00:28:05.024 And one, I think, key
NOTE Confidence: 0.99009323
00:28:05.024 --> 00:28:06.325 trial to show in
NOTE Confidence: 0.9784535
00:28:07.105 --> 00:28:09.044 great saphenous vein or saphenous
NOTE Confidence: 0.9784535
00:28:09.105 --> 00:28:10.705 ablation is the IVRA trial
NOTE Confidence: 0.9784535
00:28:10.705 --> 00:28:11.744 that was published a few
NOTE Confidence: 0.9784535
00:28:11.744 --> 00:28:13.060 years ago. And these are
NOTE Confidence: 0.9784535
00:28:13.060 --> 00:28:15.560 patients with a saphenous reflux
NOTE Confidence: 0.9784535
00:28:15.700 --> 00:28:16.760 and an ulcer,
NOTE Confidence: 0.9985778
00:28:17.540 --> 00:28:18.980 and they were randomized to
NOTE Confidence: 0.9985778
00:28:18.980 --> 00:28:19.880 either compression
NOTE Confidence: 0.99678373
00:28:20.420 --> 00:28:21.720 first or ablation.
NOTE Confidence: 0.99485755
00:28:22.740 --> 00:28:23.859 The lower line that you
NOTE Confidence: 0.99485755
00:28:23.859 --> 00:28:25.140 see is actually the compression
NOTE Confidence: 0.99485755
00:28:25.140 --> 00:28:26.020 group, and this is a
NOTE Confidence: 0.99485755
00:28:26.020 --> 00:28:26.520 follow-up
NOTE Confidence: 0.9974003

00:28:26.900 --> 00:28:27.960 out to a year.
NOTE Confidence: 0.8938217

00:28:28.335 --> 00:28:29.615 And you notice that actually
NOTE Confidence: 0.8938217

00:28:29.615 --> 00:28:30.595 even with compression,
NOTE Confidence: 0.99721503

00:28:31.375 --> 00:28:32.595 people do heal
NOTE Confidence: 0.9994922

00:28:33.135 --> 00:28:33.955 pretty well.
NOTE Confidence: 0.99265975

00:28:34.654 --> 00:28:35.695 The thing that this does
NOTE Confidence: 0.99265975

00:28:35.695 --> 00:28:36.494 not show you is that
NOTE Confidence: 0.99265975

00:28:36.494 --> 00:28:37.934 recurrence rates are higher if
NOTE Confidence: 0.99265975

00:28:37.934 --> 00:28:40.115 you just treat with compression
NOTE Confidence: 0.99265975

00:28:40.174 --> 00:28:41.455 therapy. But if you instead
NOTE Confidence: 0.99265975

00:28:41.455 --> 00:28:42.434 just ablated
NOTE Confidence: 0.9192728

00:28:42.735 --> 00:28:43.960 plus compression, if if you
NOTE Confidence: 0.9192728

00:28:43.960 --> 00:28:45.640 ablated the incompetent saphenous vein,
NOTE Confidence: 0.9192728

00:28:45.640 --> 00:28:46.140 then
NOTE Confidence: 0.9724859

00:28:46.680 --> 00:28:48.120 it heals quicker and the
NOTE Confidence: 0.9724859

00:28:48.120 --> 00:28:49.900 recurrence rates are much lower.

NOTE Confidence: 0.97989184
00:28:50.200 --> 00:28:51.160 And I'll show you some
NOTE Confidence: 0.97989184
00:28:51.160 --> 00:28:52.680 work that's not, we've not
NOTE Confidence: 0.97989184
00:28:52.680 --> 00:28:53.660 shown before
NOTE Confidence: 0.94814754
00:28:54.440 --> 00:28:54.840 that,
NOTE Confidence: 0.96867704
00:28:55.560 --> 00:28:57.080 we're writing up currently. We
NOTE Confidence: 0.96867704
00:28:57.080 --> 00:28:58.140 actually noninvasively
NOTE Confidence: 0.9966214
00:28:58.680 --> 00:28:59.180 measured
NOTE Confidence: 0.9268453
00:28:59.625 --> 00:29:01.405 lower grade saphenous pain pressure
NOTE Confidence: 0.9268453
00:29:01.465 --> 00:29:02.765 in people with incompetence
NOTE Confidence: 0.9437965
00:29:03.305 --> 00:29:05.225 who were undergoing ablation. So
NOTE Confidence: 0.9437965
00:29:05.225 --> 00:29:06.505 we did it beforehand. On
NOTE Confidence: 0.9437965
00:29:06.505 --> 00:29:07.385 the left, you can see
NOTE Confidence: 0.9437965
00:29:07.385 --> 00:29:08.745 their symptoms scores pre and
NOTE Confidence: 0.9437965
00:29:08.745 --> 00:29:09.245 post.
NOTE Confidence: 0.96030015
00:29:09.865 --> 00:29:11.385 And the post was about
NOTE Confidence: 0.96030015

00:29:11.385 --> 00:29:12.690 two months later. You can
NOTE Confidence: 0.96030015

00:29:12.690 --> 00:29:14.049 see that their symptoms scores
NOTE Confidence: 0.96030015

00:29:14.049 --> 00:29:15.090 after an ablation, as you
NOTE Confidence: 0.96030015

00:29:15.090 --> 00:29:16.450 would expect, as we know,
NOTE Confidence: 0.96030015

00:29:16.450 --> 00:29:18.130 get better. But something that's
NOTE Confidence: 0.96030015

00:29:18.130 --> 00:29:19.090 not been known up to
NOTE Confidence: 0.96030015

00:29:19.090 --> 00:29:20.450 now, and we're still collecting
NOTE Confidence: 0.96030015

00:29:20.450 --> 00:29:21.409 this data. I just wanted
NOTE Confidence: 0.96030015

00:29:21.409 --> 00:29:22.549 to show you what we've
NOTE Confidence: 0.96030015

00:29:22.690 --> 00:29:24.309 got is that their saphenous
NOTE Confidence: 0.96030015

00:29:24.370 --> 00:29:25.990 pain pressure after an ablation
NOTE Confidence: 0.99261874

00:29:26.690 --> 00:29:27.190 does
NOTE Confidence: 0.9243326

00:29:27.775 --> 00:29:28.275 fall,
NOTE Confidence: 0.92913055

00:29:28.895 --> 00:29:29.855 there is a trend to
NOTE Confidence: 0.92913055

00:29:29.855 --> 00:29:31.455 a lower GSP pressure, and
NOTE Confidence: 0.92913055

00:29:31.455 --> 00:29:32.434 that's never been,

NOTE Confidence: 0.99922556
00:29:32.975 --> 00:29:34.115 elucidated before.
NOTE Confidence: 0.985126
00:29:36.175 --> 00:29:37.875 Something else that we noticed,
NOTE Confidence: 0.985126
00:29:37.934 --> 00:29:39.215 and this has become less
NOTE Confidence: 0.985126
00:29:39.215 --> 00:29:40.415 of a problem recently, is
NOTE Confidence: 0.985126
00:29:40.415 --> 00:29:40.915 that
NOTE Confidence: 0.9672877
00:29:41.295 --> 00:29:42.570 when you as you would
NOTE Confidence: 0.9672877
00:29:42.570 --> 00:29:43.610 have seen when you book
NOTE Confidence: 0.9672877
00:29:43.610 --> 00:29:45.049 a procedure, sometimes it gets
NOTE Confidence: 0.9672877
00:29:45.049 --> 00:29:46.830 denied by insurance. And we,
NOTE Confidence: 0.9672877
00:29:47.049 --> 00:29:48.110 for many years,
NOTE Confidence: 0.9703116
00:29:48.730 --> 00:29:50.090 would get a denial for
NOTE Confidence: 0.9703116
00:29:50.090 --> 00:29:51.450 an ablation in a perfectly
NOTE Confidence: 0.9703116
00:29:51.450 --> 00:29:52.590 symptomatic patient,
NOTE Confidence: 0.95693076
00:29:53.210 --> 00:29:55.130 and the insurances would cite
NOTE Confidence: 0.95693076
00:29:55.130 --> 00:29:56.675 that the great saphenous vein
NOTE Confidence: 0.95693076

00:29:56.675 --> 00:29:57.955 was too small. Therefore, we're
NOTE Confidence: 0.95693076

00:29:57.955 --> 00:29:59.335 not gonna cover this procedure.
NOTE Confidence: 0.96990985

00:29:59.715 --> 00:30:01.315 So we actually did this,
NOTE Confidence: 0.9718134

00:30:01.955 --> 00:30:03.155 study looking at,
NOTE Confidence: 0.99494785

00:30:03.875 --> 00:30:05.255 patients undergoing ablation
NOTE Confidence: 0.98968136

00:30:05.875 --> 00:30:06.375 prospectively
NOTE Confidence: 0.9700886

00:30:07.155 --> 00:30:08.755 and found that whether their
NOTE Confidence: 0.9700886

00:30:08.755 --> 00:30:10.515 saphenous vein diameter is small
NOTE Confidence: 0.9700886

00:30:10.515 --> 00:30:12.030 or less than five point
NOTE Confidence: 0.9700886

00:30:12.030 --> 00:30:13.390 five or plus five point
NOTE Confidence: 0.9700886

00:30:13.390 --> 00:30:13.890 five,
NOTE Confidence: 0.9708319

00:30:14.750 --> 00:30:17.490 their improvement and their outcomes
NOTE Confidence: 0.9708319

00:30:17.550 --> 00:30:19.710 are the same. And, actually,
NOTE Confidence: 0.9708319

00:30:19.710 --> 00:30:21.150 these days, there is much
NOTE Confidence: 0.9708319

00:30:21.150 --> 00:30:22.850 less of this problem with
NOTE Confidence: 0.9708319

00:30:22.990 --> 00:30:23.970 insurance companies.

NOTE Confidence: 0.9793606
00:30:25.215 --> 00:30:26.735 Some special cases that come
NOTE Confidence: 0.9793606
00:30:26.735 --> 00:30:27.235 up.
NOTE Confidence: 0.998227
00:30:27.615 --> 00:30:29.075 There are times when,
NOTE Confidence: 0.9378966
00:30:30.175 --> 00:30:32.355 I would not suggest we
NOTE Confidence: 0.9378966
00:30:32.415 --> 00:30:34.355 destroy a great saphenous vein.
NOTE Confidence: 0.966052
00:30:34.815 --> 00:30:36.495 A diabetic patient with coronary
NOTE Confidence: 0.966052
00:30:36.495 --> 00:30:37.950 disease who may need that
NOTE Confidence: 0.966052
00:30:38.029 --> 00:30:39.470 for a conduit or a
NOTE Confidence: 0.966052
00:30:39.470 --> 00:30:41.950 PAD patient with advanced arterial
NOTE Confidence: 0.966052
00:30:41.950 --> 00:30:43.230 disease. Unless, of course, the
NOTE Confidence: 0.966052
00:30:43.230 --> 00:30:44.429 vein is so dilated, it
NOTE Confidence: 0.966052
00:30:44.429 --> 00:30:45.990 probably wouldn't be acceptable for
NOTE Confidence: 0.966052
00:30:45.990 --> 00:30:47.630 a conduit either. And the
NOTE Confidence: 0.966052
00:30:47.630 --> 00:30:48.529 other is
NOTE Confidence: 0.9176023
00:30:48.909 --> 00:30:49.570 if they
NOTE Confidence: 0.9884092

00:30:49.870 --> 00:30:51.630 have deep vein obstruction and
NOTE Confidence: 0.9884092

00:30:51.630 --> 00:30:53.149 reflux, what do you treat
NOTE Confidence: 0.9884092

00:30:53.149 --> 00:30:54.525 first? This is an area
NOTE Confidence: 0.9884092

00:30:54.525 --> 00:30:55.905 that's open to discussion.
NOTE Confidence: 0.973163

00:30:57.485 --> 00:30:59.085 Something the patients often ask
NOTE Confidence: 0.973163

00:30:59.085 --> 00:31:01.005 and practitioners is, well, fine.
NOTE Confidence: 0.973163

00:31:01.005 --> 00:31:02.285 You treat these veins, but
NOTE Confidence: 0.973163

00:31:02.285 --> 00:31:03.325 don't they all just come
NOTE Confidence: 0.973163

00:31:03.325 --> 00:31:04.925 back anyway? And there is
NOTE Confidence: 0.973163

00:31:04.925 --> 00:31:05.885 a grain of truth to
NOTE Confidence: 0.973163

00:31:05.885 --> 00:31:07.005 that because it's a chronic
NOTE Confidence: 0.973163

00:31:07.005 --> 00:31:08.625 condition. But specifically
NOTE Confidence: 0.9163516

00:31:08.925 --> 00:31:09.425 for
NOTE Confidence: 0.98798627

00:31:09.730 --> 00:31:11.750 varicose vein recurrence after ablation,
NOTE Confidence: 0.98798627

00:31:11.970 --> 00:31:13.330 some years later, it can
NOTE Confidence: 0.98798627

00:31:13.330 --> 00:31:14.929 recur, but it's only rarely

NOTE Confidence: 0.98798627

00:31:14.929 --> 00:31:16.789 because that saphenous vein opened.

NOTE Confidence: 0.98798627

00:31:16.850 --> 00:31:17.970 That can happen, but it's

NOTE Confidence: 0.98798627

00:31:17.970 --> 00:31:19.570 rare. It could be because

NOTE Confidence: 0.98798627

00:31:19.570 --> 00:31:21.330 you have other veins that

NOTE Confidence: 0.98798627

00:31:21.330 --> 00:31:21.830 are

NOTE Confidence: 0.85023654

00:31:22.289 --> 00:31:22.789 incompetent,

NOTE Confidence: 0.97758067

00:31:23.169 --> 00:31:24.929 have become confident, and you've

NOTE Confidence: 0.97758067

00:31:24.929 --> 00:31:25.545 missed them.

NOTE Confidence: 0.9735527

00:31:26.745 --> 00:31:27.705 So I just wanna show

NOTE Confidence: 0.9735527

00:31:27.705 --> 00:31:29.305 you some cases that you

NOTE Confidence: 0.9735527

00:31:29.305 --> 00:31:30.125 may see,

NOTE Confidence: 0.99007684

00:31:30.665 --> 00:31:31.705 and you may decide to

NOTE Confidence: 0.99007684

00:31:31.705 --> 00:31:32.665 treat them or not, but

NOTE Confidence: 0.99007684

00:31:32.665 --> 00:31:33.465 I just wanted you to

NOTE Confidence: 0.99007684

00:31:33.465 --> 00:31:34.125 see that.

NOTE Confidence: 0.9953294

00:31:34.585 --> 00:31:35.725 And I think
NOTE Confidence: 0.98380554

00:31:36.185 --> 00:31:37.385 I've certainly seen a few
NOTE Confidence: 0.98380554

00:31:37.385 --> 00:31:38.185 of these, and I think
NOTE Confidence: 0.98380554

00:31:38.185 --> 00:31:39.865 you have too. So twenty
NOTE Confidence: 0.98380554

00:31:39.865 --> 00:31:40.845 four year old,
NOTE Confidence: 0.92521876

00:31:41.960 --> 00:31:43.900 active young person, not overweight,
NOTE Confidence: 0.99082214

00:31:44.440 --> 00:31:45.320 and they say, you know,
NOTE Confidence: 0.99082214

00:31:45.320 --> 00:31:46.440 every time they go running
NOTE Confidence: 0.99082214

00:31:46.440 --> 00:31:48.120 or they go skiing, their
NOTE Confidence: 0.99082214

00:31:48.120 --> 00:31:49.880 calf on one side swells
NOTE Confidence: 0.99082214

00:31:49.880 --> 00:31:50.380 up.
NOTE Confidence: 0.9873115

00:31:51.720 --> 00:31:52.520 What do you say to
NOTE Confidence: 0.9873115

00:31:52.520 --> 00:31:53.320 this purse? What are you
NOTE Confidence: 0.9873115

00:31:53.320 --> 00:31:54.460 gonna do for that?
NOTE Confidence: 0.9672165

00:31:59.075 --> 00:32:00.115 So, of course, for me,
NOTE Confidence: 0.9672165

00:32:00.115 --> 00:32:01.335 I may do a reflux

NOTE Confidence: 0.9672165
00:32:01.395 --> 00:32:02.595 study. I may ask them
NOTE Confidence: 0.9672165
00:32:02.595 --> 00:32:03.635 if they've had history of
NOTE Confidence: 0.9672165
00:32:03.635 --> 00:32:05.095 DVT, have they had injuries,
NOTE Confidence: 0.9672165
00:32:05.155 --> 00:32:06.375 all the usual questions.
NOTE Confidence: 0.98390937
00:32:06.755 --> 00:32:07.795 And all of those are
NOTE Confidence: 0.98390937
00:32:07.795 --> 00:32:08.295 negative.
NOTE Confidence: 0.9986071
00:32:09.630 --> 00:32:10.130 Yet
NOTE Confidence: 0.9435941
00:32:10.750 --> 00:32:11.710 and I'll just show you
NOTE Confidence: 0.9435941
00:32:11.710 --> 00:32:12.290 a venogram.
NOTE Confidence: 0.9989007
00:32:12.750 --> 00:32:13.490 Some individuals
NOTE Confidence: 0.9446433
00:32:14.910 --> 00:32:16.030 on the left, you can
NOTE Confidence: 0.9446433
00:32:16.030 --> 00:32:16.530 see
NOTE Confidence: 0.9844169
00:32:16.910 --> 00:32:17.410 flow
NOTE Confidence: 0.9394158
00:32:18.190 --> 00:32:19.890 through the popliteal vein.
NOTE Confidence: 0.97007674
00:32:21.325 --> 00:32:22.385 Look looks open.
NOTE Confidence: 0.9811292

00:32:22.845 --> 00:32:23.885 When you ask them to
NOTE Confidence: 0.9811292

00:32:23.885 --> 00:32:24.385 plantarflex
NOTE Confidence: 0.9469166

00:32:25.245 --> 00:32:26.065 their foot,
NOTE Confidence: 0.9759186

00:32:26.765 --> 00:32:27.665 you will notice
NOTE Confidence: 0.99898905

00:32:29.645 --> 00:32:30.145 that
NOTE Confidence: 0.9726909

00:32:30.765 --> 00:32:32.205 the popliteal vein has become
NOTE Confidence: 0.9726909

00:32:32.205 --> 00:32:33.725 very stenosed. So any clues,
NOTE Confidence: 0.9726909

00:32:33.725 --> 00:32:35.245 fellows, as to what could
NOTE Confidence: 0.9726909

00:32:35.245 --> 00:32:36.145 be going on?
NOTE Confidence: 0.99051

00:32:40.740 --> 00:32:41.700 So when they let go,
NOTE Confidence: 0.99051

00:32:41.700 --> 00:32:42.900 when they relax their leg,
NOTE Confidence: 0.99051

00:32:42.900 --> 00:32:44.100 the vein is good. When
NOTE Confidence: 0.99051

00:32:44.100 --> 00:32:46.120 they flex, there it is.
NOTE Confidence: 0.992292

00:32:46.660 --> 00:32:47.620 And it's on the same
NOTE Confidence: 0.992292

00:32:47.620 --> 00:32:48.660 side where they're getting the
NOTE Confidence: 0.992292

00:32:48.660 --> 00:32:49.780 swelling when they run or

NOTE Confidence: 0.992292

00:32:49.780 --> 00:32:50.680 when they ski.

NOTE Confidence: 0.95912284

00:32:51.845 --> 00:32:52.645 And this is a case

NOTE Confidence: 0.95912284

00:32:52.645 --> 00:32:53.385 of palpito

NOTE Confidence: 0.8754224

00:32:53.765 --> 00:32:54.825 compression syndrome,

NOTE Confidence: 0.9983292

00:32:55.365 --> 00:32:55.865 and

NOTE Confidence: 0.9988435

00:32:56.405 --> 00:32:57.385 it is usually

NOTE Confidence: 0.996935

00:32:57.845 --> 00:32:59.925 compression from the lateral head

NOTE Confidence: 0.996935

00:32:59.925 --> 00:33:01.465 of the gastroc muscle.

NOTE Confidence: 0.9944678

00:33:02.085 --> 00:33:03.785 Now treatment here is

NOTE Confidence: 0.9923116

00:33:04.200 --> 00:33:06.120 controversial. Are you gonna resect

NOTE Confidence: 0.9923116

00:33:06.120 --> 00:33:07.340 the gastroc muscle?

NOTE Confidence: 0.9969628

00:33:08.520 --> 00:33:09.740 Very I think it's

NOTE Confidence: 0.98066247

00:33:10.279 --> 00:33:12.120 very aggressive and unnecessary unless

NOTE Confidence: 0.98066247

00:33:12.120 --> 00:33:13.100 they're having DVTs.

NOTE Confidence: 0.9905885

00:33:13.640 --> 00:33:15.159 Something else that's been tried

NOTE Confidence: 0.9905885

00:33:15.159 --> 00:33:17.000 is to inject Botox into
NOTE Confidence: 0.9905885

00:33:17.000 --> 00:33:18.279 the gastroc head to see
NOTE Confidence: 0.9905885

00:33:18.279 --> 00:33:19.515 if they feel any better.
NOTE Confidence: 0.9905885

00:33:19.515 --> 00:33:20.395 But this is something that
NOTE Confidence: 0.9905885

00:33:20.395 --> 00:33:21.195 you may see, but you
NOTE Confidence: 0.9905885

00:33:21.195 --> 00:33:22.795 may not necessarily want to
NOTE Confidence: 0.9905885

00:33:22.795 --> 00:33:23.295 treat.
NOTE Confidence: 0.9990112

00:33:23.675 --> 00:33:24.955 You just have awareness of
NOTE Confidence: 0.9990112

00:33:24.955 --> 00:33:25.455 it.
NOTE Confidence: 0.97849363

00:33:25.915 --> 00:33:27.995 So moving on, guideline number
NOTE Confidence: 0.97849363

00:33:27.995 --> 00:33:29.355 four is if patients have
NOTE Confidence: 0.97849363

00:33:29.355 --> 00:33:30.815 varicose veins without
NOTE Confidence: 0.98216325

00:33:31.170 --> 00:33:33.010 reflux in their saphenous veins
NOTE Confidence: 0.98216325

00:33:33.010 --> 00:33:34.450 and the varicose veins are
NOTE Confidence: 0.98216325

00:33:34.450 --> 00:33:36.070 hurting or causing a problem,
NOTE Confidence: 0.90881085

00:33:36.610 --> 00:33:37.830 do consider sclerotherapy.

NOTE Confidence: 0.93383306
00:33:38.370 --> 00:33:39.970 And very simply, that is
NOTE Confidence: 0.93383306
00:33:39.970 --> 00:33:41.270 just injection
NOTE Confidence: 0.9960169
00:33:41.650 --> 00:33:43.110 injection of a
NOTE Confidence: 0.97477126
00:33:43.595 --> 00:33:45.435 foam or an agent directly
NOTE Confidence: 0.97477126
00:33:45.435 --> 00:33:46.335 into the vein
NOTE Confidence: 0.98859644
00:33:46.955 --> 00:33:48.795 to shut down the vein.
NOTE Confidence: 0.98859644
00:33:48.795 --> 00:33:49.775 And there is
NOTE Confidence: 0.9905098
00:33:50.075 --> 00:33:51.435 some data to support this,
NOTE Confidence: 0.9905098
00:33:51.435 --> 00:33:52.715 and it is a very
NOTE Confidence: 0.9905098
00:33:52.715 --> 00:33:53.615 common procedure.
NOTE Confidence: 0.94201636
00:33:56.240 --> 00:33:57.600 Now moving on to the
NOTE Confidence: 0.94201636
00:33:57.600 --> 00:33:58.980 deep veins for a second,
NOTE Confidence: 0.94201636
00:33:59.280 --> 00:34:00.960 the guideline panel suggests, and
NOTE Confidence: 0.94201636
00:34:00.960 --> 00:34:01.920 we use the word suggest,
NOTE Confidence: 0.94201636
00:34:01.920 --> 00:34:03.120 not recommend because the data
NOTE Confidence: 0.94201636

00:34:03.120 --> 00:34:05.360 is limited, but stenting the
NOTE Confidence: 0.94201636

00:34:05.360 --> 00:34:07.460 ileal cable segments for symptomatic
NOTE Confidence: 0.94201636

00:34:07.680 --> 00:34:08.180 compression.
NOTE Confidence: 0.9758339

00:34:08.625 --> 00:34:09.665 And, of course, you've heard
NOTE Confidence: 0.9758339

00:34:09.665 --> 00:34:10.945 of the so called May
NOTE Confidence: 0.9758339

00:34:10.945 --> 00:34:12.145 Thurnau syndrome, and I think
NOTE Confidence: 0.9758339

00:34:12.145 --> 00:34:13.745 this shows you very nicely
NOTE Confidence: 0.9758339

00:34:13.745 --> 00:34:15.685 what we're talking about. So
NOTE Confidence: 0.9948539

00:34:16.065 --> 00:34:17.025 in the front, you see
NOTE Confidence: 0.9948539

00:34:17.025 --> 00:34:17.765 the aorta
NOTE Confidence: 0.99396104

00:34:18.385 --> 00:34:19.445 and the iliac
NOTE Confidence: 0.9389585

00:34:19.745 --> 00:34:21.445 arteries, and down we go.
NOTE Confidence: 0.9389585

00:34:21.585 --> 00:34:22.805 And behind it
NOTE Confidence: 0.9876941

00:34:23.260 --> 00:34:24.160 is the IVC
NOTE Confidence: 0.97685224

00:34:24.620 --> 00:34:26.239 and the venous cyst. Now
NOTE Confidence: 0.96899325

00:34:27.900 --> 00:34:29.260 as you classically know, and

NOTE Confidence: 0.96899325

00:34:29.260 --> 00:34:30.700 it's a classic board question,

NOTE Confidence: 0.96899325

00:34:30.700 --> 00:34:32.140 that the right common iliac

NOTE Confidence: 0.96899325

00:34:32.140 --> 00:34:34.460 artery compresses the left common

NOTE Confidence: 0.96899325

00:34:34.460 --> 00:34:35.114 iliac vein because

NOTE Confidence: 0.9646296

00:34:36.715 --> 00:34:37.035 because they're typically offset. So

NOTE Confidence: 0.9646296

00:34:37.035 --> 00:34:38.235 this is the classic site

NOTE Confidence: 0.9646296

00:34:38.235 --> 00:34:39.755 for what you may know

NOTE Confidence: 0.9646296

00:34:39.755 --> 00:34:41.035 as a May Thurner, but

NOTE Confidence: 0.9646296

00:34:41.035 --> 00:34:42.715 actually, the compression can happen

NOTE Confidence: 0.9646296

00:34:42.715 --> 00:34:44.555 anywhere. It can happen between

NOTE Confidence: 0.9646296

00:34:44.555 --> 00:34:46.255 these arteries, the internal external

NOTE Confidence: 0.9646296

00:34:46.315 --> 00:34:46.815 iliac

NOTE Confidence: 0.93561983

00:34:47.114 --> 00:34:48.875 here, and even in other

NOTE Confidence: 0.93561983

00:34:48.875 --> 00:34:49.375 locations.

NOTE Confidence: 0.9836329

00:34:51.210 --> 00:34:52.969 Venograms in these patients don't

NOTE Confidence: 0.9836329

00:34:52.969 --> 00:34:54.570 always look this obvious. Here,
NOTE Confidence: 0.9836329

00:34:54.570 --> 00:34:56.110 you can clearly see
NOTE Confidence: 0.992587

00:34:57.290 --> 00:34:59.050 flattening of this vein and
NOTE Confidence: 0.992587

00:34:59.050 --> 00:35:00.030 lots of collaterals,
NOTE Confidence: 0.9315047

00:35:00.890 --> 00:35:02.170 but doesn't always look like
NOTE Confidence: 0.9315047

00:35:02.170 --> 00:35:03.310 that. It can look pristine.
NOTE Confidence: 0.9315047

00:35:03.370 --> 00:35:04.650 It is only the IVUS
NOTE Confidence: 0.9315047

00:35:04.650 --> 00:35:05.815 that can show you. You.
NOTE Confidence: 0.9315047

00:35:05.815 --> 00:35:06.614 And you can see on
NOTE Confidence: 0.9315047

00:35:06.614 --> 00:35:07.275 the right
NOTE Confidence: 0.95859516

00:35:08.215 --> 00:35:09.735 here, the vein, the IVUS
NOTE Confidence: 0.95859516

00:35:09.735 --> 00:35:11.415 catheter is inside the common
NOTE Confidence: 0.95859516

00:35:11.415 --> 00:35:12.535 iliac vein, and the artery
NOTE Confidence: 0.95859516

00:35:12.535 --> 00:35:14.075 is compressing just a little,
NOTE Confidence: 0.95859516

00:35:14.215 --> 00:35:15.335 but the compression is a
NOTE Confidence: 0.95859516

00:35:15.335 --> 00:35:16.955 lot more dramatic up here.

NOTE Confidence: 0.98406965

00:35:17.335 --> 00:35:18.750 So if this patient had

NOTE Confidence: 0.98406965

00:35:18.989 --> 00:35:21.230 significant symptoms, aching, swelling, past

NOTE Confidence: 0.98406965

00:35:21.230 --> 00:35:21.730 DVT,

NOTE Confidence: 0.94966125

00:35:22.030 --> 00:35:23.070 you may be within your

NOTE Confidence: 0.94966125

00:35:23.070 --> 00:35:24.510 right to want to stent

NOTE Confidence: 0.94966125

00:35:24.510 --> 00:35:25.010 that.

NOTE Confidence: 0.93953973

00:35:25.390 --> 00:35:26.510 And here's a case we

NOTE Confidence: 0.93953973

00:35:26.510 --> 00:35:27.250 did actually.

NOTE Confidence: 0.99610806

00:35:27.790 --> 00:35:29.090 Here is a

NOTE Confidence: 0.98201215

00:35:29.469 --> 00:35:30.989 an iliac vein that is

NOTE Confidence: 0.98201215

00:35:30.989 --> 00:35:32.955 compressed between the internal and

NOTE Confidence: 0.98201215

00:35:33.114 --> 00:35:34.475 the external arteries. And after

NOTE Confidence: 0.98201215

00:35:34.475 --> 00:35:35.515 it's stented, you can see

NOTE Confidence: 0.98201215

00:35:35.515 --> 00:35:36.795 that it is wide open

NOTE Confidence: 0.98201215

00:35:36.795 --> 00:35:37.995 because the stent can overcome

NOTE Confidence: 0.98201215

00:35:37.995 --> 00:35:38.735 the external
NOTE Confidence: 0.97709274
00:35:39.035 --> 00:35:39.535 forces.
NOTE Confidence: 0.9673676
00:35:40.715 --> 00:35:41.915 Now there are some interesting
NOTE Confidence: 0.9673676
00:35:41.915 --> 00:35:43.195 nuances that you just will
NOTE Confidence: 0.9673676
00:35:43.195 --> 00:35:45.215 not get in arterial disease.
NOTE Confidence: 0.999795
00:35:45.594 --> 00:35:46.735 What you see here
NOTE Confidence: 0.9985813
00:35:47.195 --> 00:35:47.695 is
NOTE Confidence: 0.97689414
00:35:49.900 --> 00:35:51.500 an IVUS catheter parked in
NOTE Confidence: 0.97689414
00:35:51.500 --> 00:35:53.180 the common iliac vein, and
NOTE Confidence: 0.97689414
00:35:53.180 --> 00:35:54.380 we've just asked the patient
NOTE Confidence: 0.97689414
00:35:54.380 --> 00:35:54.880 to
NOTE Confidence: 0.9908034
00:35:55.260 --> 00:35:55.760 breathe.
NOTE Confidence: 0.9847968
00:35:56.940 --> 00:35:58.219 And you can clearly see,
NOTE Confidence: 0.9847968
00:35:58.219 --> 00:35:59.420 and this happens in many
NOTE Confidence: 0.9847968
00:35:59.420 --> 00:36:00.620 patients, that the caliber of
NOTE Confidence: 0.9847968
00:36:00.620 --> 00:36:01.739 the vein changes. So if

NOTE Confidence: 0.9847968
00:36:01.739 --> 00:36:02.860 we were to do a
NOTE Confidence: 0.9847968
00:36:02.860 --> 00:36:03.360 pullback
NOTE Confidence: 0.93891835
00:36:03.705 --> 00:36:04.825 by IVUS like we do
NOTE Confidence: 0.93891835
00:36:04.825 --> 00:36:06.045 in arterial disease,
NOTE Confidence: 0.9763481
00:36:06.985 --> 00:36:09.005 we may not fully appreciate
NOTE Confidence: 0.9763481
00:36:09.065 --> 00:36:10.265 if there's stenosis here or
NOTE Confidence: 0.9763481
00:36:10.265 --> 00:36:11.145 not. So this is a
NOTE Confidence: 0.9763481
00:36:11.145 --> 00:36:11.965 common phenomenon,
NOTE Confidence: 0.99444604
00:36:12.265 --> 00:36:13.885 and it's an interesting nuance
NOTE Confidence: 0.99444604
00:36:13.945 --> 00:36:15.225 in venous disease that not
NOTE Confidence: 0.99444604
00:36:15.225 --> 00:36:16.605 all patients have, but they
NOTE Confidence: 0.99444604
00:36:16.665 --> 00:36:17.485 can have.
NOTE Confidence: 0.9979702
00:36:18.350 --> 00:36:20.210 The other very interesting nuance
NOTE Confidence: 0.9979702
00:36:20.270 --> 00:36:21.810 is hydration status.
NOTE Confidence: 0.958366
00:36:23.870 --> 00:36:25.710 NPO after midnight is something
NOTE Confidence: 0.958366

00:36:25.710 --> 00:36:26.989 we tell a lot of
NOTE Confidence: 0.958366

00:36:26.989 --> 00:36:28.510 our patients or we even
NOTE Confidence: 0.958366

00:36:28.510 --> 00:36:30.110 cancel procedures for it. It's
NOTE Confidence: 0.958366

00:36:30.110 --> 00:36:31.950 been burnt into our brain
NOTE Confidence: 0.958366

00:36:31.950 --> 00:36:32.450 stem,
NOTE Confidence: 0.99920064

00:36:32.795 --> 00:36:35.135 But it's based on tradition
NOTE Confidence: 0.9681725

00:36:36.235 --> 00:36:37.515 dating back to before most
NOTE Confidence: 0.9681725

00:36:37.515 --> 00:36:38.735 of us were born.
NOTE Confidence: 0.99944717

00:36:39.275 --> 00:36:39.775 So
NOTE Confidence: 0.9552559

00:36:40.395 --> 00:36:42.635 if you do a Venus
NOTE Confidence: 0.9552559

00:36:42.635 --> 00:36:43.755 study, a deep vein study
NOTE Confidence: 0.9552559

00:36:43.755 --> 00:36:45.215 on someone who's been NPO,
NOTE Confidence: 0.9765427

00:36:46.530 --> 00:36:48.050 their veins may actually be
NOTE Confidence: 0.9765427

00:36:48.050 --> 00:36:49.410 smaller in caliber. So when
NOTE Confidence: 0.9765427

00:36:49.410 --> 00:36:50.530 it's time to IBIS and
NOTE Confidence: 0.9765427

00:36:50.530 --> 00:36:51.489 measure and decide if you

NOTE Confidence: 0.9765427
00:36:51.489 --> 00:36:52.290 need to treat it or
NOTE Confidence: 0.9765427
00:36:52.290 --> 00:36:52.790 not,
NOTE Confidence: 0.99937207
00:36:53.090 --> 00:36:54.370 you may not actually know
NOTE Confidence: 0.99937207
00:36:54.370 --> 00:36:55.510 what you're getting.
NOTE Confidence: 0.8655725
00:36:55.969 --> 00:36:57.730 My colleague, doctor Char here
NOTE Confidence: 0.8655725
00:36:57.730 --> 00:36:58.390 at Yale,
NOTE Confidence: 0.9988749
00:36:58.850 --> 00:36:59.910 looked at
NOTE Confidence: 0.9808821
00:37:00.425 --> 00:37:01.465 the stents that we put
NOTE Confidence: 0.9808821
00:37:01.465 --> 00:37:02.445 in at Yale
NOTE Confidence: 0.7158961
00:37:02.905 --> 00:37:03.405 retrospectively.
NOTE Confidence: 0.92126757
00:37:04.425 --> 00:37:06.105 And he divided the stents.
NOTE Confidence: 0.92126757
00:37:06.105 --> 00:37:07.385 These are May thirteenth patients.
NOTE Confidence: 0.92126757
00:37:07.385 --> 00:37:08.445 He'd included
NOTE Confidence: 0.8939935
00:37:09.065 --> 00:37:10.265 patients who had been stented
NOTE Confidence: 0.8939935
00:37:10.265 --> 00:37:11.565 before eleven AM.
NOTE Confidence: 0.90354395

00:37:11.945 --> 00:37:13.864 These are NPO patients not
NOTE Confidence: 0.90354395

00:37:13.864 --> 00:37:14.364 hydrated.
NOTE Confidence: 0.9901601

00:37:15.440 --> 00:37:16.480 And he looked at patients
NOTE Confidence: 0.9901601

00:37:16.480 --> 00:37:17.860 who got a stent after
NOTE Confidence: 0.9901601

00:37:18.000 --> 00:37:19.620 eleven AM. And interestingly,
NOTE Confidence: 0.97782433

00:37:20.720 --> 00:37:21.920 the group that were stented
NOTE Confidence: 0.97782433

00:37:21.920 --> 00:37:22.820 later received
NOTE Confidence: 0.9179942

00:37:23.120 --> 00:37:25.840 seems smaller stents, presumably because
NOTE Confidence: 0.9179942

00:37:25.840 --> 00:37:27.540 they were less well hydrated.
NOTE Confidence: 0.9987451

00:37:28.145 --> 00:37:29.285 So this is interesting
NOTE Confidence: 0.95923984

00:37:29.585 --> 00:37:30.864 retrospective, but kind of an
NOTE Confidence: 0.95923984

00:37:30.864 --> 00:37:32.085 interesting finding.
NOTE Confidence: 0.96100336

00:37:32.545 --> 00:37:34.545 So nowadays, it's common practice
NOTE Confidence: 0.96100336

00:37:34.545 --> 00:37:35.344 for a lot of us
NOTE Confidence: 0.96100336

00:37:35.344 --> 00:37:36.885 to hydrate these patients.
NOTE Confidence: 0.95353144

00:37:38.145 --> 00:37:39.025 This is a young man

NOTE Confidence: 0.95353144

00:37:39.025 --> 00:37:40.224 I first met when he

NOTE Confidence: 0.95353144

00:37:40.224 --> 00:37:41.430 was eighteen years old, and

NOTE Confidence: 0.95353144

00:37:41.510 --> 00:37:42.869 he had some leg swelling.

NOTE Confidence: 0.95353144

00:37:42.869 --> 00:37:43.910 He had a CT scan

NOTE Confidence: 0.95353144

00:37:43.910 --> 00:37:45.109 that suggested a left sided

NOTE Confidence: 0.95353144

00:37:45.109 --> 00:37:46.550 May thinner. Didn't bother much,

NOTE Confidence: 0.95353144

00:37:46.550 --> 00:37:47.930 left him alone. But by

NOTE Confidence: 0.9656672

00:37:48.469 --> 00:37:49.670 by age twenty two, he

NOTE Confidence: 0.9656672

00:37:49.670 --> 00:37:50.790 was starting to have a

NOTE Confidence: 0.9656672

00:37:50.790 --> 00:37:51.989 lot of discomfort, so we

NOTE Confidence: 0.9656672

00:37:51.989 --> 00:37:52.869 took him back. And you

NOTE Confidence: 0.9656672

00:37:52.869 --> 00:37:54.075 can see I just want

NOTE Confidence: 0.9656672

00:37:54.234 --> 00:37:55.835 you to appreciate that you

NOTE Confidence: 0.9656672

00:37:55.835 --> 00:37:57.135 don't see an obvious stenosis,

NOTE Confidence: 0.9656672

00:37:57.195 --> 00:37:58.734 but you kinda get flattening

NOTE Confidence: 0.9656672

00:37:58.875 --> 00:37:59.375 effect
NOTE Confidence: 0.8965799

00:37:59.994 --> 00:38:01.515 in the common iliac. And
NOTE Confidence: 0.8965799

00:38:01.515 --> 00:38:02.875 by IBIS, we confirmed the
NOTE Confidence: 0.8965799

00:38:02.875 --> 00:38:03.614 May Thurner.
NOTE Confidence: 0.99921215

00:38:04.075 --> 00:38:04.575 We
NOTE Confidence: 0.9722068

00:38:05.275 --> 00:38:06.635 stented, and here are the
NOTE Confidence: 0.9722068

00:38:06.954 --> 00:38:08.015 we actually did
NOTE Confidence: 0.98185813

00:38:08.910 --> 00:38:10.109 a double stent, like a
NOTE Confidence: 0.98185813

00:38:10.109 --> 00:38:11.469 double barrel to ensure both
NOTE Confidence: 0.98185813

00:38:11.469 --> 00:38:13.150 sides were good. So this
NOTE Confidence: 0.98185813

00:38:13.150 --> 00:38:14.349 is someone it's a non
NOTE Confidence: 0.98185813

00:38:14.349 --> 00:38:14.849 thrombotic
NOTE Confidence: 0.5645814

00:38:15.309 --> 00:38:16.530 matron or case.
NOTE Confidence: 0.98296124

00:38:17.309 --> 00:38:18.430 Sometimes it's a lot worse
NOTE Confidence: 0.98296124

00:38:18.430 --> 00:38:19.150 than that. This is a
NOTE Confidence: 0.98296124

00:38:19.150 --> 00:38:20.690 lady with a learning disability.

NOTE Confidence: 0.98296124
00:38:20.829 --> 00:38:22.030 She had a history of
NOTE Confidence: 0.98296124
00:38:22.030 --> 00:38:22.690 a DVT
NOTE Confidence: 0.9711154
00:38:23.705 --> 00:38:25.305 filter that was placed at
NOTE Confidence: 0.9711154
00:38:25.305 --> 00:38:26.265 the time, and she had
NOTE Confidence: 0.9711154
00:38:26.265 --> 00:38:27.864 this horrible, painful ulcer that
NOTE Confidence: 0.9711154
00:38:27.864 --> 00:38:29.065 was almost going all the
NOTE Confidence: 0.9711154
00:38:29.065 --> 00:38:30.445 way around her leg,
NOTE Confidence: 0.9889126
00:38:30.905 --> 00:38:32.525 and she tried wound care.
NOTE Confidence: 0.93401754
00:38:33.705 --> 00:38:36.025 Leaving IVC filters in, as
NOTE Confidence: 0.93401754
00:38:36.025 --> 00:38:37.145 you would have seen more
NOTE Confidence: 0.93401754
00:38:37.145 --> 00:38:37.645 recently,
NOTE Confidence: 0.9868365
00:38:38.500 --> 00:38:39.160 is really
NOTE Confidence: 0.9984131
00:38:40.180 --> 00:38:41.780 a very problematic thing for
NOTE Confidence: 0.9984131
00:38:41.780 --> 00:38:42.680 us. So we
NOTE Confidence: 0.99356955
00:38:43.780 --> 00:38:45.620 decided to first remove the
NOTE Confidence: 0.99356955

00:38:45.620 --> 00:38:46.120 filter.
NOTE Confidence: 0.9987753

00:38:46.420 --> 00:38:47.620 So on the left, you
NOTE Confidence: 0.9987753

00:38:47.620 --> 00:38:48.360 can see
NOTE Confidence: 0.9759948

00:38:48.739 --> 00:38:50.260 that we have snared the
NOTE Confidence: 0.9759948

00:38:50.260 --> 00:38:50.760 filter.
NOTE Confidence: 0.97276294

00:38:51.364 --> 00:38:52.885 And with old filters, with
NOTE Confidence: 0.97276294

00:38:52.885 --> 00:38:54.405 all the fibrosis that is
NOTE Confidence: 0.97276294

00:38:54.405 --> 00:38:55.765 in the veins, they become
NOTE Confidence: 0.97276294

00:38:55.765 --> 00:38:56.964 really stuck. So we use
NOTE Confidence: 0.97276294

00:38:56.964 --> 00:38:58.805 laser similar to EP lead
NOTE Confidence: 0.97276294

00:38:58.805 --> 00:39:00.164 extractions. So we use laser
NOTE Confidence: 0.97276294

00:39:00.164 --> 00:39:01.125 and we took the filter
NOTE Confidence: 0.97276294

00:39:01.125 --> 00:39:01.625 out.
NOTE Confidence: 0.999533

00:39:02.005 --> 00:39:03.125 And what you can see
NOTE Confidence: 0.999533

00:39:03.125 --> 00:39:03.625 is
NOTE Confidence: 0.986004

00:39:04.164 --> 00:39:06.210 that the filter does not

NOTE Confidence: 0.986004
00:39:06.210 --> 00:39:07.730 have thrombus on it. Otherwise,
NOTE Confidence: 0.986004
00:39:07.730 --> 00:39:08.609 we would not have touched
NOTE Confidence: 0.986004
00:39:08.609 --> 00:39:09.489 it, but it has all
NOTE Confidence: 0.986004
00:39:09.489 --> 00:39:09.989 this
NOTE Confidence: 0.9899926
00:39:10.369 --> 00:39:10.869 fibrotic
NOTE Confidence: 0.99946123
00:39:11.489 --> 00:39:11.989 material
NOTE Confidence: 0.9606136
00:39:12.290 --> 00:39:13.650 that can really impede flow.
NOTE Confidence: 0.9606136
00:39:13.650 --> 00:39:14.450 This is a lady, and
NOTE Confidence: 0.9606136
00:39:14.450 --> 00:39:15.430 we said at the beginning,
NOTE Confidence: 0.9924558
00:39:15.730 --> 00:39:18.210 obstruction and reflux are behind
NOTE Confidence: 0.9924558
00:39:18.210 --> 00:39:20.070 venous hypertension. In this case,
NOTE Confidence: 0.9977903
00:39:20.450 --> 00:39:21.190 she has
NOTE Confidence: 0.9575593
00:39:22.505 --> 00:39:24.765 she has significant outflow obstruction.
NOTE Confidence: 0.97458196
00:39:25.065 --> 00:39:26.185 But we did not stop
NOTE Confidence: 0.97458196
00:39:26.185 --> 00:39:27.305 there because she had had
NOTE Confidence: 0.97458196

00:39:27.305 --> 00:39:28.825 a DVT, and we went
NOTE Confidence: 0.97458196

00:39:28.825 --> 00:39:30.344 on to do the middle
NOTE Confidence: 0.97458196

00:39:30.344 --> 00:39:32.105 image, a venogram of her
NOTE Confidence: 0.97458196

00:39:32.105 --> 00:39:32.605 left
NOTE Confidence: 0.9995593

00:39:33.305 --> 00:39:34.205 iliac vein
NOTE Confidence: 0.9903773

00:39:34.830 --> 00:39:36.050 that you see here.
NOTE Confidence: 0.98564

00:39:36.590 --> 00:39:37.950 We confirmed it by IVUS,
NOTE Confidence: 0.98564

00:39:37.950 --> 00:39:39.150 but the left side was
NOTE Confidence: 0.98564

00:39:39.150 --> 00:39:40.530 severely post thrombotically
NOTE Confidence: 0.98139983

00:39:40.830 --> 00:39:41.330 stenosed.
NOTE Confidence: 0.98980683

00:39:42.270 --> 00:39:43.390 And just there, you can
NOTE Confidence: 0.98980683

00:39:43.390 --> 00:39:44.510 see this vein going up
NOTE Confidence: 0.98980683

00:39:44.510 --> 00:39:46.130 there acting as a collateral.
NOTE Confidence: 0.98980683

00:39:46.190 --> 00:39:46.830 Do you know what that
NOTE Confidence: 0.98980683

00:39:46.830 --> 00:39:47.330 is?
NOTE Confidence: 0.98828965

00:39:48.005 --> 00:39:49.525 That's her left ovarian vein.

NOTE Confidence: 0.98828965

00:39:49.525 --> 00:39:50.825 So she not only has

NOTE Confidence: 0.98828965

00:39:51.045 --> 00:39:52.585 collaterals through her pelvis,

NOTE Confidence: 0.9757271

00:39:53.045 --> 00:39:54.905 she's actually draining up into

NOTE Confidence: 0.9757271

00:39:55.045 --> 00:39:56.085 her ovarian vein into the

NOTE Confidence: 0.9757271

00:39:56.085 --> 00:39:57.285 renal vein because of this

NOTE Confidence: 0.9757271

00:39:57.285 --> 00:39:58.265 tremendous obstruction.

NOTE Confidence: 0.865053

00:39:58.725 --> 00:40:00.005 So we used IVUS and

NOTE Confidence: 0.865053

00:40:00.005 --> 00:40:00.905 stented it,

NOTE Confidence: 0.78919744

00:40:01.205 --> 00:40:01.525 and,

NOTE Confidence: 0.9907202

00:40:02.619 --> 00:40:03.980 she had significant improvement in

NOTE Confidence: 0.9907202

00:40:03.980 --> 00:40:05.359 her symptoms after that

NOTE Confidence: 0.93497056

00:40:05.660 --> 00:40:07.680 because we used a mechanical

NOTE Confidence: 0.9998274

00:40:07.980 --> 00:40:08.480 procedure

NOTE Confidence: 0.9437238

00:40:08.940 --> 00:40:10.700 to supplement compression to reduce

NOTE Confidence: 0.9437238

00:40:10.700 --> 00:40:11.520 venous hypertension.

NOTE Confidence: 0.7523116

00:40:12.700 --> 00:40:13.200 Sometimes,
NOTE Confidence: 0.9997999

00:40:14.934 --> 00:40:16.775 the problem is caused by
NOTE Confidence: 0.9997999

00:40:16.775 --> 00:40:17.275 us.
NOTE Confidence: 0.9848914

00:40:18.214 --> 00:40:19.194 Here's a lady
NOTE Confidence: 0.9636518

00:40:20.214 --> 00:40:20.954 we treated
NOTE Confidence: 0.9431443

00:40:21.494 --> 00:40:22.614 about ten years ago for
NOTE Confidence: 0.9431443

00:40:22.614 --> 00:40:24.055 PAD. Turned out she had
NOTE Confidence: 0.9431443

00:40:24.055 --> 00:40:26.154 bilateral common iliac artery stenosis.
NOTE Confidence: 0.9431443

00:40:26.214 --> 00:40:27.270 So we just put in
NOTE Confidence: 0.9431443

00:40:27.430 --> 00:40:29.030 chasing stents. And she was
NOTE Confidence: 0.9431443

00:40:29.030 --> 00:40:30.230 very happy. Thank you very
NOTE Confidence: 0.9431443

00:40:30.230 --> 00:40:31.930 much. My collodication is better.
NOTE Confidence: 0.9794643

00:40:32.310 --> 00:40:33.430 But since you've done the
NOTE Confidence: 0.9794643

00:40:33.430 --> 00:40:35.590 procedure, my left calf kinda
NOTE Confidence: 0.9794643

00:40:35.590 --> 00:40:37.270 swells up after I stand
NOTE Confidence: 0.9794643

00:40:37.270 --> 00:40:38.010 for a while.

NOTE Confidence: 0.98802584

00:40:38.310 --> 00:40:39.930 So as it turned out,

NOTE Confidence: 0.99867487

00:40:41.265 --> 00:40:42.005 when we

NOTE Confidence: 0.92450863

00:40:42.625 --> 00:40:44.385 her veins, the part of

NOTE Confidence: 0.92450863

00:40:44.385 --> 00:40:45.984 her left iliac vein that

NOTE Confidence: 0.92450863

00:40:45.984 --> 00:40:46.885 passed under

NOTE Confidence: 0.9742725

00:40:48.305 --> 00:40:48.964 the right

NOTE Confidence: 0.960604

00:40:49.665 --> 00:40:51.585 thrombophilic artery stent was getting

NOTE Confidence: 0.960604

00:40:51.585 --> 00:40:53.265 compressed because we had pushed

NOTE Confidence: 0.960604

00:40:53.265 --> 00:40:54.630 the plaque and the artery

NOTE Confidence: 0.960604

00:40:54.630 --> 00:40:56.309 out further. So we actually

NOTE Confidence: 0.960604

00:40:56.309 --> 00:40:57.030 had to put in a

NOTE Confidence: 0.960604

00:40:57.030 --> 00:40:58.170 venous stent there,

NOTE Confidence: 0.98053217

00:40:58.710 --> 00:41:00.069 which you can see just

NOTE Confidence: 0.98053217

00:41:00.069 --> 00:41:01.510 about here. There it is

NOTE Confidence: 0.98053217

00:41:01.510 --> 00:41:02.630 in the in the vein

NOTE Confidence: 0.98053217

00:41:02.630 --> 00:41:03.989 to stop the vein from
NOTE Confidence: 0.98053217

00:41:03.989 --> 00:41:04.489 imploding
NOTE Confidence: 0.9331501

00:41:04.950 --> 00:41:06.730 and her leg pain improved.
NOTE Confidence: 0.98712605

00:41:08.525 --> 00:41:10.225 Venous stents are not benign.
NOTE Confidence: 0.9948644

00:41:10.605 --> 00:41:11.565 Fellows, you all know the
NOTE Confidence: 0.9948644

00:41:11.565 --> 00:41:13.005 direction of blood flow in
NOTE Confidence: 0.9948644

00:41:13.005 --> 00:41:14.285 the veins. This is a
NOTE Confidence: 0.9948644

00:41:14.285 --> 00:41:15.485 case that happily did not
NOTE Confidence: 0.9948644

00:41:15.485 --> 00:41:16.845 happen to us, but she
NOTE Confidence: 0.9948644

00:41:16.845 --> 00:41:18.285 came to us later for
NOTE Confidence: 0.9948644

00:41:18.285 --> 00:41:19.585 a subsequent issue.
NOTE Confidence: 0.9959488

00:41:19.965 --> 00:41:21.165 This is a young woman,
NOTE Confidence: 0.9959488

00:41:21.165 --> 00:41:22.380 twenty nine years old,
NOTE Confidence: 0.9800936

00:41:22.779 --> 00:41:23.839 gravitated to,
NOTE Confidence: 0.9601432

00:41:24.940 --> 00:41:26.380 worked in a bar standing
NOTE Confidence: 0.9601432

00:41:26.380 --> 00:41:27.660 job, and she had varicose

NOTE Confidence: 0.9601432

00:41:27.660 --> 00:41:29.200 veins in her left calf.

NOTE Confidence: 0.97477823

00:41:30.059 --> 00:41:31.420 The physician who saw her

NOTE Confidence: 0.97477823

00:41:31.420 --> 00:41:32.859 was a vascular surgeon somewhere

NOTE Confidence: 0.97477823

00:41:32.859 --> 00:41:33.599 in Connecticut,

NOTE Confidence: 0.97643185

00:41:34.059 --> 00:41:35.099 said, well, let me just

NOTE Confidence: 0.97643185

00:41:35.099 --> 00:41:36.319 check. Let me do

NOTE Confidence: 0.8377561

00:41:36.805 --> 00:41:38.325 an MRI. And turns out

NOTE Confidence: 0.8377561

00:41:38.325 --> 00:41:39.125 she did have a May

NOTE Confidence: 0.8377561

00:41:39.125 --> 00:41:40.025 thirsens syndrome.

NOTE Confidence: 0.9991359

00:41:41.125 --> 00:41:41.625 Now

NOTE Confidence: 0.975188

00:41:42.245 --> 00:41:43.625 I don't think that

NOTE Confidence: 0.9910051

00:41:43.925 --> 00:41:46.005 proceeding with stenting the iliac

NOTE Confidence: 0.9910051

00:41:46.005 --> 00:41:47.305 vein was what she needed,

NOTE Confidence: 0.9971716

00:41:47.605 --> 00:41:48.985 but she got it anyway.

NOTE Confidence: 0.9622335

00:41:49.619 --> 00:41:51.140 After she got her iliac

NOTE Confidence: 0.9622335

00:41:51.140 --> 00:41:52.420 vein stent, she was sent
NOTE Confidence: 0.9622335

00:41:52.420 --> 00:41:53.219 home, and a couple of
NOTE Confidence: 0.9622335

00:41:53.219 --> 00:41:54.339 days later, she started to
NOTE Confidence: 0.9622335

00:41:54.339 --> 00:41:55.079 get palpitations
NOTE Confidence: 0.9713616

00:41:55.460 --> 00:41:57.380 and chest pain. So she
NOTE Confidence: 0.9713616

00:41:57.380 --> 00:41:58.519 comes to the ER,
NOTE Confidence: 0.9950348

00:41:59.619 --> 00:42:00.920 and on the left,
NOTE Confidence: 0.9606014

00:42:01.619 --> 00:42:03.219 you can perhaps appreciate something
NOTE Confidence: 0.9606014

00:42:03.219 --> 00:42:04.259 that looks a little odd
NOTE Confidence: 0.9606014

00:42:04.259 --> 00:42:04.920 in the
NOTE Confidence: 0.9596813

00:42:05.305 --> 00:42:07.305 interatrial septum carrier. Everybody see
NOTE Confidence: 0.9596813

00:42:07.305 --> 00:42:08.585 that? And then if you
NOTE Confidence: 0.9596813

00:42:08.585 --> 00:42:09.085 look
NOTE Confidence: 0.9966105

00:42:09.465 --> 00:42:11.065 here, you start to appreciate
NOTE Confidence: 0.9966105

00:42:11.065 --> 00:42:12.525 something that shouldn't be there.
NOTE Confidence: 0.99549025

00:42:13.864 --> 00:42:15.325 I think the subsequent images

NOTE Confidence: 0.99549025

00:42:15.545 --> 00:42:16.445 show it better.

NOTE Confidence: 0.91121036

00:42:17.785 --> 00:42:19.610 Her she had two stents,

NOTE Confidence: 0.91121036

00:42:19.610 --> 00:42:21.310 the embolized, they were undersized

NOTE Confidence: 0.7722848

00:42:21.770 --> 00:42:22.250 and,

NOTE Confidence: 0.99872345

00:42:22.810 --> 00:42:23.310 possibly

NOTE Confidence: 0.95843565

00:42:24.250 --> 00:42:26.330 hydration thing, possibly poor IVUS

NOTE Confidence: 0.95843565

00:42:26.330 --> 00:42:28.010 use, but they embolized and

NOTE Confidence: 0.95843565

00:42:28.010 --> 00:42:29.130 they could not snare them.

NOTE Confidence: 0.95843565

00:42:29.130 --> 00:42:30.330 So she actually had twenty

NOTE Confidence: 0.95843565

00:42:30.330 --> 00:42:31.610 two year old woman had

NOTE Confidence: 0.95843565

00:42:31.610 --> 00:42:33.070 to have a median sternotomy

NOTE Confidence: 0.9691636

00:42:34.045 --> 00:42:35.805 to extract two venous stents

NOTE Confidence: 0.9691636

00:42:35.805 --> 00:42:37.165 done for a for an

NOTE Confidence: 0.9691636

00:42:37.165 --> 00:42:38.465 unclear reason. So

NOTE Confidence: 0.9662239

00:42:39.005 --> 00:42:40.045 when it goes wrong, it

NOTE Confidence: 0.9662239

00:42:40.045 --> 00:42:41.085 can really go wrong. And
NOTE Confidence: 0.9662239

00:42:41.085 --> 00:42:42.285 actually, here's, by the way,
NOTE Confidence: 0.9662239

00:42:42.285 --> 00:42:43.025 an echo
NOTE Confidence: 0.97987664

00:42:43.725 --> 00:42:45.485 of her stent. And you
NOTE Confidence: 0.97987664

00:42:45.485 --> 00:42:46.605 can actually see not only
NOTE Confidence: 0.97987664

00:42:46.605 --> 00:42:47.405 is the stent where it
NOTE Confidence: 0.97987664

00:42:47.405 --> 00:42:48.685 should not be up in
NOTE Confidence: 0.97987664

00:42:48.685 --> 00:42:50.500 the atrium, but it's forming
NOTE Confidence: 0.97987664

00:42:50.500 --> 00:42:52.040 thrombus within it as well.
NOTE Confidence: 0.92136467

00:42:53.460 --> 00:42:54.360 So thankfully,
NOTE Confidence: 0.95198697

00:42:55.780 --> 00:42:57.940 this disastrous complication seems to
NOTE Confidence: 0.95198697

00:42:57.940 --> 00:42:59.320 occur very, very seldom,
NOTE Confidence: 0.9862405

00:42:59.860 --> 00:43:01.060 but it seems to affect
NOTE Confidence: 0.9862405

00:43:01.060 --> 00:43:02.340 mostly short stents, which are
NOTE Confidence: 0.9862405

00:43:02.340 --> 00:43:04.040 not well anchored or small.
NOTE Confidence: 0.94955343

00:43:05.905 --> 00:43:06.785 One of the things we

NOTE Confidence: 0.94955343

00:43:06.785 --> 00:43:07.905 also did is to look

NOTE Confidence: 0.94955343

00:43:07.905 --> 00:43:09.424 at the medical therapy and

NOTE Confidence: 0.94955343

00:43:09.424 --> 00:43:11.184 and patency rates or the

NOTE Confidence: 0.94955343

00:43:11.184 --> 00:43:12.165 data at Yale,

NOTE Confidence: 0.99363214

00:43:13.265 --> 00:43:14.484 and we looked retrospectively

NOTE Confidence: 0.95358235

00:43:14.944 --> 00:43:16.224 at stents that were put

NOTE Confidence: 0.95358235

00:43:16.224 --> 00:43:18.464 in for post thrombotic patients,

NOTE Confidence: 0.95358235

00:43:18.464 --> 00:43:18.964 Maytherna,

NOTE Confidence: 0.9728225

00:43:19.665 --> 00:43:20.165 DVT.

NOTE Confidence: 0.9988751

00:43:21.000 --> 00:43:21.500 And

NOTE Confidence: 0.92880875

00:43:22.120 --> 00:43:23.400 we found that as we

NOTE Confidence: 0.92880875

00:43:23.400 --> 00:43:24.920 would expect, the patients with

NOTE Confidence: 0.92880875

00:43:24.920 --> 00:43:26.200 history of DVT had higher

NOTE Confidence: 0.92880875

00:43:26.200 --> 00:43:27.100 rates of reocclusion.

NOTE Confidence: 0.9997033

00:43:27.480 --> 00:43:28.440 We wanted to see if

NOTE Confidence: 0.9997033

00:43:28.440 --> 00:43:29.340 there was any
NOTE Confidence: 0.9854263

00:43:29.719 --> 00:43:31.480 signal to suggest if the
NOTE Confidence: 0.9854263

00:43:31.480 --> 00:43:32.540 mode of anticoagulation
NOTE Confidence: 0.999408

00:43:34.040 --> 00:43:34.540 mattered
NOTE Confidence: 0.99027336

00:43:35.515 --> 00:43:36.734 in terms of patency.
NOTE Confidence: 0.9801001

00:43:37.035 --> 00:43:38.315 And as it happened, it
NOTE Confidence: 0.9801001

00:43:38.315 --> 00:43:39.435 didn't. The only thing that
NOTE Confidence: 0.9801001

00:43:39.435 --> 00:43:40.255 we noticed
NOTE Confidence: 0.92754763

00:43:40.555 --> 00:43:41.755 is that the stents that
NOTE Confidence: 0.92754763

00:43:41.755 --> 00:43:43.035 tended to preclude were a
NOTE Confidence: 0.92754763

00:43:43.035 --> 00:43:43.775 little smaller,
NOTE Confidence: 0.9994742

00:43:44.395 --> 00:43:46.094 and that was statistically significant.
NOTE Confidence: 0.9710544

00:43:48.710 --> 00:43:50.150 So back to the guidelines,
NOTE Confidence: 0.9710544

00:43:50.150 --> 00:43:51.269 what we did in addition
NOTE Confidence: 0.9710544

00:43:51.269 --> 00:43:52.390 to just putting together the
NOTE Confidence: 0.9710544

00:43:52.390 --> 00:43:53.589 guidelines, we thought would make

NOTE Confidence: 0.9710544

00:43:53.589 --> 00:43:55.930 them practical as we took

NOTE Confidence: 0.9710544

00:43:56.150 --> 00:43:57.589 the data that we had

NOTE Confidence: 0.9710544

00:43:57.589 --> 00:43:59.430 and our recommendations and tried

NOTE Confidence: 0.9710544

00:43:59.430 --> 00:44:00.809 to break them down clinically

NOTE Confidence: 0.9989526

00:44:01.269 --> 00:44:01.769 for

NOTE Confidence: 0.99152344

00:44:02.775 --> 00:44:04.875 physicians. So if somebody had

NOTE Confidence: 0.9639724

00:44:05.255 --> 00:44:06.295 c two to c four

NOTE Confidence: 0.9639724

00:44:06.295 --> 00:44:08.454 disease varicose veins and, yes,

NOTE Confidence: 0.9639724

00:44:08.454 --> 00:44:09.355 they were symptomatic

NOTE Confidence: 0.96164334

00:44:09.655 --> 00:44:10.775 because we're just trying to

NOTE Confidence: 0.96164334

00:44:10.775 --> 00:44:12.535 treat symptoms here, if they

NOTE Confidence: 0.96164334

00:44:12.535 --> 00:44:14.295 happen to have certain types

NOTE Confidence: 0.96164334

00:44:14.295 --> 00:44:16.315 of reflux, we made recommendations

NOTE Confidence: 0.9995596

00:44:16.855 --> 00:44:17.355 on

NOTE Confidence: 0.9787237

00:44:17.670 --> 00:44:19.270 what they can do. And

NOTE Confidence: 0.9787237

00:44:19.270 --> 00:44:20.550 for more advanced forms, if
NOTE Confidence: 0.9787237

00:44:20.550 --> 00:44:21.609 they did not improve,
NOTE Confidence: 0.97318786

00:44:21.989 --> 00:44:23.109 then and only then could
NOTE Confidence: 0.97318786

00:44:23.109 --> 00:44:24.790 they start to deal with
NOTE Confidence: 0.97318786

00:44:24.790 --> 00:44:26.550 deep vein disease. With venous
NOTE Confidence: 0.97318786

00:44:26.550 --> 00:44:27.589 ulcer disease, we're a lot
NOTE Confidence: 0.97318786

00:44:27.589 --> 00:44:29.510 more aggressive, obviously, and we
NOTE Confidence: 0.97318786

00:44:29.510 --> 00:44:30.950 recommended a course of action
NOTE Confidence: 0.97318786

00:44:30.950 --> 00:44:33.055 that included eliminating superficial superficial
NOTE Confidence: 0.97318786

00:44:33.055 --> 00:44:35.055 reflux first before we get
NOTE Confidence: 0.97318786

00:44:35.055 --> 00:44:35.555 to
NOTE Confidence: 0.96309096

00:44:35.855 --> 00:44:36.835 the deep veins.
NOTE Confidence: 0.91823053

00:44:37.215 --> 00:44:38.094 And this is on the
NOTE Confidence: 0.91823053

00:44:38.094 --> 00:44:39.635 Sky point of care app.
NOTE Confidence: 0.97002447

00:44:40.335 --> 00:44:41.935 So you may see patients
NOTE Confidence: 0.97002447

00:44:41.935 --> 00:44:42.895 like this in clinic, and

NOTE Confidence: 0.97002447

00:44:42.895 --> 00:44:43.775 I just wanted to show

NOTE Confidence: 0.97002447

00:44:43.775 --> 00:44:45.215 you these because there are

NOTE Confidence: 0.97002447

00:44:45.215 --> 00:44:47.155 these so called masquerader conditions

NOTE Confidence: 0.97002447

00:44:47.375 --> 00:44:48.989 that can look like venous

NOTE Confidence: 0.97002447

00:44:48.989 --> 00:44:49.890 disease, but

NOTE Confidence: 0.990051

00:44:50.590 --> 00:44:51.650 are not necessarily.

NOTE Confidence: 0.97402287

00:44:52.670 --> 00:44:54.030 Someone comes in, they're getting

NOTE Confidence: 0.97402287

00:44:54.030 --> 00:44:54.850 these pigmented

NOTE Confidence: 0.97535187

00:44:55.230 --> 00:44:56.510 areas on their skin of

NOTE Confidence: 0.97535187

00:44:56.510 --> 00:44:58.110 their legs. You've probably seen

NOTE Confidence: 0.97535187

00:44:58.110 --> 00:44:58.850 this. Right?

NOTE Confidence: 0.99877506

00:44:59.469 --> 00:44:59.969 And

NOTE Confidence: 0.98217905

00:45:00.335 --> 00:45:01.855 on further questioning, they also

NOTE Confidence: 0.98217905

00:45:01.855 --> 00:45:03.214 get this sometimes on their

NOTE Confidence: 0.98217905

00:45:03.214 --> 00:45:04.594 back or on their abdomen.

NOTE Confidence: 0.99118465

00:45:05.134 --> 00:45:06.654 So it doesn't really make
NOTE Confidence: 0.99118465

00:45:06.654 --> 00:45:07.535 sense. You can even do
NOTE Confidence: 0.99118465

00:45:07.535 --> 00:45:08.894 a venous study. It's perfectly
NOTE Confidence: 0.99118465

00:45:08.894 --> 00:45:09.394 normal.
NOTE Confidence: 0.95704937

00:45:09.934 --> 00:45:11.454 This is a benign condition
NOTE Confidence: 0.95704937

00:45:11.454 --> 00:45:13.390 called Schamberg disease. It's not
NOTE Confidence: 0.95704937

00:45:13.390 --> 00:45:14.430 really well known. It's a
NOTE Confidence: 0.95704937

00:45:14.430 --> 00:45:16.110 purpuric dermatosis. It's not really
NOTE Confidence: 0.95704937

00:45:16.110 --> 00:45:17.890 well understood, but it's benign.
NOTE Confidence: 0.95704937

00:45:18.030 --> 00:45:19.710 Some dermatologists treat it with
NOTE Confidence: 0.95704937

00:45:19.710 --> 00:45:21.310 with low dose steroids, but
NOTE Confidence: 0.95704937

00:45:21.310 --> 00:45:22.750 it goes away by itself.
NOTE Confidence: 0.95704937

00:45:22.750 --> 00:45:23.950 Although there are certain meds
NOTE Confidence: 0.95704937

00:45:23.950 --> 00:45:25.730 including aspirin that are associated
NOTE Confidence: 0.95704937

00:45:25.790 --> 00:45:26.450 with it.
NOTE Confidence: 0.9734755

00:45:27.065 --> 00:45:28.585 Here's an ulcer that happened

NOTE Confidence: 0.9734755
00:45:28.585 --> 00:45:29.404 in a patient
NOTE Confidence: 0.90112466
00:45:29.704 --> 00:45:31.065 include the patient's been on
NOTE Confidence: 0.90112466
00:45:31.065 --> 00:45:31.565 hydroxyurea.
NOTE Confidence: 0.99615955
00:45:33.944 --> 00:45:36.364 And this is not entirely
NOTE Confidence: 0.99615955
00:45:36.424 --> 00:45:36.924 unusual,
NOTE Confidence: 0.9930205
00:45:37.305 --> 00:45:38.424 but it is not related
NOTE Confidence: 0.9930205
00:45:38.424 --> 00:45:39.704 to vascular disease at all,
NOTE Confidence: 0.9930205
00:45:39.704 --> 00:45:40.444 but rather
NOTE Confidence: 0.968757
00:45:40.770 --> 00:45:42.210 hydroxyurea as well as other
NOTE Confidence: 0.968757
00:45:42.210 --> 00:45:43.969 drugs affect cell the cell
NOTE Confidence: 0.968757
00:45:43.969 --> 00:45:45.090 cycle, in this case, the
NOTE Confidence: 0.968757
00:45:45.090 --> 00:45:46.150 synthesis phase
NOTE Confidence: 0.9200102
00:45:46.530 --> 00:45:48.210 of cell division and the
NOTE Confidence: 0.9200102
00:45:48.210 --> 00:45:49.590 ulcer can form,
NOTE Confidence: 0.98079085
00:45:49.969 --> 00:45:51.890 but mimic venous disease. And
NOTE Confidence: 0.98079085

00:45:51.890 --> 00:45:53.090 there are other drugs that
NOTE Confidence: 0.98079085

00:45:53.090 --> 00:45:54.310 can do it as well.
NOTE Confidence: 0.98079085

00:45:54.545 --> 00:45:55.905 And here's one, those of
NOTE Confidence: 0.98079085

00:45:55.905 --> 00:45:57.285 you who, are
NOTE Confidence: 0.9133023

00:45:57.905 --> 00:45:59.745 our ONC colleagues here, this
NOTE Confidence: 0.9133023

00:45:59.745 --> 00:46:01.445 is a tyrosine kinase inhibitor
NOTE Confidence: 0.9945589

00:46:01.905 --> 00:46:03.665 ulcer that occurred in a
NOTE Confidence: 0.9945589

00:46:03.665 --> 00:46:04.165 patient
NOTE Confidence: 0.9569539

00:46:04.545 --> 00:46:05.285 that received,
NOTE Confidence: 0.92672443

00:46:06.305 --> 00:46:07.445 I think this was sunitinib,
NOTE Confidence: 0.99869716

00:46:07.905 --> 00:46:09.125 and it looks like
NOTE Confidence: 0.97295135

00:46:09.780 --> 00:46:11.540 punched out or blown out
NOTE Confidence: 0.97295135

00:46:11.540 --> 00:46:12.660 ulcers in the legs, but
NOTE Confidence: 0.97295135

00:46:12.660 --> 00:46:14.040 this is not venous insufficiency.
NOTE Confidence: 0.8999572

00:46:14.420 --> 00:46:15.160 But, unfortunately,
NOTE Confidence: 0.9669449

00:46:15.940 --> 00:46:17.320 because of the anti angiogenic,

NOTE Confidence: 0.9829061
00:46:18.260 --> 00:46:19.540 effects of these drugs, these
NOTE Confidence: 0.9829061
00:46:19.540 --> 00:46:20.580 can occur. And it seems
NOTE Confidence: 0.9829061
00:46:20.580 --> 00:46:21.380 that the best way to
NOTE Confidence: 0.9829061
00:46:21.380 --> 00:46:22.180 deal with them is to
NOTE Confidence: 0.9829061
00:46:22.180 --> 00:46:23.800 reduce the dose or eliminate
NOTE Confidence: 0.9829061
00:46:23.860 --> 00:46:24.360 it.
NOTE Confidence: 0.9953528
00:46:25.875 --> 00:46:26.995 So I think to bring
NOTE Confidence: 0.9953528
00:46:26.995 --> 00:46:27.495 things,
NOTE Confidence: 0.9813533
00:46:27.875 --> 00:46:29.015 nearly to a close,
NOTE Confidence: 0.99968594
00:46:29.715 --> 00:46:31.415 obesity is a real problem
NOTE Confidence: 0.9743907
00:46:32.114 --> 00:46:33.555 in the leg space as
NOTE Confidence: 0.9743907
00:46:33.555 --> 00:46:34.435 well. I showed you the
NOTE Confidence: 0.9743907
00:46:34.435 --> 00:46:35.335 beginning that
NOTE Confidence: 0.9508645
00:46:35.795 --> 00:46:37.955 obesity is associated with higher
NOTE Confidence: 0.9508645
00:46:37.955 --> 00:46:38.695 vein pressures.
NOTE Confidence: 0.99198365

00:46:39.069 --> 00:46:40.270 And we actually looked at
NOTE Confidence: 0.99198365

00:46:40.270 --> 00:46:41.869 obesity in our patients who
NOTE Confidence: 0.99198365

00:46:41.869 --> 00:46:44.349 already were being treated for
NOTE Confidence: 0.99198365

00:46:44.349 --> 00:46:44.849 reflux.
NOTE Confidence: 0.8887946

00:46:45.390 --> 00:46:46.670 So as they came up
NOTE Confidence: 0.8887946

00:46:46.670 --> 00:46:47.710 for the re ablation, we
NOTE Confidence: 0.8887946

00:46:47.710 --> 00:46:49.789 checked, measured their sapless vein
NOTE Confidence: 0.8887946

00:46:49.789 --> 00:46:51.329 pressure before the re ablation,
NOTE Confidence: 0.99914026

00:46:51.869 --> 00:46:53.170 and we found that
NOTE Confidence: 0.98948705

00:46:54.065 --> 00:46:56.245 there's actually a correlation between
NOTE Confidence: 0.99895304

00:46:56.545 --> 00:46:58.545 your saphenous vein pressure and
NOTE Confidence: 0.99895304

00:46:58.545 --> 00:46:59.765 body mass index.
NOTE Confidence: 0.9814824

00:47:00.385 --> 00:47:01.765 The patients had their
NOTE Confidence: 0.8633693

00:47:02.864 --> 00:47:03.364 ablation,
NOTE Confidence: 0.94231063

00:47:03.825 --> 00:47:05.345 and this is we're gonna
NOTE Confidence: 0.94231063

00:47:05.345 --> 00:47:06.465 present this, so this hasn't

NOTE Confidence: 0.94231063

00:47:06.465 --> 00:47:08.640 been presented before. But actually

NOTE Confidence: 0.94231063

00:47:08.640 --> 00:47:10.099 post ablation on follow-up,

NOTE Confidence: 0.966659

00:47:10.559 --> 00:47:12.400 there still was a pretty

NOTE Confidence: 0.966659

00:47:12.400 --> 00:47:14.079 strong correlation, even a stronger

NOTE Confidence: 0.966659

00:47:14.079 --> 00:47:15.780 correlation than this between

NOTE Confidence: 0.8978469

00:47:16.319 --> 00:47:18.180 saphenous vein pressure and BMI.

NOTE Confidence: 0.99495584

00:47:19.040 --> 00:47:20.900 So obesity remains a problem.

NOTE Confidence: 0.97656107

00:47:21.525 --> 00:47:22.805 And then lastly, some thoughts

NOTE Confidence: 0.97656107

00:47:22.805 --> 00:47:23.704 about the future.

NOTE Confidence: 0.99495125

00:47:24.244 --> 00:47:25.364 We've talked a little bit

NOTE Confidence: 0.99495125

00:47:25.364 --> 00:47:26.964 about deep vein reflux, which

NOTE Confidence: 0.99495125

00:47:26.964 --> 00:47:28.645 can occur primarily or post

NOTE Confidence: 0.99495125

00:47:28.645 --> 00:47:29.844 thrombotic, but we really don't

NOTE Confidence: 0.99495125

00:47:29.844 --> 00:47:30.805 have an answer for it

NOTE Confidence: 0.99495125

00:47:30.805 --> 00:47:32.664 right now. Some very accomplished

NOTE Confidence: 0.99495125

00:47:32.805 --> 00:47:34.565 surgeons can cut into the
NOTE Confidence: 0.99495125

00:47:34.565 --> 00:47:35.065 endothelium
NOTE Confidence: 0.99893725

00:47:35.684 --> 00:47:36.344 and create
NOTE Confidence: 0.95616144

00:47:36.819 --> 00:47:38.500 these neovalves, but they're very,
NOTE Confidence: 0.95616144

00:47:38.500 --> 00:47:40.099 very hard to do. Any
NOTE Confidence: 0.95616144

00:47:40.099 --> 00:47:41.140 attempts up to net to
NOTE Confidence: 0.95616144

00:47:41.140 --> 00:47:42.500 create a stent valve in
NOTE Confidence: 0.95616144

00:47:42.500 --> 00:47:43.559 the veins of the legs
NOTE Confidence: 0.959025

00:47:43.859 --> 00:47:45.799 has been not very successful,
NOTE Confidence: 0.9907688

00:47:46.260 --> 00:47:47.700 high rates of thrombosis, and
NOTE Confidence: 0.9907688

00:47:47.700 --> 00:47:48.839 the FDA recently
NOTE Confidence: 0.9327793

00:47:49.140 --> 00:47:50.119 actually denied,
NOTE Confidence: 0.966949

00:47:51.055 --> 00:47:53.455 approving this particular device. So
NOTE Confidence: 0.966949

00:47:53.455 --> 00:47:54.755 back to the drawing board.
NOTE Confidence: 0.96910733

00:47:55.375 --> 00:47:56.515 And I think lastly,
NOTE Confidence: 0.98873794

00:47:57.695 --> 00:47:58.195 DVT

NOTE Confidence: 0.99168473

00:47:58.575 --> 00:48:00.275 and the post thrombotic syndrome,

NOTE Confidence: 0.9626956

00:48:00.655 --> 00:48:01.875 there has been a significant

NOTE Confidence: 0.9626956

00:48:02.015 --> 00:48:03.935 rise in catheter procedures over

NOTE Confidence: 0.9626956

00:48:03.935 --> 00:48:05.609 the past ten or so

NOTE Confidence: 0.9626956

00:48:05.609 --> 00:48:07.369 years to reduce hopefully the

NOTE Confidence: 0.9626956

00:48:07.369 --> 00:48:08.910 rate of post thrombotic syndrome.

NOTE Confidence: 0.85916317

00:48:09.289 --> 00:48:09.789 Yet,

NOTE Confidence: 0.8865773

00:48:10.170 --> 00:48:11.710 with the best study attract

NOTE Confidence: 0.8959043

00:48:12.489 --> 00:48:14.410 around half these patients, even

NOTE Confidence: 0.8959043

00:48:14.410 --> 00:48:14.910 after

NOTE Confidence: 0.9906994

00:48:15.529 --> 00:48:17.450 early mechanical thrombectomy, still go

NOTE Confidence: 0.9906994

00:48:17.450 --> 00:48:19.069 on to develop post thrombotic

NOTE Confidence: 0.9906994

00:48:19.130 --> 00:48:19.630 syndrome.

NOTE Confidence: 0.99900675

00:48:20.265 --> 00:48:21.244 So why is

NOTE Confidence: 0.99477303

00:48:21.625 --> 00:48:22.684 that? One of the,

NOTE Confidence: 0.9431677

00:48:23.464 --> 00:48:25.885 subgroup analysis that Rabinovich did,

NOTE Confidence: 0.9545706

00:48:26.904 --> 00:48:28.664 found that and this this

NOTE Confidence: 0.9545706

00:48:28.664 --> 00:48:29.565 was done prospectively.

NOTE Confidence: 0.9859034

00:48:30.344 --> 00:48:30.844 Patients

NOTE Confidence: 0.9790636

00:48:31.305 --> 00:48:32.924 post DVT who had higher

NOTE Confidence: 0.9790636

00:48:33.020 --> 00:48:35.040 levels of these inflammatory markers

NOTE Confidence: 0.9790636

00:48:35.099 --> 00:48:37.020 actually went on to develop

NOTE Confidence: 0.9790636

00:48:37.020 --> 00:48:38.239 post thrombotic syndrome.

NOTE Confidence: 0.9533852

00:48:38.540 --> 00:48:40.160 So certainly a a correlation

NOTE Confidence: 0.9533852

00:48:40.300 --> 00:48:41.500 there. What do we do

NOTE Confidence: 0.9533852

00:48:41.500 --> 00:48:42.239 about it?

NOTE Confidence: 0.9954452

00:48:43.260 --> 00:48:43.760 Well,

NOTE Confidence: 0.98212296

00:48:44.140 --> 00:48:45.660 medical therapy right now is

NOTE Confidence: 0.98212296

00:48:45.660 --> 00:48:46.880 very limited, but

NOTE Confidence: 0.965724

00:48:47.325 --> 00:48:48.065 the dexterity

NOTE Confidence: 0.98269695

00:48:48.364 --> 00:48:50.525 trial just stopped recruiting. And

NOTE Confidence: 0.98269695
00:48:50.525 --> 00:48:51.645 the idea with this was
NOTE Confidence: 0.98269695
00:48:51.645 --> 00:48:52.844 to use this very kind
NOTE Confidence: 0.98269695
00:48:52.844 --> 00:48:54.224 of cute looking device
NOTE Confidence: 0.9361043
00:48:54.605 --> 00:48:55.505 called the bullfrog,
NOTE Confidence: 0.98658174
00:48:56.205 --> 00:48:58.445 and it's advanced into a
NOTE Confidence: 0.98658174
00:48:58.445 --> 00:49:00.205 vein where a DVT has
NOTE Confidence: 0.98658174
00:49:00.205 --> 00:49:00.705 occurred.
NOTE Confidence: 0.98498684
00:49:01.410 --> 00:49:02.930 The balloon is inflated. A
NOTE Confidence: 0.98498684
00:49:02.930 --> 00:49:04.849 small needle is used to
NOTE Confidence: 0.98498684
00:49:04.849 --> 00:49:06.369 pierce the vein wall, and
NOTE Confidence: 0.98498684
00:49:06.369 --> 00:49:08.049 then steroids are injected in
NOTE Confidence: 0.98498684
00:49:08.049 --> 00:49:09.569 various location. So I know
NOTE Confidence: 0.98498684
00:49:09.569 --> 00:49:10.549 it's very crude,
NOTE Confidence: 0.9753025
00:49:11.010 --> 00:49:12.530 but it's a start. And,
NOTE Confidence: 0.9753025
00:49:12.530 --> 00:49:13.250 of course, we don't know
NOTE Confidence: 0.9753025

00:49:13.250 --> 00:49:14.049 if it works yet. They
NOTE Confidence: 0.9753025

00:49:14.049 --> 00:49:15.489 haven't they've not shown the
NOTE Confidence: 0.9753025

00:49:15.489 --> 00:49:16.770 long term follow-up data on
NOTE Confidence: 0.9753025

00:49:16.770 --> 00:49:17.385 this yet.
NOTE Confidence: 0.9828378

00:49:18.505 --> 00:49:19.245 So veins,
NOTE Confidence: 0.9674965

00:49:19.864 --> 00:49:21.725 carry blood, but unlike,
NOTE Confidence: 0.99947566

00:49:22.985 --> 00:49:24.445 that is about where the
NOTE Confidence: 0.97682637

00:49:24.985 --> 00:49:27.065 similarity ends between veins and
NOTE Confidence: 0.97682637

00:49:27.065 --> 00:49:27.565 arteries.
NOTE Confidence: 0.9952232

00:49:28.025 --> 00:49:29.465 And as you've seen, it
NOTE Confidence: 0.9952232

00:49:29.465 --> 00:49:30.125 is a
NOTE Confidence: 0.9932083

00:49:30.510 --> 00:49:33.150 venous hypertension condition associated with
NOTE Confidence: 0.9932083

00:49:33.150 --> 00:49:35.330 reflux and obstruction, maybe both.
NOTE Confidence: 0.9534491

00:49:36.030 --> 00:49:37.810 There's growing data on management,
NOTE Confidence: 0.97971404

00:49:38.989 --> 00:49:40.590 but we're really entering at
NOTE Confidence: 0.97971404

00:49:40.590 --> 00:49:41.950 the ground level. There's much

NOTE Confidence: 0.97971404
00:49:41.950 --> 00:49:43.330 to be discerned. In particular,
NOTE Confidence: 0.97971404
00:49:43.390 --> 00:49:45.230 I think, repairing the valves
NOTE Confidence: 0.97971404
00:49:45.230 --> 00:49:46.805 and medical therapy, which is
NOTE Confidence: 0.97971404
00:49:46.805 --> 00:49:47.285 very
NOTE Confidence: 0.9884823
00:49:47.605 --> 00:49:48.645 compared to what we have
NOTE Confidence: 0.9884823
00:49:48.645 --> 00:49:50.404 for coronary disease, it's very,
NOTE Confidence: 0.9884823
00:49:50.404 --> 00:49:50.904 very
NOTE Confidence: 0.98493004
00:49:51.204 --> 00:49:52.424 rudimentary indeed.
NOTE Confidence: 0.9955185
00:49:52.724 --> 00:49:54.085 If you have any patients
NOTE Confidence: 0.9955185
00:49:54.085 --> 00:49:55.684 with leg swelling, aching, and
NOTE Confidence: 0.9955185
00:49:55.684 --> 00:49:56.344 so on,
NOTE Confidence: 0.9708073
00:49:56.885 --> 00:49:57.844 I would ask you to
NOTE Confidence: 0.9708073
00:49:57.844 --> 00:49:59.609 get older order an ultrasound
NOTE Confidence: 0.9708073
00:49:59.609 --> 00:50:01.369 reflux study, not a DBT
NOTE Confidence: 0.9708073
00:50:01.369 --> 00:50:02.730 rule out. They will still
NOTE Confidence: 0.9708073

00:50:02.730 --> 00:50:03.930 rule out a DBT for
NOTE Confidence: 0.9708073

00:50:03.930 --> 00:50:04.969 you, but with a reflux
NOTE Confidence: 0.9708073

00:50:04.969 --> 00:50:07.130 study, they can see how,
NOTE Confidence: 0.9590843

00:50:07.770 --> 00:50:08.989 the valves are functioning.
NOTE Confidence: 0.96055937

00:50:09.369 --> 00:50:10.489 And, of course, we're happy
NOTE Confidence: 0.96055937

00:50:10.489 --> 00:50:11.529 to see them. And I
NOTE Confidence: 0.96055937

00:50:11.529 --> 00:50:12.809 wanted to acknowledge all my
NOTE Confidence: 0.96055937

00:50:12.809 --> 00:50:14.795 colleagues who've been gracious enough
NOTE Confidence: 0.96055937

00:50:14.795 --> 00:50:15.295 to,
NOTE Confidence: 0.9210435

00:50:15.915 --> 00:50:17.275 send those patients and doctor
NOTE Confidence: 0.9210435

00:50:17.275 --> 00:50:18.475 Young and Lansky who have
NOTE Confidence: 0.9210435

00:50:18.475 --> 00:50:20.235 been wonderful mentors. Thank you
NOTE Confidence: 0.9210435

00:50:20.235 --> 00:50:20.975 for your attention.
NOTE Confidence: 0.9649839

00:50:30.150 --> 00:50:31.589 There's some questions. Maybe I'll
NOTE Confidence: 0.9649839

00:50:31.589 --> 00:50:32.550 start you off and then
NOTE Confidence: 0.9649839

00:50:32.550 --> 00:50:33.910 hand off the mic. So

NOTE Confidence: 0.9649839

00:50:33.910 --> 00:50:35.750 I have, three very, maybe,

NOTE Confidence: 0.9649839

00:50:35.750 --> 00:50:36.150 simple,

NOTE Confidence: 0.90985656

00:50:37.349 --> 00:50:38.790 questions. One is you didn't

NOTE Confidence: 0.90985656

00:50:38.790 --> 00:50:40.310 mention, you showed us the

NOTE Confidence: 0.90985656

00:50:40.310 --> 00:50:41.910 the the hemodynamic effects of,

NOTE Confidence: 0.90985656

00:50:42.230 --> 00:50:44.225 different positions and walking. But

NOTE Confidence: 0.90985656

00:50:44.225 --> 00:50:45.265 I'd be curious to know,

NOTE Confidence: 0.90985656

00:50:45.505 --> 00:50:46.945 what your recommendation is with

NOTE Confidence: 0.90985656

00:50:46.945 --> 00:50:48.145 patients with chronic pain and

NOTE Confidence: 0.90985656

00:50:48.145 --> 00:50:48.645 sinusitis

NOTE Confidence: 0.6840826

00:50:48.945 --> 00:50:49.685 regarding exercise

NOTE Confidence: 0.78450495

00:50:50.225 --> 00:50:51.344 therapy and and,

NOTE Confidence: 0.7602461

00:50:51.985 --> 00:50:53.105 and is it something that,

NOTE Confidence: 0.96987224

00:50:53.585 --> 00:50:54.785 is there any evidence that

NOTE Confidence: 0.96987224

00:50:54.785 --> 00:50:55.844 supports or improves

NOTE Confidence: 0.9009924

00:50:56.785 --> 00:50:57.285 pain?
NOTE Confidence: 0.9876223

00:50:59.070 --> 00:51:00.270 That's one. Second is I'm
NOTE Confidence: 0.9876223

00:51:00.270 --> 00:51:01.230 very interested to know if
NOTE Confidence: 0.9876223

00:51:01.230 --> 00:51:02.530 there's any work on,
NOTE Confidence: 0.9773538

00:51:02.989 --> 00:51:03.890 GLP ones,
NOTE Confidence: 0.93237835

00:51:04.270 --> 00:51:05.950 in particular subsets, and and
NOTE Confidence: 0.93237835

00:51:05.950 --> 00:51:06.989 if you can comment on
NOTE Confidence: 0.93237835

00:51:06.989 --> 00:51:08.030 that. And the third is
NOTE Confidence: 0.93237835

00:51:08.030 --> 00:51:09.390 maybe your just general thoughts
NOTE Confidence: 0.93237835

00:51:09.390 --> 00:51:10.350 on on,
NOTE Confidence: 0.9878492

00:51:11.015 --> 00:51:11.835 what kind of,
NOTE Confidence: 0.9466343

00:51:12.295 --> 00:51:13.835 patients you'd like to see
NOTE Confidence: 0.9466343

00:51:13.975 --> 00:51:15.755 your faculty, colleagues, and fellows
NOTE Confidence: 0.9466343

00:51:15.895 --> 00:51:17.575 refer to you. So Thank
NOTE Confidence: 0.9466343

00:51:17.575 --> 00:51:19.275 you. Thank you. So
NOTE Confidence: 0.98329705

00:51:19.655 --> 00:51:20.955 the the first question,

NOTE Confidence: 0.96607697
00:51:21.415 --> 00:51:23.495 exercise and weight loss certainly
NOTE Confidence: 0.96607697
00:51:23.495 --> 00:51:24.855 helps patients feel better. A
NOTE Confidence: 0.96607697
00:51:24.855 --> 00:51:25.895 lot of patients with Venus
NOTE Confidence: 0.96607697
00:51:25.895 --> 00:51:27.599 suspiciously tell you that if
NOTE Confidence: 0.96607697
00:51:27.599 --> 00:51:28.960 they just stand still like
NOTE Confidence: 0.96607697
00:51:28.960 --> 00:51:30.400 I'm doing now, the leg
NOTE Confidence: 0.96607697
00:51:30.400 --> 00:51:31.519 starts to throb and bother
NOTE Confidence: 0.96607697
00:51:31.519 --> 00:51:32.319 them. As soon as they
NOTE Confidence: 0.96607697
00:51:32.319 --> 00:51:33.920 start to walk, they feel
NOTE Confidence: 0.96607697
00:51:33.920 --> 00:51:34.420 better.
NOTE Confidence: 0.9772257
00:51:34.719 --> 00:51:36.160 The one exception is someone
NOTE Confidence: 0.9772257
00:51:36.160 --> 00:51:38.000 with post thrombotic deep vein
NOTE Confidence: 0.9772257
00:51:38.000 --> 00:51:38.500 occlusion.
NOTE Confidence: 0.9865744
00:51:39.165 --> 00:51:40.844 They seem to get venous
NOTE Confidence: 0.9865744
00:51:40.844 --> 00:51:41.344 claudication.
NOTE Confidence: 0.9719165

00:51:41.965 --> 00:51:42.864 So that's interesting.
NOTE Confidence: 0.9783158

00:51:43.725 --> 00:51:45.005 And that might be because
NOTE Confidence: 0.9783158

00:51:45.005 --> 00:51:46.685 with reflux, you start to
NOTE Confidence: 0.9783158

00:51:46.685 --> 00:51:48.065 recruit the calf pumps.
NOTE Confidence: 0.94410044

00:51:48.445 --> 00:51:49.565 You feel better as you
NOTE Confidence: 0.94410044

00:51:49.565 --> 00:51:51.645 exercise. Whereas with deep obstructive
NOTE Confidence: 0.94410044

00:51:51.645 --> 00:51:53.105 veins, you're trying to,
NOTE Confidence: 0.96101326

00:51:53.739 --> 00:51:55.100 if you will, force the
NOTE Confidence: 0.96101326

00:51:55.100 --> 00:51:56.640 flow and they actually feel
NOTE Confidence: 0.96101326

00:51:56.780 --> 00:51:57.280 worse.
NOTE Confidence: 0.99807423

00:51:59.020 --> 00:52:00.560 With regards to GLP
NOTE Confidence: 0.9802343

00:52:01.260 --> 00:52:02.940 ones, I think that we
NOTE Confidence: 0.9802343

00:52:02.940 --> 00:52:03.680 know that
NOTE Confidence: 0.9198232

00:52:04.140 --> 00:52:05.020 the patients who are the
NOTE Confidence: 0.9198232

00:52:05.020 --> 00:52:07.100 obese respond the worst to
NOTE Confidence: 0.9198232

00:52:07.100 --> 00:52:07.840 vein treatments.

NOTE Confidence: 0.9991054
00:52:08.300 --> 00:52:09.360 The patients who
NOTE Confidence: 0.97851014
00:52:09.795 --> 00:52:10.295 have
NOTE Confidence: 0.9977811
00:52:10.755 --> 00:52:11.815 some method of
NOTE Confidence: 0.9277619
00:52:12.194 --> 00:52:13.875 losing weight will improve their
NOTE Confidence: 0.9277619
00:52:13.875 --> 00:52:15.155 leg edema better than others.
NOTE Confidence: 0.9277619
00:52:15.155 --> 00:52:16.594 There's data already to support
NOTE Confidence: 0.9277619
00:52:16.594 --> 00:52:17.094 that.
NOTE Confidence: 0.9451267
00:52:17.474 --> 00:52:17.974 The
NOTE Confidence: 0.85645086
00:52:18.275 --> 00:52:19.795 the summit trial with GLP
NOTE Confidence: 0.85645086
00:52:19.795 --> 00:52:21.635 one showed in diastolic dysfunction
NOTE Confidence: 0.85645086
00:52:21.635 --> 00:52:23.155 patients that they you can
NOTE Confidence: 0.85645086
00:52:23.155 --> 00:52:23.783 reduce fluid volume. There's data
NOTE Confidence: 0.85645086
00:52:23.783 --> 00:52:24.154 on platelets, and we've actually
NOTE Confidence: 0.85645086
00:52:24.154 --> 00:52:25.175 stay posted with
NOTE Confidence: 0.7969825
00:52:25.530 --> 00:52:26.030 There's
NOTE Confidence: 0.8175542

00:52:26.489 --> 00:52:27.850 data on platelets, and we've
NOTE Confidence: 0.8175542

00:52:27.850 --> 00:52:29.610 actually stay posted. We've we
NOTE Confidence: 0.8175542

00:52:29.610 --> 00:52:31.770 have pitched, a proposal to
NOTE Confidence: 0.8175542

00:52:31.770 --> 00:52:32.270 industry
NOTE Confidence: 0.9658881

00:52:32.570 --> 00:52:33.469 for a large
NOTE Confidence: 0.93248993

00:52:33.850 --> 00:52:35.450 study, a prospective study to
NOTE Confidence: 0.93248993

00:52:35.450 --> 00:52:36.489 look at the obese with
NOTE Confidence: 0.93248993

00:52:36.489 --> 00:52:37.390 venous insufficiency
NOTE Confidence: 0.8666419

00:52:38.090 --> 00:52:39.390 with the GLP one.
NOTE Confidence: 0.90644807

00:52:40.090 --> 00:52:40.570 So we'll
NOTE Confidence: 0.97873527

00:52:41.225 --> 00:52:42.425 that's something that I think
NOTE Confidence: 0.97873527

00:52:42.425 --> 00:52:44.205 has merit to look at.
NOTE Confidence: 0.97873527

00:52:44.425 --> 00:52:45.645 And I think any,
NOTE Confidence: 0.9962914

00:52:46.985 --> 00:52:48.425 glad to see any patients
NOTE Confidence: 0.9962914

00:52:48.425 --> 00:52:48.925 with
NOTE Confidence: 0.96232593

00:52:49.465 --> 00:52:51.325 with achy legs that have

NOTE Confidence: 0.99753

00:52:51.705 --> 00:52:53.145 obvious or not so obvious

NOTE Confidence: 0.99753

00:52:53.145 --> 00:52:53.645 manifestations

NOTE Confidence: 0.9956246

00:52:54.344 --> 00:52:55.325 of venous insufficiency.

NOTE Confidence: 0.9994556

00:52:57.390 --> 00:52:59.010 That's a really wonderful presentation.

NOTE Confidence: 0.9994556

00:52:59.069 --> 00:52:59.809 Thank you.

NOTE Confidence: 0.982648

00:53:00.270 --> 00:53:02.190 Both veins and lymphatics are

NOTE Confidence: 0.982648

00:53:02.190 --> 00:53:03.650 involved in fluid return.

NOTE Confidence: 0.99655277

00:53:03.950 --> 00:53:04.910 And so I was wondering

NOTE Confidence: 0.99655277

00:53:04.910 --> 00:53:07.089 whether there's any relationship between

NOTE Confidence: 0.97726

00:53:07.550 --> 00:53:09.730 venous dysfunction and lymphatic dysfunction.

NOTE Confidence: 0.9582408

00:53:10.109 --> 00:53:11.809 Yeah. Great question. And there

NOTE Confidence: 0.9582408

00:53:12.065 --> 00:53:13.445 there seems to be the

NOTE Confidence: 0.96540695

00:53:13.825 --> 00:53:14.945 in fact, there's a term

NOTE Confidence: 0.96540695

00:53:14.945 --> 00:53:16.325 that's been coined phlebolympghedema.

NOTE Confidence: 0.99425143

00:53:17.505 --> 00:53:19.265 So patients with advanced venous

NOTE Confidence: 0.99425143

00:53:19.265 --> 00:53:19.765 disease
NOTE Confidence: 0.938634

00:53:20.225 --> 00:53:21.825 start to develop lymphedema as
NOTE Confidence: 0.938634

00:53:21.825 --> 00:53:22.805 well. And actually
NOTE Confidence: 0.974543

00:53:23.185 --> 00:53:23.985 and you could you know,
NOTE Confidence: 0.974543

00:53:23.985 --> 00:53:25.460 we can check their deep
NOTE Confidence: 0.974543

00:53:25.460 --> 00:53:26.500 veins. We can check for
NOTE Confidence: 0.974543

00:53:26.500 --> 00:53:27.619 reflux, and they may not
NOTE Confidence: 0.974543

00:53:27.619 --> 00:53:29.219 have any of that. But
NOTE Confidence: 0.974543

00:53:29.219 --> 00:53:30.500 we treat them with pump
NOTE Confidence: 0.974543

00:53:30.500 --> 00:53:32.180 therapy and try to help
NOTE Confidence: 0.974543

00:53:32.180 --> 00:53:33.559 them to lose weight, and
NOTE Confidence: 0.9721814

00:53:33.859 --> 00:53:35.700 it does improve their symptoms.
NOTE Confidence: 0.9721814

00:53:35.700 --> 00:53:36.980 But, yes, there's certainly a
NOTE Confidence: 0.9721814

00:53:36.980 --> 00:53:37.559 a connection.
NOTE Confidence: 0.9339099

00:53:39.425 --> 00:53:40.785 So I had a question.
NOTE Confidence: 0.9339099

00:53:40.785 --> 00:53:42.485 So we've started to do,

NOTE Confidence: 0.9057497
00:53:43.265 --> 00:53:44.565 red blood cell imaging
NOTE Confidence: 0.98464894
00:53:44.864 --> 00:53:46.465 of the lower extremities during
NOTE Confidence: 0.98464894
00:53:46.465 --> 00:53:48.165 cuff occlusion and looking at
NOTE Confidence: 0.98464894
00:53:48.305 --> 00:53:48.805 reflow
NOTE Confidence: 0.93770176
00:53:49.425 --> 00:53:51.265 in in assessment of arterial
NOTE Confidence: 0.93770176
00:53:51.265 --> 00:53:52.945 disease and collateral formation. I
NOTE Confidence: 0.93770176
00:53:52.945 --> 00:53:53.605 was wondering
NOTE Confidence: 0.98482007
00:53:54.130 --> 00:53:55.170 whether there might be any
NOTE Confidence: 0.98482007
00:53:55.170 --> 00:53:56.690 role for this in the
NOTE Confidence: 0.98482007
00:53:56.690 --> 00:53:58.369 setting of venous disease and
NOTE Confidence: 0.98482007
00:53:58.369 --> 00:54:00.290 whether this is really just
NOTE Confidence: 0.98482007
00:54:00.290 --> 00:54:01.890 blood in the vessels, or
NOTE Confidence: 0.98482007
00:54:01.890 --> 00:54:03.250 is it more in the
NOTE Confidence: 0.98482007
00:54:03.250 --> 00:54:04.770 tissues as well that gets
NOTE Confidence: 0.98482007
00:54:04.770 --> 00:54:05.270 retained?
NOTE Confidence: 0.9905788

00:54:06.844 --> 00:54:08.545 Yeah. Great question. I think,
NOTE Confidence: 0.9981438

00:54:09.484 --> 00:54:11.184 we do know that interstitial
NOTE Confidence: 0.9725758

00:54:11.484 --> 00:54:11.984 pooling
NOTE Confidence: 0.99931437

00:54:12.364 --> 00:54:13.025 does cause
NOTE Confidence: 0.9126971

00:54:14.125 --> 00:54:15.744 it is associated with inflammation
NOTE Confidence: 0.9126971

00:54:15.885 --> 00:54:16.785 and the inflammatory
NOTE Confidence: 0.93526936

00:54:17.805 --> 00:54:19.984 markers. And reducing that
NOTE Confidence: 0.97735965

00:54:20.364 --> 00:54:21.424 pooling can
NOTE Confidence: 0.8689879

00:54:23.870 --> 00:54:25.790 can resolve can re result
NOTE Confidence: 0.8689879

00:54:25.950 --> 00:54:27.390 which is associated with lower
NOTE Confidence: 0.8689879

00:54:27.390 --> 00:54:29.410 levels of inflammatory markers,
NOTE Confidence: 0.9266538

00:54:30.030 --> 00:54:31.330 ulcer healing, etcetera.
NOTE Confidence: 0.9599496

00:54:31.710 --> 00:54:32.510 I think what would be
NOTE Confidence: 0.9599496

00:54:32.510 --> 00:54:34.030 nice to see is if
NOTE Confidence: 0.9599496

00:54:34.030 --> 00:54:35.410 you're able to show
NOTE Confidence: 0.8968052

00:54:35.895 --> 00:54:36.695 if this will be in

NOTE Confidence: 0.8968052
00:54:36.695 --> 00:54:37.815 an upright like in a
NOTE Confidence: 0.8968052
00:54:37.815 --> 00:54:38.315 human,
NOTE Confidence: 0.9946123
00:54:38.855 --> 00:54:40.215 if we could see the
NOTE Confidence: 0.9946123
00:54:40.215 --> 00:54:41.835 direction of flow in patients
NOTE Confidence: 0.9946123
00:54:41.895 --> 00:54:42.395 with
NOTE Confidence: 0.98679066
00:54:42.775 --> 00:54:45.015 deep and or superficial reflux
NOTE Confidence: 0.98679066
00:54:45.015 --> 00:54:46.295 and what happens when they're
NOTE Confidence: 0.98679066
00:54:46.295 --> 00:54:48.295 static versus when they're walking.
NOTE Confidence: 0.98679066
00:54:48.295 --> 00:54:49.094 I think that would be
NOTE Confidence: 0.98679066
00:54:49.094 --> 00:54:49.835 very helpful.
NOTE Confidence: 0.99899125
00:54:51.380 --> 00:54:51.880 So,
NOTE Confidence: 0.83102244
00:54:52.180 --> 00:54:53.460 Rob, great talk.
NOTE Confidence: 0.9790734
00:54:54.180 --> 00:54:55.220 If you remember, we had
NOTE Confidence: 0.9790734
00:54:55.220 --> 00:54:56.580 a discussion about the genetics.
NOTE Confidence: 0.9790734
00:54:56.580 --> 00:54:57.700 As you mentioned, this is
NOTE Confidence: 0.9790734

00:54:57.700 --> 00:54:58.920 a familial disorder.
NOTE Confidence: 0.95377356

00:54:59.620 --> 00:55:01.220 And, there was a GWAS
NOTE Confidence: 0.95377356

00:55:01.220 --> 00:55:02.180 that I talked to you
NOTE Confidence: 0.95377356

00:55:02.180 --> 00:55:03.765 about that is done already.
NOTE Confidence: 0.9226099

00:55:04.164 --> 00:55:05.204 And one of the strongest
NOTE Confidence: 0.9226099

00:55:05.204 --> 00:55:06.885 signal was Piezo one, which
NOTE Confidence: 0.9226099

00:55:06.885 --> 00:55:07.704 is a mechanosensing,
NOTE Confidence: 0.9970419

00:55:09.525 --> 00:55:10.984 protein in the cell surface.
NOTE Confidence: 0.90934646

00:55:11.444 --> 00:55:12.805 I wonder actually using this
NOTE Confidence: 0.90934646

00:55:12.805 --> 00:55:14.565 data for polymorphism of this
NOTE Confidence: 0.90934646

00:55:14.565 --> 00:55:15.765 can actually guide you in
NOTE Confidence: 0.90934646

00:55:15.765 --> 00:55:17.045 the treatment because if it
NOTE Confidence: 0.90934646

00:55:17.045 --> 00:55:18.644 is mechanosensing, maybe those are
NOTE Confidence: 0.90934646

00:55:18.644 --> 00:55:19.760 the one that already better
NOTE Confidence: 0.90934646

00:55:19.760 --> 00:55:20.260 respond
NOTE Confidence: 0.9338808

00:55:20.880 --> 00:55:22.239 to all these kind of

NOTE Confidence: 0.9338808

00:55:22.239 --> 00:55:23.700 devices that you showed

NOTE Confidence: 0.9198825

00:55:24.079 --> 00:55:25.280 and kinda kinda guide the

NOTE Confidence: 0.9198825

00:55:25.280 --> 00:55:26.800 health the the treatment that

NOTE Confidence: 0.9198825

00:55:26.800 --> 00:55:27.920 you have. What are your

NOTE Confidence: 0.9198825

00:55:27.920 --> 00:55:28.900 thoughts on that?

NOTE Confidence: 0.9019697

00:55:29.839 --> 00:55:30.800 I suppose you could. I

NOTE Confidence: 0.9019697

00:55:30.800 --> 00:55:31.760 mean, you need to have

NOTE Confidence: 0.9019697

00:55:31.760 --> 00:55:33.140 a good size,

NOTE Confidence: 0.9514458

00:55:34.055 --> 00:55:35.175 study. The studies up to

NOTE Confidence: 0.9514458

00:55:35.175 --> 00:55:36.455 now in genetics have been

NOTE Confidence: 0.9514458

00:55:36.455 --> 00:55:37.755 pretty small. The,

NOTE Confidence: 0.9803515

00:55:39.575 --> 00:55:41.175 the probably one of the

NOTE Confidence: 0.9803515

00:55:41.175 --> 00:55:42.615 best quoted studies was done

NOTE Confidence: 0.9803515

00:55:42.615 --> 00:55:43.735 out of France where they

NOTE Confidence: 0.9803515

00:55:43.735 --> 00:55:45.175 took people young enough for

NOTE Confidence: 0.9803515

00:55:45.175 --> 00:55:46.615 their parents to both be
NOTE Confidence: 0.9803515

00:55:46.615 --> 00:55:48.315 alive, and they examined them
NOTE Confidence: 0.9803515

00:55:48.440 --> 00:55:49.340 and both their
NOTE Confidence: 0.9875127

00:55:49.880 --> 00:55:50.520 parents. And,
NOTE Confidence: 0.90413123

00:55:51.239 --> 00:55:52.200 for people who
NOTE Confidence: 0.9492263

00:55:54.840 --> 00:55:56.520 in those whose both parents
NOTE Confidence: 0.9492263

00:55:56.520 --> 00:55:58.760 had visible varicose veins, there
NOTE Confidence: 0.9492263

00:55:58.760 --> 00:55:59.960 was an eighty percent chance
NOTE Confidence: 0.9492263

00:55:59.960 --> 00:56:01.744 that they had varicose veins
NOTE Confidence: 0.9492263

00:56:01.885 --> 00:56:02.924 as well. So with the
NOTE Confidence: 0.9492263

00:56:02.924 --> 00:56:04.464 genetic aspect of it
NOTE Confidence: 0.97958976

00:56:04.765 --> 00:56:05.825 is is huge.
NOTE Confidence: 0.99736255

00:56:06.204 --> 00:56:07.724 In terms of response to
NOTE Confidence: 0.99736255

00:56:07.724 --> 00:56:08.224 treatment,
NOTE Confidence: 0.9681544

00:56:08.924 --> 00:56:10.045 that would obviously take a
NOTE Confidence: 0.9681544

00:56:10.045 --> 00:56:11.085 larger study. Is that what

NOTE Confidence: 0.9681544

00:56:11.085 --> 00:56:12.204 you're thinking of, Aria, in

NOTE Confidence: 0.9681544

00:56:12.204 --> 00:56:13.025 terms of

NOTE Confidence: 0.94899493

00:56:13.404 --> 00:56:14.684 depending on genes and how

NOTE Confidence: 0.94899493

00:56:14.684 --> 00:56:16.065 they would respond? Mhmm.

NOTE Confidence: 0.9735959

00:56:16.820 --> 00:56:17.860 Yeah. I mean, we could

NOTE Confidence: 0.9735959

00:56:17.860 --> 00:56:18.980 we could think about doing

NOTE Confidence: 0.9735959

00:56:19.060 --> 00:56:20.040 designing a study.

NOTE Confidence: 0.97762346

00:56:24.420 --> 00:56:25.219 If there are no more

NOTE Confidence: 0.97762346

00:56:25.219 --> 00:56:26.420 questions, really, thank you, Rob.

NOTE Confidence: 0.97762346

00:56:26.420 --> 00:56:27.940 That was fantastic and very

NOTE Confidence: 0.97762346

00:56:27.940 --> 00:56:29.000 educational. Thanks.