WEBVTT

00:00:00.240 --> 00:00:00.980 Good afternoon.

00:00:02.000 --> 00:00:03.520 Thank you everyone for being

00:00:03.520 --> 00:00:05.359 here. I'm Rachel Greenup. I'm

00:00:05.359 --> 00:00:06.899 the chief of breast surgery

00:00:06.960 --> 00:00:08.400 in the department of surgery

00:00:08.400 --> 00:00:09.360 here at Yale School of

00:00:09.360 --> 00:00:10.960 Medicine and co director of

00:00:10.960 --> 00:00:12.400 the breast program here at

00:00:12.400 --> 00:00:12.900 Smilo.

00:00:13.615 --> 00:00:14.894 And it's my honor to

00:00:14.894 --> 00:00:16.415 introduce my friend and colleague,

00:00:16.415 --> 00:00:18.335 Doctor. Subha Haykal, who's section

00:00:18.335 --> 00:00:19.314 chief of reconstructive

00:00:20.335 --> 00:00:22.095 oncology in the division of

00:00:22.095 --> 00:00:23.154 plastic and reconstructive

NOTE Confidence: 0.99521375

00:00:23.454 --> 00:00:23.954 surgery.

NOTE Confidence: 0.9417145

00:00:24.654 --> 00:00:26.755 Doctor. Haykal is a specialist

NOTE Confidence: 0.9417145

00:00:26.895 --> 00:00:28.355 in microsurgical reconstruction

NOTE Confidence: 0.93377846

00:00:28.930 --> 00:00:30.530 with research interests in breast

NOTE Confidence: 0.93377846

00:00:30.530 --> 00:00:32.470 reconstructive surgery and vascularized

NOTE Confidence: 0.94917095

00:00:32.850 --> 00:00:33.990 composite allotransplantation.

NOTE Confidence: 0.9964655

00:00:35.409 --> 00:00:37.170 She received her medical degree

NOTE Confidence: 0.9964655

00:00:37.170 --> 00:00:38.710 from the University of Ottawa,

NOTE Confidence: 0.9974518

00:00:39.490 --> 00:00:41.715 completed residency training in plastic

NOTE Confidence: 0.9974518

00:00:41.715 --> 00:00:43.395 and reconstructive surgery at the

NOTE Confidence: 0.9974518

00:00:43.395 --> 00:00:44.615 University of Toronto,

NOTE Confidence: 0.9986253

00:00:45.955 --> 00:00:47.415 did a microsurgery

NOTE Confidence: 0.97240686

00:00:47.795 --> 00:00:49.555 fellowship at the Albany Medical

NOTE Confidence: 0.97240686

00:00:49.555 --> 00:00:50.835 Center in New York, and

NOTE Confidence: 0.97240686

00:00:50.835 --> 00:00:52.835 during her residency, completed a

NOTE Confidence: 0.97240686

00:00:52.835 --> 00:00:53.335 PhD

NOTE Confidence: 0.99730307

00:00:54.370 --> 00:00:56.309 in tissue engineering and regenerative

NOTE Confidence: 0.99730307

00:00:56.450 --> 00:00:56.950 medicine.

NOTE Confidence: 0.9538347

00:00:57.649 --> 00:00:59.489 She worked at Toronto General

NOTE Confidence: 0.9538347

00:00:59.489 --> 00:01:01.410 Hospital University Health Network and

NOTE Confidence: 0.9538347

00:01:01.410 --> 00:01:03.010 Sinai Health in Toronto for

NOTE Confidence: 0.9538347

00:01:03.010 --> 00:01:04.630 several years prior to

NOTE Confidence: 0.9998103

00:01:04.930 --> 00:01:06.450 being recruited to Yale as

NOTE Confidence: 0.9998103

00:01:06.450 --> 00:01:07.909 an associate professor.

NOTE Confidence: 0.96579564

00:01:08.915 --> 00:01:10.915 She has received many awards,

NOTE Confidence: 0.96579564

00:01:11.155 --> 00:01:12.915 for her leadership, including the

NOTE Confidence: 0.96579564

00:01:12.915 --> 00:01:14.775 American Society for reconstructing

NOTE Confidence: 0.97878087

00:01:15.475 --> 00:01:15.975 reconstructive

NOTE Confidence: 0.9898125

00:01:16.435 --> 00:01:16.935 microsurgery,

NOTE Confidence: 0.9153566

00:01:17.955 --> 00:01:19.015 women in microsurgery

NOTE Confidence: 0.89781713

00:01:19.395 --> 00:01:21.075 travel scholarship, and the Hugh

NOTE Confidence: 0.89781713

00:01:21.075 --> 00:01:21.735 g Thompson

NOTE Confidence: 0.6743369

00:01:22.035 --> 00:01:22.535 humanitarian

NOTE Confidence: 0.99850243

00:01:22.995 --> 00:01:24.360 award. She's the author of

NOTE Confidence: 0.99850243

00:01:24.360 --> 00:01:26.220 over fifty peer reviewed publications

NOTE Confidence: 0.98375785

00:01:27.160 --> 00:01:28.760 focused on her research niche

NOTE Confidence: 0.98375785

00:01:28.760 --> 00:01:29.819 of breast reconstruction,

NOTE Confidence: 0.99957293

00:01:30.680 --> 00:01:31.580 cancer reconstruction,

NOTE Confidence: 0.99550706

00:01:32.680 --> 00:01:33.180 microsurgery,

NOTE Confidence: 0.9936803

00:01:33.640 --> 00:01:35.900 tissue engineering, and tissue repair.

NOTE Confidence: 0.98074704

00:01:36.465 --> 00:01:37.744 And I can say on

NOTE Confidence: 0.98074704

00:01:37.744 --> 00:01:39.584 a personal note, having both

NOTE Confidence: 0.98074704

00:01:39.584 --> 00:01:41.025 sat on the search committee

NOTE Confidence: 0.98074704

00:01:41.025 --> 00:01:42.325 as part of her recruitment

NOTE Confidence: 0.9085037

00:01:42.865 --> 00:01:43.845 and now having,

NOTE Confidence: 0.99166304

00:01:44.384 --> 00:01:45.744 gotten to know her both

NOTE Confidence: 0.99166304

00:01:45.744 --> 00:01:47.025 as a clinician and a

NOTE Confidence: 0.99166304

00:01:47.025 --> 00:01:47.525 colleague,

NOTE Confidence: 0.99424076

00:01:48.065 --> 00:01:50.325 she, is excellent in everything

NOTE Confidence: 0.99424076

00:01:50.384 --> 00:01:51.424 she does, and we are

NOTE Confidence: 0.99424076

00:01:51.424 --> 00:01:52.650 so lucky to have her

NOTE Confidence: 0.99424076

00:01:52.650 --> 00:01:53.790 here at Yale.

NOTE Confidence: 0.9832948

00:01:54.490 --> 00:01:54.990 Welcome.

NOTE Confidence: 0.9775828

00:02:01.210 --> 00:02:02.570 Thank you so much, Rachel,

NOTE Confidence: 0.9775828

00:02:02.570 --> 00:02:03.690 and thank you for having

NOTE Confidence: 0.9775828

00:02:03.690 --> 00:02:05.130 me today. It's an honor

NOTE Confidence: 0.9775828

00:02:05.130 --> 00:02:06.410 to be giving grand rounds

NOTE Confidence: 0.9775828

00:02:06.410 --> 00:02:06.885 today.

NOTE Confidence: 0.9876573

00:02:07.445 --> 00:02:08.885 So we'll be discussing a

NOTE Confidence: 0.9876573

00:02:08.885 --> 00:02:10.805 novel surgical management of cancer

NOTE Confidence: 0.9876573

00:02:10.805 --> 00:02:11.865 related lymphedema,

NOTE Confidence: 0.98008454

00:02:12.485 --> 00:02:14.165 and, specifically, I'll be talking

NOTE Confidence: 0.98008454

00:02:14.165 --> 00:02:15.385 about a few projects,

NOTE Confidence: 0.9869638

00:02:16.005 --> 00:02:17.685 that we're working on currently

NOTE Confidence: 0.9869638

00:02:17.685 --> 00:02:19.285 and we've worked on at

NOTE Confidence: 0.9869638

00:02:19.285 --> 00:02:20.505 my previous institution.

NOTE Confidence: 0.9974467

00:02:24.560 --> 00:02:26.080 So the objectives are to

NOTE Confidence: 0.9974467

00:02:26.080 --> 00:02:27.860 determine which patients are candidates

NOTE Confidence: 0.9974467

00:02:27.919 --> 00:02:29.620 for surgical management of lymphedema,

NOTE Confidence: 0.9974467

00:02:29.840 --> 00:02:31.200 to look at options for

NOTE Confidence: 0.9974467

00:02:31.200 --> 00:02:33.060 surgical and microsurgical management,

NOTE Confidence: 0.98984617

00:02:33.520 --> 00:02:35.040 to look at preoperative and

NOTE Confidence: 0.98984617

00:02:35.040 --> 00:02:35.540 postoperative

NOTE Confidence: 0.99979526

00:02:35.919 --> 00:02:36.419 rehabilitation

NOTE Confidence: 0.98964465

00:02:36.800 --> 00:02:37.300 protocol,

NOTE Confidence: 0.9863599

00:02:37.915 --> 00:02:39.755 to discuss future techniques such

NOTE Confidence: 0.9863599

00:02:39.755 --> 00:02:41.435 as prevention and in vivo

NOTE Confidence: 0.9863599

00:02:41.435 --> 00:02:42.875 models, to look at some

NOTE Confidence: 0.9863599

00:02:42.875 --> 00:02:43.695 of the qualitative

NOTE Confidence: 0.98707247

00:02:43.995 --> 00:02:45.755 studies, and to look at

NOTE Confidence: 0.98707247

00:02:45.755 --> 00:02:46.895 prediction models,

NOTE Confidence: 0.9904863

00:02:47.755 --> 00:02:49.195 specifically looking at some of

NOTE Confidence: 0.9904863

00:02:49.195 --> 00:02:50.315 the data here from the

NOTE Confidence: 0.9904863

00:02:50.315 --> 00:02:52.400 Smilow Cancer Center. My disclosure

NOTE Confidence: 0.9904863

00:02:52.459 --> 00:02:53.180 is that I am a

NOTE Confidence: 0.9904863

00:02:53.180 --> 00:02:54.480 consultant for Stryker.

NOTE Confidence: 0.98836356

00:02:56.060 --> 00:02:57.359 So acute lymphedema

NOTE Confidence: 0.99420685

00:02:57.739 --> 00:03:00.459 really presents with generalized protein

NOTE Confidence: 0.99420685

00:03:00.459 --> 00:03:01.439 and fluid accumulation,

NOTE Confidence: 0.99896187

00:03:01.819 --> 00:03:03.040 which leads to inflammation

NOTE Confidence: 0.9667664

00:03:03.835 --> 00:03:05.915 and dilation and fibrosis of

NOTE Confidence: 0.9667664

00:03:05.915 --> 00:03:06.575 the lymphatics.

NOTE Confidence: 0.988276

00:03:07.355 --> 00:03:08.655 And chronic lymphedema

NOTE Confidence: 0.9952114

00:03:08.955 --> 00:03:10.735 is a sustained inflammatory

NOTE Confidence: 0.9885987

00:03:11.195 --> 00:03:11.695 response,

NOTE Confidence: 0.8954954

00:03:12.315 --> 00:03:14.575 increase in excessive adipose tissue,

NOTE Confidence: 0.9997304

00:03:15.115 --> 00:03:15.615 fibrosis,

NOTE Confidence: 0.9888285

00:03:16.470 --> 00:03:18.569 dilated vessels, and lymphangiogenesis.

NOTE Confidence: 0.9984977

00:03:19.830 --> 00:03:21.030 And there is a theory

NOTE Confidence: 0.9984977

00:03:21.030 --> 00:03:22.790 that we can potentially prevent

NOTE Confidence: 0.9984977

00:03:22.790 --> 00:03:23.849 chronic lymphedema

NOTE Confidence: 0.9948682

00:03:24.150 --> 00:03:25.590 if we can halt acute

NOTE Confidence: 0.9948682

00:03:25.590 --> 00:03:26.090 lymphedema.

NOTE Confidence: 0.99760973

00:03:27.669 --> 00:03:29.450 Obviously, the management of lymphedema

NOTE Confidence: 0.99760973

00:03:29.669 --> 00:03:30.569 is a multidisciplinary

NOTE Confidence: 0.960031

00:03:31.349 --> 00:03:32.925 approach. So So it starts

NOTE Confidence: 0.960031

00:03:32.925 --> 00:03:34.225 at the time of cancer

NOTE Confidence: 0.960031

00:03:34.285 --> 00:03:34.785 diagnosis,

NOTE Confidence: 0.9995982

00:03:35.085 --> 00:03:36.445 and it runs through all

NOTE Confidence: 0.9995982

00:03:36.445 --> 00:03:37.585 the years of life.

NOTE Confidence: 0.97538

00:03:38.205 --> 00:03:40.125 It really should focus on

NOTE Confidence: 0.97538

00:03:40.125 --> 00:03:41.585 prevention and surveillance.

NOTE Confidence: 0.9971649

00:03:41.965 --> 00:03:43.345 So early assessment,

NOTE Confidence: 0.90655553

00:03:44.045 --> 00:03:46.065 referral for exercise and rehabilitative

NOTE Confidence: 0.91655195

00:03:46.765 --> 00:03:47.265 therapies,

NOTE Confidence: 0.99897724

00:03:47.650 --> 00:03:48.470 early physiotherapy

NOTE Confidence: 0.9438949

00:03:49.010 --> 00:03:50.610 is key, and, really, the

NOTE Confidence: 0.9438949

00:03:50.610 --> 00:03:52.310 treatment centers around that.

NOTE Confidence: 0.9987662

00:03:52.770 --> 00:03:54.370 Why is this necessary? We

NOTE Confidence: 0.9987662

00:03:54.370 --> 00:03:56.130 know that it reduces economic

NOTE Confidence: 0.9987662

00:03:56.130 --> 00:03:58.630 burden associated with intensive rehabilitation

NOTE Confidence: 0.9985623

00:03:59.010 --> 00:03:59.910 and hospitalization

NOTE Confidence: 0.9852743

00:04:00.370 --> 00:04:01.110 for infection.

NOTE Confidence: 0.9538196

00:04:01.885 --> 00:04:03.425 And second secondary,

NOTE Confidence: 0.9792166

00:04:04.045 --> 00:04:04.545 education,

NOTE Confidence: 0.9695555

00:04:04.925 --> 00:04:06.945 which is promotion of positive

NOTE Confidence: 0.9695555

00:04:07.005 --> 00:04:08.465 self efficacy strategies,

NOTE Confidence: 0.9651044

00:04:09.245 --> 00:04:11.745 really reinforces the survivor's ability

NOTE Confidence: 0.9651044

00:04:11.805 --> 00:04:12.945 to control lymphedema

NOTE Confidence: 0.9989424

00:04:13.245 --> 00:04:15.505 through early detection and early

NOTE Confidence: 0.99968946

00:04:15.965 --> 00:04:16.465 referral.

NOTE Confidence: 0.91507405

00:04:18.770 --> 00:04:20.710 So, really, the mainstay treatment

NOTE Confidence: 0.91507405

00:04:21.010 --> 00:04:22.610 is called combined or t

NOTE Confidence: 0.91507405

00:04:22.610 --> 00:04:25.029 con or complex decongestive therapy.

NOTE Confidence: 0.91507405

00:04:25.170 --> 00:04:26.150 So it involves

NOTE Confidence: 0.9660887

00:04:26.770 --> 00:04:28.930 two of multiple modalities. The

NOTE Confidence: 0.9660887

00:04:28.930 --> 00:04:30.630 first one being manual lymphatic

NOTE Confidence: 0.9660887

00:04:30.690 --> 00:04:32.295 drainage. So there are several

NOTE Confidence: 0.9660887

00:04:32.295 --> 00:04:33.275 different techniques.

NOTE Confidence: 0.8832001

00:04:33.895 --> 00:04:35.815 The VADER technique, the FOLDI

NOTE Confidence: 0.8832001

00:04:35.815 --> 00:04:36.315 method,

NOTE Confidence: 0.97269255

00:04:36.695 --> 00:04:37.995 the Leduc method.

NOTE Confidence: 0.9954573

00:04:38.295 --> 00:04:39.895 There's a plethora of articles

NOTE Confidence: 0.9954573

00:04:39.895 --> 00:04:41.095 that have been published on

NOTE Confidence: 0.9954573

00:04:41.095 --> 00:04:42.955 the effectiveness of these techniques,

NOTE Confidence: 0.98164296

00:04:43.495 --> 00:04:44.615 but there's really not a

NOTE Confidence: 0.98164296

00:04:44.615 --> 00:04:46.070 lot of data that really

NOTE Confidence: 0.98164296

00:04:46.070 --> 00:04:47.830 compares these these methods. And

NOTE Confidence: 0.98164296

00:04:47.830 --> 00:04:49.029 we know it really depends

NOTE Confidence: 0.98164296

00:04:49.029 --> 00:04:50.070 on the training of the

NOTE Confidence: 0.98164296

00:04:50.070 --> 00:04:50.570 therapist.

NOTE Confidence: 0.97990733

00:04:51.589 --> 00:04:54.010 And, also, compression. So compression

NOTE Confidence: 0.97990733

00:04:54.230 --> 00:04:55.910 allows to reduce that venous

NOTE Confidence: 0.97990733

00:04:55.910 --> 00:04:57.865 pressure and flow, which reduces

NOTE Confidence: 0.97990733

00:04:58.005 --> 00:04:59.385 the lymphatic load

NOTE Confidence: 0.99149

00:04:59.765 --> 00:05:01.225 and encourages the lymphatics

NOTE Confidence: 0.9986511

00:05:01.605 --> 00:05:02.665 to take on,

NOTE Confidence: 0.98962367

00:05:03.205 --> 00:05:04.965 that tissue pressure. So that

NOTE Confidence: 0.98962367

00:05:04.965 --> 00:05:07.125 basically looks like bandages and

NOTE Confidence: 0.98962367

00:05:07.125 --> 00:05:08.825 then garments in later stages.

NOTE Confidence: 0.9797265

00:05:09.690 --> 00:05:11.050 So there are two phases

NOTE Confidence: 0.9797265

00:05:11.050 --> 00:05:13.130 to combine decongestive therapy. The

NOTE Confidence: 0.9797265

00:05:13.130 --> 00:05:14.510 first one is to reduce

NOTE Confidence: 0.9797265

00:05:14.570 --> 00:05:15.690 the size of the limb

NOTE Confidence: 0.9797265

00:05:15.690 --> 00:05:17.150 and to improve the skin.

NOTE Confidence: 0.9950593

00:05:17.770 --> 00:05:19.790 The second phase is ongoing.

NOTE Confidence: 0.9950593

00:05:20.010 --> 00:05:20.830 It's individualized.

NOTE Confidence: 0.9979027

00:05:21.290 --> 00:05:22.830 It's about self management

NOTE Confidence: 0.99847066

00:05:23.485 --> 00:05:24.305 to maintain all the

NOTE Confidence: 0.9570628

00:05:24.765 --> 00:05:26.705 gaze gains from phase one,

NOTE Confidence: 0.9570628

00:05:26.925 --> 00:05:28.285 and it's using those low

NOTE Confidence: 0.9570628

00:05:28.285 --> 00:05:30.605 stretch elastic stockings and sleeve

NOTE Confidence: 0.9570628

00:05:30.605 --> 00:05:31.105 compression

NOTE Confidence: 0.9417032

00:05:31.805 --> 00:05:32.545 and multilayer

NOTE Confidence: 0.94966793

00:05:33.005 --> 00:05:34.925 stockings. So the goals are

NOTE Confidence: 0.94966793

00:05:34.925 --> 00:05:36.630 to reduce the swelling, increase

NOTE Confidence: 0.84108484

00:05:37.430 --> 00:05:39.610 drainage, reduce the skin

NOTE Confidence: 0.8277896

00:05:40.070 --> 00:05:41.930 fibrosis, enhance the patient's functional

NOTE Confidence: 0.95635366

00:05:42.470 --> 00:05:45.029 status, relieve discomfort, and improve

NOTE Confidence: 0.95635366

00:05:45.029 --> 00:05:46.870 quality of life, and really

NOTE Confidence: 0.95635366

00:05:46.870 --> 00:05:48.470 also reduce the risk of

NOTE Confidence: 0.95635366

00:05:48.470 --> 00:05:48.970 cellulitis.

NOTE Confidence: 0.9910156

00:05:50.145 --> 00:05:52.225 So staging in lymphedema is

NOTE Confidence: 0.9910156

00:05:52.225 --> 00:05:54.545 actually key, and this really

NOTE Confidence: 0.9910156

00:05:54.545 --> 00:05:55.825 centers on whether or not

NOTE Confidence: 0.9910156

00:05:55.825 --> 00:05:57.505 these patients are candidates for

NOTE Confidence: 0.9910156

00:05:57.505 --> 00:05:59.365 surgery, which I'll further discuss.

NOTE Confidence: 0.9750527

00:05:59.825 --> 00:06:01.345 But there are several different,

NOTE Confidence: 0.9955404

00:06:01.759 --> 00:06:03.759 staging, systems. The one that

NOTE Confidence: 0.9955404

00:06:03.759 --> 00:06:05.279 we typically use is the

NOTE Confidence: 0.9955404

00:06:05.279 --> 00:06:06.479 one that was created in

NOTE Confidence: 0.9955404

00:06:06.479 --> 00:06:07.300 twenty thirteen

NOTE Confidence: 0.98649144

00:06:07.759 --> 00:06:09.520 by the International Society of

NOTE Confidence: 0.98649144

00:06:09.520 --> 00:06:10.020 Lymphology,

NOTE Confidence: 0.99226934

00:06:10.880 --> 00:06:12.800 which divides into stage zero,

NOTE Confidence: 0.99226934

00:06:12.800 --> 00:06:14.495 one, two, and three. So

NOTE Confidence: 0.99226934

00:06:14.495 --> 00:06:15.875 stage zero is subclinical.

NOTE Confidence: 0.9965437

00:06:16.335 --> 00:06:17.875 It's the absence of edema.

NOTE Confidence: 0.9965437

00:06:17.935 --> 00:06:19.474 So these are patients who

NOTE Confidence: 0.97575444

00:06:19.854 --> 00:06:21.854 will not actually see any

NOTE Confidence: 0.97575444

00:06:21.854 --> 00:06:22.754 volume changes,

NOTE Confidence: 0.9981927

00:06:23.455 --> 00:06:23.955 and

NOTE Confidence: 0.8781585

00:06:24.335 --> 00:06:25.935 whoever is examining them, whether

NOTE Confidence: 0.8781585

00:06:25.935 --> 00:06:27.010 it's their physician,

NOTE Confidence: 0.99101084

00:06:27.630 --> 00:06:29.150 or even their surgeons, they

NOTE Confidence: 0.99101084

00:06:29.150 --> 00:06:31.070 won't actually see any changes

NOTE Confidence: 0.99101084

00:06:31.070 --> 00:06:31.810 in volumes.

NOTE Confidence: 0.99958766

00:06:32.430 --> 00:06:32.930 However,

NOTE Confidence: 0.9963226

00:06:33.390 --> 00:06:34.830 we know that those patients

NOTE Confidence: 0.9963226

00:06:34.830 --> 00:06:36.750 potentially have risk factors for

NOTE Confidence: 0.9963226

00:06:36.750 --> 00:06:37.730 developing lymphedema.

NOTE Confidence: 0.94953096

00:06:38.350 --> 00:06:40.050 And, ideally, as a surgeon

NOTE Confidence: 0.9941501

00:06:40.745 --> 00:06:41.865 who works with patients who

NOTE Confidence: 0.9941501

00:06:41.865 --> 00:06:43.545 have lymphedema, I would love

NOTE Confidence: 0.9941501

00:06:43.545 --> 00:06:44.505 to see them when they're

NOTE Confidence: 0.9941501

00:06:44.505 --> 00:06:46.425 at a stage zero. So

NOTE Confidence: 0.9941501

00:06:46.425 --> 00:06:47.385 we have to be able

NOTE Confidence: 0.9941501

00:06:47.385 --> 00:06:49.305 to identify these patients early

NOTE Confidence: 0.9941501

00:06:49.305 --> 00:06:49.805 on.

NOTE Confidence: 0.99947685

00:06:50.265 --> 00:06:51.625 In terms of stage one

NOTE Confidence: 0.99947685

00:06:51.625 --> 00:06:52.765 and stage two,

NOTE Confidence: 0.9750404

00:06:53.440 --> 00:06:55.360 there's different modalities for looking

NOTE Confidence: 0.9750404

00:06:55.360 --> 00:06:57.040 at how we determine whether

NOTE Confidence: 0.9750404

00:06:57.040 --> 00:06:57.920 or not there are these

NOTE Confidence: 0.9750404

00:06:57.920 --> 00:06:59.700 stages. So one is being

NOTE Confidence: 0.9750404

00:06:59.760 --> 00:07:00.660 physical examination

NOTE Confidence: 0.90820444

00:07:01.040 --> 00:07:02.420 looking for pitting edema.

NOTE Confidence: 0.981837

00:07:02.880 --> 00:07:03.760 So if you speak to

NOTE Confidence: 0.981837

00:07:03.760 --> 00:07:06.100 therapist, pitting edema is good.

NOTE Confidence: 0.981837

00:07:06.320 --> 00:07:07.680 It's something that we can

NOTE Confidence: 0.981837

00:07:07.680 --> 00:07:09.325 work with. It allows us

NOTE Confidence: 0.981837

00:07:09.325 --> 00:07:10.685 to put compression on. It

NOTE Confidence: 0.981837

00:07:10.685 --> 00:07:12.065 allows us to use elastic

NOTE Confidence: 0.981837

00:07:12.125 --> 00:07:13.725 bandages. It allows us to

NOTE Confidence: 0.981837

00:07:13.725 --> 00:07:15.265 actually allow for the flow.

NOTE Confidence: 0.9802024

00:07:15.885 --> 00:07:17.405 And, however, when there's no

NOTE Confidence: 0.9802024

00:07:17.405 --> 00:07:18.925 longer pitting edema, we start

NOTE Confidence: 0.9802024

00:07:18.925 --> 00:07:20.625 thinking that there's now progression

NOTE Confidence: 0.9802024

00:07:20.765 --> 00:07:21.585 of the lymphedema,

NOTE Confidence: 0.9677923

00:07:22.280 --> 00:07:23.720 and therefore, we have to

NOTE Confidence: 0.9677923

00:07:23.720 --> 00:07:25.020 think about other modalities.

NOTE Confidence: 0.92793083

00:07:25.640 --> 00:07:27.320 So typically for patients in

NOTE Confidence: 0.92793083

00:07:27.320 --> 00:07:29.020 stages one and two,

NOTE Confidence: 0.995615

00:07:29.480 --> 00:07:30.780 we reserve physiologic

NOTE Confidence: 0.9757581

00:07:31.080 --> 00:07:32.600 techniques. So those are the

NOTE Confidence: 0.9757581

00:07:32.600 --> 00:07:33.100 microsurgical,

NOTE Confidence: 0.88934934

00:07:33.720 --> 00:07:34.220 supermicrosurgery

NOTE Confidence: 0.9984123

00:07:34.920 --> 00:07:36.620 techniques that I'll talk about.

NOTE Confidence: 0.9984123

00:07:36.914 --> 00:07:38.375 And at a later stage,

NOTE Confidence: 0.9984123

00:07:38.675 --> 00:07:40.534 the possible surgical techniques

NOTE Confidence: 0.9919854

00:07:40.835 --> 00:07:42.055 are things like liposuction

NOTE Confidence: 0.99910563

00:07:42.514 --> 00:07:43.735 and ablative techniques.

NOTE Confidence: 0.99515027

00:07:45.074 --> 00:07:46.595 So these are examples of

NOTE Confidence: 0.99515027

00:07:46.595 --> 00:07:48.194 what the what a patient

NOTE Confidence: 0.99515027

00:07:48.194 --> 00:07:49.235 could look like at the

NOTE Confidence: 0.99515027

00:07:49.235 --> 00:07:50.134 different stages.

NOTE Confidence: 0.99744236

00:07:51.080 --> 00:07:52.520 And we also start seeing

NOTE Confidence: 0.99744236

00:07:52.520 --> 00:07:53.960 skin changes that are gonna

NOTE Confidence: 0.99744236

00:07:53.960 --> 00:07:55.900 range from mild skin changes

NOTE Confidence: 0.99744236

00:07:55.960 --> 00:07:57.099 that could be reversible

NOTE Confidence: 0.967817

00:07:58.039 --> 00:08:00.039 to moderate skin changes that

NOTE Confidence: 0.967817

00:08:00.039 --> 00:08:02.460 are potentially start becoming irreversible

NOTE Confidence: 0.96336746

00:08:03.405 --> 00:08:05.185 with some hardening of tissue,

NOTE Confidence: 0.96336746

00:08:05.325 --> 00:08:07.425 some dry skin, some discoloration,

NOTE Confidence: 0.99734247

00:08:08.445 --> 00:08:09.345 where elevation

NOTE Confidence: 0.99396175

00:08:09.885 --> 00:08:11.345 is no longer helpful.

NOTE Confidence: 0.9729182

00:08:11.805 --> 00:08:12.685 And when we get to

NOTE Confidence: 0.9729182

00:08:12.685 --> 00:08:14.545 the severe stage of elephantiasis,

NOTE Confidence: 0.966214

00:08:15.485 --> 00:08:17.080 it's extensive hardening,

NOTE Confidence: 0.9676477

00:08:18.020 --> 00:08:19.940 and very, very few things

NOTE Confidence: 0.9676477

00:08:19.940 --> 00:08:20.680 are actually,

NOTE Confidence: 0.9993501

00:08:21.300 --> 00:08:22.919 helpful at that stage.

NOTE Confidence: 0.9917655

00:08:23.699 --> 00:08:24.900 Now what happens when we

NOTE Confidence: 0.9917655

00:08:24.900 --> 00:08:26.340 look at the lymphatic vessels

NOTE Confidence: 0.9917655

00:08:26.340 --> 00:08:28.020 under the microscope at different

NOTE Confidence: 0.9917655

00:08:28.020 --> 00:08:28.520 stages?

NOTE Confidence: 0.9300533

00:08:28.965 --> 00:08:30.905 So typically a normal lymphatic

NOTE Confidence: 0.9300533

00:08:31.045 --> 00:08:32.585 vessel is thin,

NOTE Confidence: 0.9412104

00:08:32.965 --> 00:08:33.785 is translucent,

NOTE Confidence: 0.9904885

00:08:34.565 --> 00:08:36.005 and we can see flow

NOTE Confidence: 0.9904885

00:08:36.005 --> 00:08:37.045 when we cut into it.

NOTE Confidence: 0.9904885

00:08:37.045 --> 00:08:38.645 There's actually flow that comes

NOTE Confidence: 0.9904885

00:08:38.645 --> 00:08:40.265 out. The flow is slow,

NOTE Confidence: 0.99944675

00:08:40.725 --> 00:08:41.785 but it is there.

NOTE Confidence: 0.9551033

00:08:42.540 --> 00:08:44.940 Eventually with later stages, for

NOTE Confidence: 0.9551033

00:08:44.940 --> 00:08:46.620 example, as a stage one,

NOTE Confidence: 0.9551033

00:08:46.620 --> 00:08:48.000 we see what we call

NOTE Confidence: 0.9551033

00:08:48.059 --> 00:08:48.559 ectasia

NOTE Confidence: 0.9131572

00:08:49.500 --> 00:08:51.660 followed by contraction and then

NOTE Confidence: 0.9131572

00:08:51.660 --> 00:08:52.160 sclerosis.

NOTE Confidence: 0.9969435

00:08:52.779 --> 00:08:54.140 So at that point, the

NOTE Confidence: 0.9969435

00:08:54.140 --> 00:08:55.820 vessels actually look very different

NOTE Confidence: 0.9969435

00:08:55.820 --> 00:08:56.800 under the microscope.

NOTE Confidence: 0.9783689

00:08:57.395 --> 00:08:58.675 When you cut into them,

NOTE Confidence: 0.9783689

00:08:58.675 --> 00:09:00.295 there's very little flow,

NOTE Confidence: 0.97640705

00:09:00.835 --> 00:09:02.535 and, they're no longer,

NOTE Confidence: 0.96755505

00:09:03.075 --> 00:09:03.575 potentially,

NOTE Confidence: 0.99559766

00:09:04.515 --> 00:09:06.355 available for things such as

NOTE Confidence: 0.99559766

00:09:06.355 --> 00:09:07.015 a bypass.

NOTE Confidence: 0.98270375

00:09:08.434 --> 00:09:09.635 Now how do we determine

NOTE Confidence: 0.98270375

00:09:09.635 --> 00:09:11.495 what the most appropriate surgical

NOTE Confidence: 0.98270375

00:09:11.554 --> 00:09:13.170 technique is? It really depends

NOTE Confidence: 0.98270375

00:09:13.170 --> 00:09:14.129 on the things that we

NOTE Confidence: 0.98270375

00:09:14.129 --> 00:09:15.730 just talked about. So staging

NOTE Confidence: 0.98270375

00:09:15.730 --> 00:09:17.250 is key and imaging is

NOTE Confidence: 0.98270375

00:09:17.250 --> 00:09:18.929 key. The first thing that

NOTE Confidence: 0.98270375

00:09:18.929 --> 00:09:20.309 we want to know is,

NOTE Confidence: 0.98270375

00:09:20.610 --> 00:09:22.449 does the lymphatic system still

NOTE Confidence: 0.98270375

00:09:22.449 --> 00:09:23.970 work? Are there still any

NOTE Confidence: 0.98270375

00:09:23.970 --> 00:09:25.589 lymphatic vessels available,

NOTE Confidence: 0.9852348

00:09:26.205 --> 00:09:27.805 Most likely in the distal

NOTE Confidence: 0.9852348

00:09:27.805 --> 00:09:29.005 portion of the limb that

NOTE Confidence: 0.9852348

00:09:29.005 --> 00:09:30.065 are still flowing.

NOTE Confidence: 0.99162304

00:09:30.525 --> 00:09:31.485 So we look at we

NOTE Confidence: 0.99162304

00:09:31.485 --> 00:09:32.705 do clinical examination.

NOTE Confidence: 0.9813227

00:09:33.965 --> 00:09:35.325 We look at the different

NOTE Confidence: 0.9813227

00:09:35.325 --> 00:09:36.684 stages that we talked about,

NOTE Confidence: 0.9813227

00:09:36.684 --> 00:09:38.125 whether or not there's actually

NOTE Confidence: 0.9813227

00:09:38.125 --> 00:09:38.945 any edema.

NOTE Confidence: 0.9658631

00:09:39.420 --> 00:09:41.360 And another modality is lymphosyntography

NOTE Confidence: 0.8245856

00:09:41.980 --> 00:09:42.960 where a radioisotope

NOTE Confidence: 0.9998164

00:09:43.580 --> 00:09:44.399 is injected

NOTE Confidence: 0.9701145

00:09:45.020 --> 00:09:46.620 in the web spaces of

NOTE Confidence: 0.9701145

00:09:46.620 --> 00:09:48.140 the hand or the or

NOTE Confidence: 0.9701145

00:09:48.140 --> 00:09:48.880 the feet,

NOTE Confidence: 0.9836846

00:09:49.500 --> 00:09:51.179 and we look at whether

NOTE Confidence: 0.9836846

00:09:51.179 --> 00:09:52.540 or not there's actually any

NOTE Confidence: 0.9836846

00:09:52.540 --> 00:09:53.820 flow. And as you can

NOTE Confidence: 0.9836846

00:09:53.820 --> 00:09:55.105 see here I'm not sure

NOTE Confidence: 0.9836846

00:09:55.105 --> 00:09:56.145 if you can see my

NOTE Confidence: 0.9836846

00:09:56.145 --> 00:09:56.645 cursor.

NOTE Confidence: 0.99783254

00:09:58.065 --> 00:09:59.745 At stage zero, you'll still

NOTE Confidence: 0.99783254

00:09:59.745 --> 00:10:01.765 see some flow going into,

NOTE Confidence: 0.99783254

00:10:02.065 --> 00:10:03.365 the inguinal area.

NOTE Confidence: 0.98323184

00:10:03.825 --> 00:10:05.345 Here, there's some flow that

NOTE Confidence: 0.98323184

00:10:05.345 --> 00:10:06.085 is starting.

NOTE Confidence: 0.996323

00:10:06.785 --> 00:10:08.145 Eventually, there's what we call

NOTE Confidence: 0.996323

00:10:08.145 --> 00:10:09.840 dermal back flow, which I'll

NOTE Confidence: 0.996323

00:10:09.840 --> 00:10:11.120 describe a little bit more,

NOTE Confidence: 0.996323

00:10:11.120 --> 00:10:12.320 but we can still see

NOTE Confidence: 0.996323

00:10:12.320 --> 00:10:13.360 that there's some flow in

NOTE Confidence: 0.996323

00:10:13.360 --> 00:10:14.580 the inguinal area.

NOTE Confidence: 0.989484

00:10:15.200 --> 00:10:16.800 Stage two, which is further

NOTE Confidence: 0.989484

00:10:16.800 --> 00:10:17.300 progression,

NOTE Confidence: 0.8881257

00:10:17.679 --> 00:10:18.900 there's very very

NOTE Confidence: 0.95799

00:10:19.280 --> 00:10:20.800 little, that is lining up

NOTE Confidence: 0.95799

00:10:20.800 --> 00:10:22.179 in the inguinal area.

NOTE Confidence: 0.97223073

00:10:22.595 --> 00:10:23.635 And in this case, this

NOTE Confidence: 0.97223073

00:10:23.635 --> 00:10:25.315 is the other limb at

NOTE Confidence: 0.97223073

00:10:25.315 --> 00:10:26.515 stage three where there is

NOTE Confidence: 0.97223073

00:10:26.515 --> 00:10:28.215 no flow and complete obstruction.

NOTE Confidence: 0.9854402

00:10:30.195 --> 00:10:31.715 So another modality that we

NOTE Confidence: 0.9854402

00:10:31.715 --> 00:10:32.755 use that is a very

NOTE Confidence: 0.9854402

00:10:32.755 --> 00:10:33.815 helpful modality,

NOTE Confidence: 0.9879474

00:10:35.070 --> 00:10:36.510 that I feel is one

NOTE Confidence: 0.9879474

00:10:36.510 --> 00:10:37.790 of the things that most

NOTE Confidence: 0.9879474

00:10:37.790 --> 00:10:39.390 commonly we use and is

NOTE Confidence: 0.9879474

00:10:39.390 --> 00:10:41.309 very helpful at figuring out

NOTE Confidence: 0.9879474

00:10:41.309 --> 00:10:42.510 whether or not the lymphatic

NOTE Confidence: 0.9879474

00:10:42.510 --> 00:10:44.050 system works is indocyanin

NOTE Confidence: 0.97827435

00:10:44.430 --> 00:10:44.930 green.

NOTE Confidence: 0.98575777

00:10:45.390 --> 00:10:46.990 So that's a fluorescent dye

NOTE Confidence: 0.98575777

00:10:46.990 --> 00:10:48.350 that is injected in the

NOTE Confidence: 0.98575777

00:10:48.350 --> 00:10:49.170 same area.

NOTE Confidence: 0.97106326

00:10:49.635 --> 00:10:50.675 This can also be done

NOTE Confidence: 0.97106326

00:10:50.675 --> 00:10:51.495 in the clinic.

NOTE Confidence: 0.99879867

00:10:51.795 --> 00:10:53.075 And we've also been able

NOTE Confidence: 0.99879867

00:10:53.075 --> 00:10:54.615 to map out the progression

NOTE Confidence: 0.99879867

00:10:54.675 --> 00:10:55.415 of lymphedema

NOTE Confidence: 0.99702084

00:10:55.795 --> 00:10:57.395 depending on what the imaging

NOTE Confidence: 0.99702084

00:10:57.395 --> 00:10:58.515 looks like. So what we

NOTE Confidence: 0.99702084

00:10:58.515 --> 00:10:59.315 do is we use a

NOTE Confidence: 0.99702084

00:10:59.315 --> 00:11:00.054 near infrared

NOTE Confidence: 0.9306797

00:11:00.355 --> 00:11:00.855 spectroscopy.

NOTE Confidence: 0.9731149

00:11:02.130 --> 00:11:03.650 It's called the spy machine

NOTE Confidence: 0.9731149

00:11:03.650 --> 00:11:04.770 to take a look at

NOTE Confidence: 0.9731149

00:11:04.770 --> 00:11:06.130 the limb and to look

NOTE Confidence: 0.9731149

00:11:06.130 --> 00:11:07.410 at whether or not there's

NOTE Confidence: 0.9731149

00:11:07.410 --> 00:11:09.410 linear flow, which is normal

NOTE Confidence: 0.9731149

00:11:09.410 --> 00:11:09.910 flow.

NOTE Confidence: 0.9987256

00:11:10.690 --> 00:11:12.130 Then we start seeing different

NOTE Confidence: 0.9987256

00:11:12.130 --> 00:11:13.665 patterns. We start seeing a

NOTE Confidence: 0.9987256

00:11:13.824 --> 00:11:14.644 splash pattern,

NOTE Confidence: 0.99623555

00:11:15.105 --> 00:11:16.865 a stardust pattern, and a

NOTE Confidence: 0.99623555

00:11:16.865 --> 00:11:18.785 diffuse pattern as there's progression

NOTE Confidence: 0.99623555

00:11:18.785 --> 00:11:19.445 of lymphedema.

NOTE Confidence: 0.9995505

00:11:20.144 --> 00:11:21.824 So the interesting thing about

NOTE Confidence: 0.9995505

00:11:21.824 --> 00:11:23.024 doing this is that you

NOTE Confidence: 0.9995505

00:11:23.024 --> 00:11:24.144 can actually see it in

NOTE Confidence: 0.9995505

00:11:24.144 --> 00:11:24.884 real time.

NOTE Confidence: 0.99705184

00:11:25.184 --> 00:11:26.625 You can start seeing the

NOTE Confidence: 0.99705184

00:11:26.625 --> 00:11:28.144 flow, the movement of the

NOTE Confidence: 0.99705184

00:11:28.144 --> 00:11:28.644 lymphatics

NOTE Confidence: 0.92723495

00:11:29.440 --> 00:11:30.500 within the channels.

NOTE Confidence: 0.97191226

00:11:30.880 --> 00:11:32.240 And and you can also

NOTE Confidence: 0.97191226

00:11:32.240 --> 00:11:33.840 map that out, but also

NOTE Confidence: 0.97191226

00:11:33.840 --> 00:11:35.440 record it. So this an

NOTE Confidence: 0.97191226

00:11:35.600 --> 00:11:36.720 this is an example of

NOTE Confidence: 0.97191226

00:11:36.720 --> 00:11:38.080 one of my patients that

NOTE Confidence: 0.97191226

00:11:38.080 --> 00:11:39.620 I injected in the operating

NOTE Confidence: 0.97191226

00:11:39.680 --> 00:11:41.600 room where you can see

NOTE Confidence: 0.97191226

00:11:41.600 --> 00:11:42.100 there's,

NOTE Confidence: 0.99684405

00:11:42.640 --> 00:11:43.920 there's flow up to the

NOTE Confidence: 0.99684405

00:11:43.920 --> 00:11:45.060 level of the elbow.

NOTE Confidence: 0.99815106

00:11:45.704 --> 00:11:47.704 However, the flow changes. Initially,

NOTE Confidence: 0.99815106

00:11:47.704 --> 00:11:49.324 there's some linear flow

NOTE Confidence: 0.9437909

00:11:49.785 --> 00:11:51.384 followed by a splash pattern,

NOTE Confidence: 0.9437909

00:11:51.384 --> 00:11:53.404 a stardust pattern, and eventually

NOTE Confidence: 0.9437909

00:11:53.464 --> 00:11:55.304 a diffuse pattern with no

NOTE Confidence: 0.9437909

00:11:55.304 --> 00:11:57.704 further progression above the the

NOTE Confidence: 0.9437909

00:11:57.704 --> 00:11:58.204 elbow.

NOTE Confidence: 0.9866733

00:11:59.640 --> 00:12:01.240 So that allows us to

NOTE Confidence: 0.9866733

00:12:01.240 --> 00:12:02.839 figure out if, for example,

NOTE Confidence: 0.9866733

00:12:02.839 --> 00:12:03.580 this patient,

NOTE Confidence: 0.9826174

00:12:04.040 --> 00:12:06.200 we did lymphovenous bypasses on.

NOTE Confidence: 0.9826174

00:12:06.200 --> 00:12:07.640 I'll talk about I'll talk

NOTE Confidence: 0.9826174

00:12:07.640 --> 00:12:08.600 about it a little bit

NOTE Confidence: 0.9826174

00:12:08.600 --> 00:12:09.500 more in detail.

NOTE Confidence: 0.9473264

00:12:10.120 --> 00:12:10.695 But this,

NOTE Confidence: 0.9890169

00:12:11.255 --> 00:12:11.755 intraoperative

NOTE Confidence: 0.9758255

00:12:12.135 --> 00:12:14.375 ICG lymph angiography is key

NOTE Confidence: 0.9758255

00:12:14.375 --> 00:12:15.815 because I know in this

NOTE Confidence: 0.9758255

00:12:15.815 --> 00:12:17.175 area where there's a linear

NOTE Confidence: 0.9758255

00:12:17.175 --> 00:12:17.675 pattern

NOTE Confidence: 0.9640517

00:12:18.295 --> 00:12:19.995 and there's some flow,

NOTE Confidence: 0.9820579

00:12:20.455 --> 00:12:21.495 this is where I'm gonna

NOTE Confidence: 0.9820579

00:12:21.495 --> 00:12:22.395 do my bypasses.

NOTE Confidence: 0.99286145

00:12:22.820 --> 00:12:24.420 Because if I travel more

NOTE Confidence: 0.99286145

00:12:24.420 --> 00:12:25.880 proximally up the limb,

NOTE Confidence: 0.9713161

00:12:26.260 --> 00:12:27.940 then there won't be any,

NOTE Confidence: 0.9713161

00:12:28.260 --> 00:12:29.700 lymphatics that are flowing, and

NOTE Confidence: 0.9713161

00:12:29.700 --> 00:12:30.660 I won't be able to

NOTE Confidence: 0.9713161

00:12:30.660 --> 00:12:32.420 bypass them. This is an

NOTE Confidence: 0.9713161

00:12:32.420 --> 00:12:34.179 example under the microscope of

NOTE Confidence: 0.9713161

00:12:34.179 --> 00:12:35.700 a lymphatic that is stained

NOTE Confidence: 0.9713161

00:12:35.700 --> 00:12:36.360 in blue

NOTE Confidence: 0.9780623

00:12:36.735 --> 00:12:38.335 that is being anastomosed to

NOTE Confidence: 0.9780623

00:12:38.335 --> 00:12:39.934 a small venules that is

NOTE Confidence: 0.9780623

00:12:39.934 --> 00:12:40.995 of equal size.

NOTE Confidence: 0.9791496

00:12:41.375 --> 00:12:42.975 These vessels are typically less

NOTE Confidence: 0.9791496

00:12:42.975 --> 00:12:44.575 than one millimeter in size.

NOTE Confidence: 0.9791496

00:12:44.575 --> 00:12:45.855 In this case, this vessel

NOTE Confidence: 0.9791496

00:12:45.855 --> 00:12:47.214 is about zero point seven

NOTE Confidence: 0.9791496

00:12:47.214 --> 00:12:47.714 millimeters.

NOTE Confidence: 0.9674231

00:12:48.720 --> 00:12:50.899 So, for a lymphovenous bypass,

NOTE Confidence: 0.9674231

00:12:50.959 --> 00:12:53.059 we would typically perform multiple,

NOTE Confidence: 0.9995694

00:12:53.679 --> 00:12:54.579 different bypasses

NOTE Confidence: 0.9890337

00:12:54.959 --> 00:12:56.879 along the, the arm in

NOTE Confidence: 0.9890337

00:12:56.879 --> 00:12:58.420 the area where we'd expect,

NOTE Confidence: 0.9993482

00:12:59.040 --> 00:13:01.600 lymphatic flow or lymphatic vessels

NOTE Confidence: 0.9993482

00:13:01.600 --> 00:13:02.819 to still be present.

NOTE Confidence: 0.9640671

00:13:03.704 --> 00:13:04.925 So what is a lymphatico

NOTE Confidence: 0.9640671

00:13:05.065 --> 00:13:07.065 venous bypass, also referred to

NOTE Confidence: 0.9640671

00:13:07.065 --> 00:13:08.425 as an LVA or an

NOTE Confidence: 0.9640671

00:13:08.425 --> 00:13:08.925 LVB?

NOTE Confidence: 0.9992095

00:13:09.304 --> 00:13:11.165 So it's a microsurgical anastomosis

NOTE Confidence: 0.98457825

00:13:11.785 --> 00:13:13.385 of a lymphatic vessel to

NOTE Confidence: 0.98457825

00:13:13.385 --> 00:13:14.605 a small superficial

NOTE Confidence: 0.9998196

00:13:14.985 --> 00:13:15.485 vein

NOTE Confidence: 0.997541

00:13:16.000 --> 00:13:17.680 to shunt that lymph fluid

NOTE Confidence: 0.997541

00:13:17.680 --> 00:13:18.980 into the venous system.

NOTE Confidence: 0.9959325

00:13:19.760 --> 00:13:21.360 So the theory is that

NOTE Confidence: 0.9959325

00:13:21.360 --> 00:13:21.840 this,

NOTE Confidence: 0.9556202

00:13:22.320 --> 00:13:24.100 this lymphatico venous anastomosis

NOTE Confidence: 0.98675174

00:13:24.559 --> 00:13:26.480 will remain patent and open

NOTE Confidence: 0.98675174

00:13:26.480 --> 00:13:28.400 if the lymphatic pressure is

NOTE Confidence: 0.98675174

00:13:28.400 --> 00:13:30.015 higher than the venous system.

NOTE Confidence: 0.98675174

00:13:30.255 --> 00:13:31.535 So you can imagine if

NOTE Confidence: 0.98675174

00:13:31.535 --> 00:13:32.415 you open one of the

NOTE Confidence: 0.98675174

00:13:32.415 --> 00:13:33.695 venules and there's a lot

NOTE Confidence: 0.98675174

00:13:33.695 --> 00:13:34.655 of flow coming out of

NOTE Confidence: 0.98675174

00:13:34.655 --> 00:13:35.934 it, that is not a

NOTE Confidence: 0.98675174

00:13:35.934 --> 00:13:38.195 good recipient vein. Right? So

NOTE Confidence: 0.98675174

00:13:38.255 --> 00:13:39.535 you have to really find

NOTE Confidence: 0.98675174

00:13:39.535 --> 00:13:41.054 the appropriate venule to do

NOTE Confidence: 0.98675174

00:13:41.054 --> 00:13:41.554 that.

NOTE Confidence: 0.9277074

00:13:41.855 --> 00:13:43.795 So that is best ensured

NOTE Confidence: 0.9277074

00:13:43.934 --> 00:13:45.054 by do looking for a

NOTE Confidence: 0.9277074

00:13:45.054 --> 00:13:46.820 low pressure subdermal venule.

NOTE Confidence: 0.98527706

00:13:47.200 --> 00:13:48.559 And we think from looking

32

NOTE Confidence: 0.98527706

00:13:48.559 --> 00:13:50.399 at the, the studies is

NOTE Confidence: 0.98527706

00:13:50.399 --> 00:13:51.600 that patients could have a

NOTE Confidence: 0.98527706

00:13:51.600 --> 00:13:52.339 mean reduction

NOTE Confidence: 0.9925001

00:13:52.880 --> 00:13:54.240 of about thirty five percent

NOTE Confidence: 0.9925001

00:13:54.240 --> 00:13:55.440 of their volume at one

NOTE Confidence: 0.9925001

00:13:55.440 --> 00:13:55.940 year.

NOTE Confidence: 0.99297494

00:13:56.800 --> 00:13:58.079 And we also know from

NOTE Confidence: 0.99297494

00:13:58.079 --> 00:13:59.495 looking at studies that have

NOTE Confidence: 0.99297494

00:13:59.495 --> 00:14:00.615 been going on for quite

NOTE Confidence: 0.99297494

00:14:00.615 --> 00:14:01.975 some time is that after

NOTE Confidence: 0.99297494

00:14:01.975 --> 00:14:03.255 about two to three years,

NOTE Confidence: 0.99297494

00:14:03.255 --> 00:14:04.475 these patients potentially

NOTE Confidence: 0.9746393

00:14:04.855 --> 00:14:05.835 need more,

NOTE Confidence: 0.99219465

00:14:06.455 --> 00:14:07.755 lymphovenous bypasses.

NOTE Confidence: 0.99642503

00:14:09.175 --> 00:14:10.635 What's a lymph node transfer?

NOTE Confidence: 0.9816992

00:14:11.000 --> 00:14:12.860 So it's LNT or vascularized

00:14:13.160 --> 00:14:14.139 lymph node transfer.

00:14:14.519 --> 00:14:16.120 So this is typically reserved

00:14:16.120 --> 00:14:18.220 for stages two or more.

00:14:18.760 --> 00:14:21.019 So, basically, the recipient bed

00:14:21.320 --> 00:14:22.459 where there's a lymphedema

00:14:22.839 --> 00:14:24.060 is first prepared.

00:14:24.395 --> 00:14:25.435 So one of the most

00:14:25.435 --> 00:14:26.875 important things in that area

00:14:26.875 --> 00:14:28.235 is to excise all the

00:14:28.235 --> 00:14:29.995 scar because we think that

00:14:29.995 --> 00:14:31.435 removing the scar will actually

00:14:31.435 --> 00:14:33.035 help with the flow, and

00:14:33.035 --> 00:14:34.335 then you take a flap,

00:14:34.395 --> 00:14:36.315 basically, of tissue that has

00:14:36.315 --> 00:14:37.855 some lymph nodes in it.

NOTE Confidence: 0.9843194

00:14:38.100 --> 00:14:39.140 So the lymph nodes can

NOTE Confidence: 0.9843194

00:14:39.140 --> 00:14:40.820 be obtained from different sites,

NOTE Confidence: 0.9843194

00:14:40.820 --> 00:14:42.920 the omentum, the inguinal area,

NOTE Confidence: 0.9843194

00:14:42.980 --> 00:14:44.420 the thoracic area, or the

NOTE Confidence: 0.9843194

00:14:44.420 --> 00:14:46.180 cervical area. And, ideally, you

NOTE Confidence: 0.9843194

00:14:46.180 --> 00:14:47.540 wanna take them from areas

NOTE Confidence: 0.9843194

00:14:47.540 --> 00:14:48.899 where patients will not be

NOTE Confidence: 0.9843194

00:14:48.899 --> 00:14:49.880 developing lymphedema.

NOTE Confidence: 0.9996623

00:14:50.545 --> 00:14:52.545 So reverse mapping is key

NOTE Confidence: 0.9996623

00:14:52.545 --> 00:14:54.065 to determine which areas to

NOTE Confidence: 0.9996623

00:14:54.065 --> 00:14:55.045 take them from.

NOTE Confidence: 0.9949904

00:14:55.345 --> 00:14:56.865 So the theory behind this

NOTE Confidence: 0.9949904

00:14:56.865 --> 00:14:58.625 is that you're transferring healthy

NOTE Confidence: 0.9949904

00:14:58.625 --> 00:14:59.445 lymph nodes.

NOTE Confidence: 0.9922127

00:14:59.825 --> 00:15:01.745 They're gonna actually produce vascular

NOTE Confidence: 0.9922127

00:15:01.745 --> 00:15:03.825 endothelial growth factors that's gonna

NOTE Confidence: 0.9922127

00:15:03.825 --> 00:15:04.805 promote lymphangiogenesis

NOTE Confidence: 0.97739106

00:15:05.920 --> 00:15:08.000 and new connections between proximal

NOTE Confidence: 0.97739106

00:15:08.000 --> 00:15:08.980 distal lymphatics.

NOTE Confidence: 0.9644654

00:15:10.320 --> 00:15:11.680 The removal of the scar

NOTE Confidence: 0.9644654

00:15:11.680 --> 00:15:13.440 itself is also gonna enhance

NOTE Confidence: 0.9644654

00:15:13.440 --> 00:15:14.020 the immunological

NOTE Confidence: 0.9998184

00:15:14.400 --> 00:15:14.900 function

NOTE Confidence: 0.97866267

00:15:15.520 --> 00:15:17.280 and reduce the development of

NOTE Confidence: 0.97866267

00:15:17.280 --> 00:15:17.780 infection,

NOTE Confidence: 0.9952274

00:15:18.535 --> 00:15:19.895 but there's no data that

NOTE Confidence: 0.9952274

00:15:19.895 --> 00:15:22.155 actually suggests that lymphatic vessels

NOTE Confidence: 0.9952274

00:15:22.215 --> 00:15:24.475 actually regenerate from those nodes.

NOTE Confidence: 0.9952274

00:15:24.535 --> 00:15:26.055 So all those nodes, the

NOTE Confidence: 0.9952274

00:15:26.055 --> 00:15:27.815 only thing they're doing is

NOTE Confidence: 0.9952274

00:15:27.815 --> 00:15:29.595 producing the growth factors

NOTE Confidence: 0.9955218

00:15:30.055 --> 00:15:31.915 required to allow the lymphatic

NOTE Confidence: 0.9955218

00:15:32.055 --> 00:15:33.700 vessels that are there to

NOTE Confidence: 0.9955218

00:15:33.700 --> 00:15:34.760 actually reform.

NOTE Confidence: 0.998987

00:15:36.260 --> 00:15:38.420 So preventative techniques are also

NOTE Confidence: 0.998987

00:15:38.420 --> 00:15:41.160 important. So one preventative technique

NOTE Confidence: 0.9871713

00:15:41.620 --> 00:15:42.660 used to be called the

NOTE Confidence: 0.9871713

00:15:42.660 --> 00:15:43.800 lymphatic microsurgical

NOTE Confidence: 0.93501854

00:15:44.180 --> 00:15:46.279 prevent preventing healing approach,

NOTE Confidence: 0.81121475

00:15:46.660 --> 00:15:47.160 lympha.

NOTE Confidence: 0.99874306

00:15:47.774 --> 00:15:49.214 We now call it immediate

NOTE Confidence: 0.99874306

00:15:49.214 --> 00:15:50.274 lymphatic reconstruction.

NOTE Confidence: 0.99825233

00:15:51.214 --> 00:15:52.575 So this is used for

NOTE Confidence: 0.99825233

00:15:52.575 --> 00:15:53.555 primary prevention

NOTE Confidence: 0.98609936

00:15:53.935 --> 00:15:55.855 of arm lymphedema, for example,

NOTE Confidence: 0.98609936

00:15:55.855 --> 00:15:56.975 in breast cancer, but it

NOTE Confidence: 0.98609936

00:15:56.975 --> 00:15:58.255 can also be used from

NOTE Confidence: 0.98609936

00:15:58.255 --> 00:15:59.714 melanoma in the trunk.

NOTE Confidence: 0.9849152

00:16:00.209 --> 00:16:00.949 It's a lymphovenous

NOTE Confidence: 0.9600172

00:16:01.329 --> 00:16:02.850 bypass similar to what we

NOTE Confidence: 0.9600172

00:16:02.850 --> 00:16:03.670 just described,

NOTE Confidence: 0.9993654

00:16:04.209 --> 00:16:05.089 but they're done in a

NOTE Confidence: 0.9993654

00:16:05.089 --> 00:16:06.449 patient who does not have

NOTE Confidence: 0.9993654

00:16:06.449 --> 00:16:06.949 lymphedema.

NOTE Confidence: 0.9969136

00:16:07.250 --> 00:16:08.529 So they're done as a

NOTE Confidence: 0.9969136

00:16:08.529 --> 00:16:10.389 possibly preventative method

NOTE Confidence: 0.91400427

00:16:11.010 --> 00:16:12.850 to hopefully decrease their risk

NOTE Confidence: 0.91400427

00:16:12.850 --> 00:16:13.589 of lymphedema,

NOTE Confidence: 0.98445374

00:16:14.195 --> 00:16:15.475 and they don't require any

NOTE Confidence: 0.98445374

00:16:15.475 --> 00:16:16.995 lymph nodes. They don't require

NOTE Confidence: 0.98445374

00:16:16.995 --> 00:16:18.695 any, lymph vessel harvesting.

NOTE Confidence: 0.97399896

00:16:19.955 --> 00:16:21.875 So our algorithm algorithm for

NOTE Confidence: 0.97399896

00:16:21.875 --> 00:16:23.235 treatment is in the phase

NOTE Confidence: 0.97399896

00:16:23.235 --> 00:16:24.115 one, when I see a

NOTE Confidence: 0.97399896

00:16:24.115 --> 00:16:25.555 patient that has lymphedema, I

NOTE Confidence: 0.97399896

00:16:25.555 --> 00:16:26.915 wanna make sure they're well

NOTE Confidence: 0.97399896

00:16:26.915 --> 00:16:28.560 optimized for their CPT or

NOTE Confidence: 0.97399896

00:16:28.560 --> 00:16:29.920 their CDT. So they have

NOTE Confidence: 0.97399896

00:16:29.920 --> 00:16:31.760 therapists on board. They've done

NOTE Confidence: 0.97399896

00:16:31.760 --> 00:16:34.160 their combined econjestive therapy. They've

NOTE Confidence: 0.97399896

00:16:34.160 --> 00:16:35.220 been very rigorous,

NOTE Confidence: 0.99575293

00:16:36.160 --> 00:16:37.620 for six to twelve months.

NOTE Confidence: 0.99575293

00:16:37.760 --> 00:16:38.800 You'll see that,

NOTE Confidence: 0.9971943

00:16:39.200 --> 00:16:40.320 most of the patients that

NOTE Confidence: 0.9971943

00:16:40.320 --> 00:16:41.360 we do end up seeing,

NOTE Confidence: 0.9971943

00:16:41.360 --> 00:16:42.640 and we'll talk about barriers

NOTE Confidence: 0.9971943

00:16:42.640 --> 00:16:44.075 of care in this area

NOTE Confidence: 0.9971943

00:16:44.075 --> 00:16:44.815 as well,

NOTE Confidence: 0.99606997

00:16:45.115 --> 00:16:46.975 are patients who are actually

NOTE Confidence: 0.99606997

00:16:47.035 --> 00:16:48.415 very good at their lymphedema

NOTE Confidence: 0.99606997

00:16:48.635 --> 00:16:49.135 care.

NOTE Confidence: 0.982401

00:16:49.755 --> 00:16:51.115 And then the second phase

NOTE Confidence: 0.982401

00:16:51.115 --> 00:16:52.095 would be microsurgery,

NOTE Confidence: 0.866511

00:16:52.715 --> 00:16:54.395 and then the postoperative phase

NOTE Confidence: 0.866511

00:16:54.395 --> 00:16:55.845 is just as important, which

NOTE Confidence: 0.866511

00:16:55.845 --> 00:16:55.905 is involves a lot of

NOTE Confidence: 0.866511

00:16:55.905 --> 00:16:56.495 rehabilitation and a

NOTE Confidence: 0.57079846

00:16:57.880 --> 00:16:58.380 rehabilitation

NOTE Confidence: 0.8578992

00:16:59.480 --> 00:17:00.300 and a lot of follow-up.

NOTE Confidence: 0.8578992

00:17:00.440 --> 00:17:01.880 So in terms of what

NOTE Confidence: 0.8578992

00:17:01.880 --> 00:17:03.480 do we do, so for

NOTE Confidence: 0.8578992

00:17:03.480 --> 00:17:03.980 prevention,

NOTE Confidence: 0.9437038

00:17:04.359 --> 00:17:05.980 we try to avoid lymphatic

NOTE Confidence: 0.9437038

00:17:06.040 --> 00:17:07.420 injury as best as possible

NOTE Confidence: 0.9437038

00:17:07.560 --> 00:17:09.260 by performing good dissections,

NOTE Confidence: 0.9974827

00:17:09.984 --> 00:17:11.024 and we try to do

NOTE Confidence: 0.9974827

00:17:11.024 --> 00:17:12.404 immediate lymphatic reconstruction.

NOTE Confidence: 0.9708581

00:17:13.105 --> 00:17:14.085 And for treatment,

NOTE Confidence: 0.9606972

00:17:14.544 --> 00:17:15.825 early on at an early

NOTE Confidence: 0.9606972

00:17:15.825 --> 00:17:17.345 stage, we would do multiple

NOTE Confidence: 0.9606972

00:17:17.345 --> 00:17:18.644 lymphovenous bypasses

NOTE Confidence: 0.7992736

00:17:19.264 --> 00:17:21.125 and later on maybe liposuction

NOTE Confidence: 0.9877377

00:17:21.664 --> 00:17:22.945 once we're at a stage

NOTE Confidence: 0.9877377

00:17:22.945 --> 00:17:24.065 where there's more of a

NOTE Confidence: 0.9877377

00:17:24.065 --> 00:17:24.965 fatty component

NOTE Confidence: 0.9949199

00:17:25.500 --> 00:17:27.440 to the lymphedema, which happens

NOTE Confidence: 0.9949199

00:17:27.580 --> 00:17:29.440 in the chronic lymphedema phase.

NOTE Confidence: 0.89879405

00:17:30.140 --> 00:17:30.800 The postoperative

NOTE Confidence: 0.9994254

00:17:31.260 --> 00:17:32.880 protocols are very key.

NOTE Confidence: 0.9986054

00:17:33.180 --> 00:17:34.640 At my previous institution,

NOTE Confidence: 0.9963762

00:17:34.940 --> 00:17:35.980 we had a very big

NOTE Confidence: 0.9963762

00:17:35.980 --> 00:17:36.480 group,

NOTE Confidence: 0.9933212

00:17:37.660 --> 00:17:38.880 involving physiotherapists,

NOTE Confidence: 0.97949666

00:17:39.180 --> 00:17:40.800 manual lymphatic therapists,

NOTE Confidence: 0.93558925

00:17:41.315 --> 00:17:42.695 and we came up with

NOTE Confidence: 0.93558925

00:17:42.835 --> 00:17:43.734 different ways,

NOTE Confidence: 0.9977062

00:17:44.115 --> 00:17:44.615 to

NOTE Confidence: 0.984787

00:17:44.915 --> 00:17:45.975 follow them postoperatively.

NOTE Confidence: 0.9695808

00:17:46.355 --> 00:17:47.475 It really depends on whether

NOTE Confidence: 0.9695808

00:17:47.475 --> 00:17:48.434 or not they're having a

NOTE Confidence: 0.9695808

00:17:48.434 --> 00:17:50.355 lymphovenous bypass or a lymph

NOTE Confidence: 0.9695808

00:17:50.355 --> 00:17:51.015 node transplant.

NOTE Confidence: 0.9905216

00:17:51.635 --> 00:17:53.075 It involves six weeks of

NOTE Confidence: 0.9905216

00:17:53.075 --> 00:17:53.575 compression.

NOTE Confidence: 0.9714906

00:17:54.140 --> 00:17:55.500 It involves a change in

NOTE Confidence: 0.9714906

00:17:55.500 --> 00:17:57.420 the manual lymphatic regimen. So

NOTE Confidence: 0.9714906

00:17:57.420 --> 00:17:58.620 we talked about a low

NOTE Confidence: 0.9714906

00:17:58.620 --> 00:18:00.240 flow to low flow system

NOTE Confidence: 0.9714906

00:18:00.460 --> 00:18:02.460 where typically patients who have

NOTE Confidence: 0.9714906

00:18:02.460 --> 00:18:02.960 lymphedema

NOTE Confidence: 0.93454564

00:18:03.340 --> 00:18:05.200 massage up towards the axilla,

NOTE Confidence: 0.93454564

00:18:05.260 --> 00:18:05.920 for example.

NOTE Confidence: 0.9858895

00:18:06.460 --> 00:18:07.660 In this case, you wanna

NOTE Confidence: 0.9858895

00:18:07.660 --> 00:18:08.560 keep the anastomosis

NOTE Confidence: 0.9653782

00:18:09.180 --> 00:18:10.994 open so you actually start

NOTE Confidence: 0.9653782

00:18:10.994 --> 00:18:12.455 massaging towards the anastomosis

NOTE Confidence: 0.98087144

00:18:13.075 --> 00:18:13.655 as well.

NOTE Confidence: 0.9959811

00:18:13.955 --> 00:18:15.234 And the goal is to

NOTE Confidence: 0.9959811

00:18:15.555 --> 00:18:16.755 for them to decrease the

NOTE Confidence: 0.9959811

00:18:16.755 --> 00:18:18.515 amount of compression and time

NOTE Confidence: 0.9959811

00:18:18.515 --> 00:18:19.795 they actually spend on their

NOTE Confidence: 0.9959811

00:18:19.795 --> 00:18:20.295 lymphedema

NOTE Confidence: 0.9998713

00:18:20.595 --> 00:18:21.095 care.

NOTE Confidence: 0.97633135

00:18:22.130 --> 00:18:23.810 We also, we started a

NOTE Confidence: 0.97633135

00:18:23.810 --> 00:18:25.650 prospective study. So we wanted

NOTE Confidence: 0.97633135

00:18:25.650 --> 00:18:27.010 to see, do these things

NOTE Confidence: 0.97633135

00:18:27.010 --> 00:18:27.910 actually work?

NOTE Confidence: 0.9756689

00:18:28.369 --> 00:18:30.070 Does surgery actually work?

NOTE Confidence: 0.96243334

00:18:30.530 --> 00:18:32.290 So, we teamed up with,

NOTE Confidence: 0.96243334

00:18:32.530 --> 00:18:33.890 doctor Fifi Liu and her

NOTE Confidence: 0.96243334

00:18:33.890 --> 00:18:35.475 lab at Princess Margaret Hospital

NOTE Confidence: 0.96243334

00:18:35.475 --> 00:18:37.155 at my previous institution where

NOTE Confidence: 0.96243334

00:18:37.155 --> 00:18:38.515 we operated on patients who

NOTE Confidence: 0.96243334

00:18:38.515 --> 00:18:40.035 had lymphedema, and we followed

NOTE Confidence: 0.96243334

00:18:40.035 --> 00:18:40.934 them with time.

NOTE Confidence: 0.99961394

00:18:41.715 --> 00:18:42.215 Interestingly,

NOTE Confidence: 0.99432886

00:18:42.515 --> 00:18:43.875 they were really interested in

NOTE Confidence: 0.99432886

00:18:43.875 --> 00:18:45.815 looking at potentially any biomarkers

NOTE Confidence: 0.93609506

00:18:46.275 --> 00:18:47.494 or any transcriptome

NOTE Confidence: 0.99923784

00:18:47.955 --> 00:18:49.895 profiling for patients with lymphedema.

NOTE Confidence: 0.9878527

00:18:50.510 --> 00:18:51.570 We looked at PPARs,

NOTE Confidence: 0.8781147

00:18:52.030 --> 00:18:53.250 which are our paroxysone

NOTE Confidence: 0.981884

00:18:53.710 --> 00:18:55.730 proliferator activated receptors.

NOTE Confidence: 0.9353124

00:18:56.670 --> 00:18:58.590 We found interestingly that the

NOTE Confidence: 0.9353124

00:18:58.590 --> 00:19:00.690 dermal fibrosis staining in lymphedema

NOTE Confidence: 0.93575585

00:19:00.990 --> 00:19:01.730 is increased.

NOTE Confidence: 0.96922565

00:19:02.190 --> 00:19:03.915 We also looked at,

NOTE Confidence: 0.9434775

00:19:04.315 --> 00:19:06.155 RNA sequencing, and we looked

NOTE Confidence: 0.9434775

00:19:06.155 --> 00:19:07.355 at heat maps to look

NOTE Confidence: 0.9434775

00:19:07.355 --> 00:19:08.494 at what is downregulated,

NOTE Confidence: 0.99030375

00:19:08.875 --> 00:19:09.994 and we noticed that these

NOTE Confidence: 0.99030375

00:19:09.994 --> 00:19:10.494 PPARs

NOTE Confidence: 0.99193746

00:19:10.795 --> 00:19:11.855 were actually downregulated

NOTE Confidence: 0.99590516

00:19:12.234 --> 00:19:13.915 in patients with lymphedema. So

NOTE Confidence: 0.99590516

00:19:13.915 --> 00:19:15.355 these are from biopsies from

NOTE Confidence: 0.99590516

00:19:15.355 --> 00:19:15.960 their skin.

NOTE Confidence: 0.9796486

00:19:16.679 --> 00:19:17.659 And more importantly,

NOTE Confidence: 0.9899794

00:19:17.960 --> 00:19:19.740 we looked at IL seventeen

NOTE Confidence: 0.9899794

00:19:19.960 --> 00:19:21.340 signaling using immunohistochemistry,

NOTE Confidence: 0.9905013

00:19:22.039 --> 00:19:23.159 and we found that there

NOTE Confidence: 0.9905013

00:19:23.159 --> 00:19:23.980 was an upregulation

NOTE Confidence: 0.9979253

00:19:24.440 --> 00:19:25.960 of IL seventeen. So what

NOTE Confidence: 0.9979253

00:19:25.960 --> 00:19:26.859 does this mean?

NOTE Confidence: 0.98920697

00:19:27.320 --> 00:19:28.380 So these PPARs

NOTE Confidence: 0.9229614

00:19:28.760 --> 00:19:30.600 are fatty acid sensors. They're

NOTE Confidence: 0.9229614

00:19:30.600 --> 00:19:31.080 involved in transcription. They're involved

NOTE Confidence: 0.9229614

00:19:31.080 --> 00:19:32.855 in transcription. They're involved in

NOTE Confidence: 0.9229614

00:19:32.855 --> 00:19:33.355 adipogenesis,

NOTE Confidence: 0.99889576

00:19:34.054 --> 00:19:34.955 lipid metabolism,

NOTE Confidence: 0.9968614

00:19:35.734 --> 00:19:36.794 insulin sensitivity,

NOTE Confidence: 0.99975014

00:19:37.575 --> 00:19:39.514 and maintenance of metabolic homeostasis.

NOTE Confidence: 0.99248993

00:19:40.695 --> 00:19:42.855 Their reduced expression really suggests

NOTE Confidence: 0.99248993

00:19:42.855 --> 00:19:44.455 that there's a metabolic shift

NOTE Confidence: 0.99248993

00:19:44.455 --> 00:19:45.975 that could contribute to this

NOTE Confidence: 0.99248993

00:19:45.975 --> 00:19:46.475 inflammatory

NOTE Confidence: 0.9755861

00:19:46.934 --> 00:19:49.170 stage, and the RNA sequencing

NOTE Confidence: 0.961472

00:19:49.550 --> 00:19:51.490 of these tissues really demonstrated

NOTE Confidence: 0.961472

00:19:51.550 --> 00:19:52.850 that there's a down regulation

NOTE Confidence: 0.961472

00:19:52.990 --> 00:19:53.730 of these

NOTE Confidence: 0.9709623

00:19:54.110 --> 00:19:56.050 and including different targets.

NOTE Confidence: 0.8569591

00:19:56.750 --> 00:19:58.369 So really this highlights,

NOTE Confidence: 0.99899316

00:19:59.310 --> 00:20:01.250 the role of particular

NOTE Confidence: 0.9795758

00:20:01.550 --> 00:20:02.610 genes in this,

NOTE Confidence: 0.8771854

00:20:02.975 --> 00:20:04.435 most specifically PPAR

NOTE Confidence: 0.9723854

00:20:05.055 --> 00:20:07.475 gamma and other related FAO

NOTE Confidence: 0.9723854

00:20:07.535 --> 00:20:08.035 genes.

NOTE Confidence: 0.97810906

00:20:08.815 --> 00:20:10.175 They were really interested in

NOTE Confidence: 0.97810906

00:20:10.175 --> 00:20:11.455 looking at, can we have

NOTE Confidence: 0.97810906

00:20:11.455 --> 00:20:13.375 target therapeutics for patients who

NOTE Confidence: 0.97810906

00:20:13.375 --> 00:20:14.515 currently have lymphedema?

NOTE Confidence: 0.9763129

00:20:15.179 --> 00:20:16.619 So we know from these

NOTE Confidence: 0.9763129

00:20:16.619 --> 00:20:19.019 observations that lymphedema is linked

NOTE Confidence: 0.9763129

00:20:19.019 --> 00:20:19.759 to obesity,

NOTE Confidence: 0.98406124

00:20:20.139 --> 00:20:21.919 but also metabolic syndrome.

NOTE Confidence: 0.9985858

00:20:23.100 --> 00:20:24.220 And the goal from this

NOTE Confidence: 0.9985858

00:20:24.220 --> 00:20:25.980 was to really investigate these

NOTE Confidence: 0.9985858

00:20:25.980 --> 00:20:28.059 metabolic alterations at the time

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NOTE Confidence: 0.9985858

00:20:28.059 --> 00:20:29.279 of cancer surgery.

NOTE Confidence: 0.95584273

00:20:29.785 --> 00:20:31.325 Our goal is to identify

NOTE Confidence: 0.95584273

00:20:31.545 --> 00:20:33.325 the early markers of lymphedema

NOTE Confidence: 0.95584273

00:20:33.545 --> 00:20:35.005 risk, to evaluate

NOTE Confidence: 0.99426293

00:20:35.305 --> 00:20:36.365 baseline inflammatory

NOTE Confidence: 0.96709514

00:20:36.665 --> 00:20:38.665 markers and cytokines in patients

NOTE Confidence: 0.96709514

00:20:38.665 --> 00:20:39.484 who are undergoing

NOTE Confidence: 0.91922575

00:20:39.865 --> 00:20:40.585 lymph node,

NOTE Confidence: 0.949097

00:20:40.905 --> 00:20:41.405 dissection,

NOTE Confidence: 0.99008626

00:20:42.160 --> 00:20:43.680 to understand the roles of

NOTE Confidence: 0.99008626

00:20:43.680 --> 00:20:46.020 PPAR gamma and FAO pathways.

NOTE Confidence: 0.99787265

00:20:46.560 --> 00:20:48.480 It could really, help in

NOTE Confidence: 0.99787265

00:20:48.480 --> 00:20:48.980 predicting

NOTE Confidence: 0.99121815

00:20:49.280 --> 00:20:51.140 a framework for assessing lymphedema

NOTE Confidence: 0.99121815

00:20:51.359 --> 00:20:53.200 risk and to really bridge

NOTE Confidence: 0.99121815

00:20:53.200 --> 00:20:54.580 the gap between inflammatory

NOTE Confidence: 0.9655568

00:20:55.040 --> 00:20:56.415 states and later metabolic

NOTE Confidence: 0.99162555

00:20:57.035 --> 00:20:58.494 dysfunction in these patients.

NOTE Confidence: 0.94689316

00:20:58.875 --> 00:21:00.315 And, ultimately, the goal is

NOTE Confidence: 0.94689316

00:21:00.315 --> 00:21:02.335 to identify a buy biomarker

NOTE Confidence: 0.94689316

00:21:02.395 --> 00:21:04.075 that predicts who will develop

NOTE Confidence: 0.94689316

00:21:04.075 --> 00:21:04.575 lymphedema.

NOTE Confidence: 0.9984077

00:21:05.915 --> 00:21:07.195 So with these patients as

NOTE Confidence: 0.9984077

00:21:07.195 --> 00:21:08.655 well, we did a prospective

NOTE Confidence: 0.9984077

00:21:08.910 --> 00:21:10.430 study looking at the impact

NOTE Confidence: 0.9984077

00:21:10.430 --> 00:21:11.410 of lymphovenous

NOTE Confidence: 0.9829519

00:21:11.710 --> 00:21:12.210 bypass,

NOTE Confidence: 0.99873513

00:21:12.670 --> 00:21:14.050 and lymphovenous anastomosis

NOTE Confidence: 0.9891033

00:21:14.430 --> 00:21:15.710 as a treatment for upper

NOTE Confidence: 0.9891033

00:21:15.710 --> 00:21:16.930 and lower limb lymphedema.

NOTE Confidence: 0.9212465

00:21:17.550 --> 00:21:19.390 And Catherine Bowman, who's currently

NOTE Confidence: 0.9212465

00:21:19.390 --> 00:21:21.250 doing her PhD at Stanford,

NOTE Confidence: 0.98637205

00:21:21.775 --> 00:21:22.755 worked on this,

NOTE Confidence: 0.9964623

00:21:23.295 --> 00:21:24.975 with our cohort, our patients

NOTE Confidence: 0.9964623

00:21:24.975 --> 00:21:25.715 from Toronto.

NOTE Confidence: 0.97986317

00:21:26.415 --> 00:21:27.934 She is going back to

NOTE Confidence: 0.97986317

00:21:27.934 --> 00:21:29.934 do her, medical school in

NOTE Confidence: 0.97986317

00:21:29.934 --> 00:21:31.455 Calgary after she's done her

NOTE Confidence: 0.97986317

00:21:31.455 --> 00:21:32.734 PhD, but this was one

NOTE Confidence: 0.97986317

00:21:32.734 --> 00:21:34.175 of hers, the studies that

NOTE Confidence: 0.97986317

00:21:34.175 --> 00:21:34.830 she worked on.

NOTE Confidence: 0.9950212

00:21:35.549 --> 00:21:36.990 So I wanna first thank,

NOTE Confidence: 0.9991234

00:21:37.390 --> 00:21:38.289 all the members

NOTE Confidence: 0.9611806

00:21:38.590 --> 00:21:39.950 involved in this study. We

NOTE Confidence: 0.9611806

00:21:39.950 --> 00:21:40.909 had a lot of patient

NOTE Confidence: 0.9611806

00:21:40.909 --> 00:21:42.510 advisers for the study who

NOTE Confidence: 0.9611806

00:21:42.510 --> 00:21:43.409 had invaluable

NOTE Confidence: 0.99906063

00:21:43.710 --> 00:21:44.210 contributions.

NOTE Confidence: 0.97127706

00:21:44.909 --> 00:21:45.950 We had a we did

NOTE Confidence: 0.97127706

00:21:45.950 --> 00:21:47.390 a lot of interviews with

NOTE Confidence: 0.97127706

00:21:47.390 --> 00:21:48.750 these patients, and we had

NOTE Confidence: 0.97127706

00:21:48.750 --> 00:21:49.570 a lot of study

NOTE Confidence: 0.987796

00:21:50.924 --> 00:21:52.525 participants. So we wanted to

NOTE Confidence: 0.987796

00:21:52.525 --> 00:21:53.984 look at whether or not,

NOTE Confidence: 0.98141706

00:21:55.405 --> 00:21:57.164 prospectively, we can are we

NOTE Confidence: 0.98141706

00:21:57.164 --> 00:21:59.025 decreasing volume? But more importantly,

NOTE Confidence: 0.98141706

00:21:59.085 --> 00:22:00.365 can we look at quality

NOTE Confidence: 0.98141706

00:22:00.365 --> 00:22:01.825 of life for these patients?

NOTE Confidence: 0.98337936

00:22:02.600 --> 00:22:04.040 So what we used is

NOTE Confidence: 0.98337936

00:22:04.040 --> 00:22:05.880 we had initial consult with

NOTE Confidence: 0.98337936

00:22:05.880 --> 00:22:07.320 the with our patients with

NOTE Confidence: 0.98337936

00:22:07.320 --> 00:22:08.920 lymphedema. They had a clinical

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NOTE Confidence: 0.98337936

00:22:08.920 --> 00:22:09.420 appointment.

NOTE Confidence: 0.97009134

00:22:09.800 --> 00:22:11.480 We used ICG Green to

NOTE Confidence: 0.97009134

00:22:11.480 --> 00:22:12.920 map them in the clinic.

NOTE Confidence: 0.97009134

00:22:12.920 --> 00:22:13.740 We identified

NOTE Confidence: 0.9976683

00:22:14.040 --> 00:22:15.880 them as possible candidate for

NOTE Confidence: 0.9976683

00:22:15.880 --> 00:22:16.380 lymphovenous

NOTE Confidence: 0.9996992

00:22:16.680 --> 00:22:17.580 bypass surgery.

NOTE Confidence: 0.988044

00:22:18.175 --> 00:22:19.855 They under they had already

NOTE Confidence: 0.988044

00:22:19.855 --> 00:22:21.775 been doing CDT, but they

NOTE Confidence: 0.988044

00:22:21.775 --> 00:22:22.275 underwent

NOTE Confidence: 0.9966208

00:22:22.575 --> 00:22:24.415 a two week bandaging regimen,

NOTE Confidence: 0.9966208

00:22:24.415 --> 00:22:25.695 which is a three layer

NOTE Confidence: 0.9966208

00:22:25.695 --> 00:22:26.195 compression.

NOTE Confidence: 0.99625224

00:22:26.975 --> 00:22:28.755 They then underwent a preoperative

NOTE Confidence: 0.99625224

00:22:28.975 --> 00:22:29.475 assessment

NOTE Confidence: 0.99843174

00:22:30.369 --> 00:22:32.149 of limb measures, questionnaires,

NOTE Confidence: 0.99398166

00:22:32.850 --> 00:22:33.350 interviews.

NOTE Confidence: 0.90413916

00:22:33.970 --> 00:22:36.070 They underwent their lymphovenous anastomosis

NOTE Confidence: 0.988877

00:22:36.450 --> 00:22:36.950 intraoperatively

NOTE Confidence: 0.90971255

00:22:37.809 --> 00:22:39.330 and then underwent six weeks

NOTE Confidence: 0.90971255

00:22:39.330 --> 00:22:41.250 of bandaging regimen after, and

NOTE Confidence: 0.90971255

00:22:41.250 --> 00:22:42.915 we followed them post postoperatively

NOTE Confidence: 0.9538246

00:22:43.375 --> 00:22:45.075 where we performed limb measurements

NOTE Confidence: 0.9538246

00:22:45.135 --> 00:22:45.635 again,

NOTE Confidence: 0.9986963

00:22:46.095 --> 00:22:46.595 questionnaires,

NOTE Confidence: 0.8553084

00:22:47.135 --> 00:22:47.635 interviews,

NOTE Confidence: 0.9989831

00:22:48.175 --> 00:22:49.295 and I wanna show some

NOTE Confidence: 0.9989831

00:22:49.295 --> 00:22:50.675 of the results from this.

NOTE Confidence: 0.97404903

00:22:51.375 --> 00:22:53.295 So the primary outcome that

NOTE Confidence: 0.97404903

00:22:53.295 --> 00:22:54.575 we looked at was limb

NOTE Confidence: 0.97404903

00:22:54.575 --> 00:22:57.210 volume changed based upon circumferential

NOTE Confidence: 0.97404903

00:22:57.430 --> 00:22:58.790 measurements, and we did find

NOTE Confidence: 0.97404903

00:22:58.790 --> 00:23:00.010 that there was a significant

NOTE Confidence: 0.97404903

00:23:00.230 --> 00:23:01.750 decrease in their in their

NOTE Confidence: 0.97404903

00:23:01.750 --> 00:23:03.190 volume measurements. But what was

NOTE Confidence: 0.97404903

00:23:03.190 --> 00:23:04.310 important for us was to

NOTE Confidence: 0.97404903

00:23:04.310 --> 00:23:05.290 look at the secondary

NOTE Confidence: 0.7396904

00:23:05.670 --> 00:23:08.410 quantity quali quant qualitative outcomes.

NOTE Confidence: 0.9657351

00:23:09.034 --> 00:23:10.715 So we perform semi structured

NOTE Confidence: 0.9657351

00:23:10.715 --> 00:23:12.475 interviews that really focus on

NOTE Confidence: 0.9657351

00:23:12.475 --> 00:23:13.615 quality of life,

NOTE Confidence: 0.99753714

00:23:14.154 --> 00:23:14.654 psychosocial

NOTE Confidence: 0.99961615

00:23:14.955 --> 00:23:15.455 well-being,

NOTE Confidence: 0.9843922

00:23:16.075 --> 00:23:16.575 symptomology,

NOTE Confidence: 0.9894048

00:23:17.434 --> 00:23:17.934 function,

NOTE Confidence: 0.99588627

00:23:18.394 --> 00:23:19.695 and surgical experience.

NOTE Confidence: 0.98796177

00:23:20.315 --> 00:23:21.510 So these are our results.

NOTE Confidence: 0.9663404

00:23:22.230 --> 00:23:23.830 So our findings in terms

NOTE Confidence: 0.9663404

00:23:23.830 --> 00:23:24.490 of demographics

NOTE Confidence: 0.98427695

00:23:24.869 --> 00:23:26.230 are most reflective of the

NOTE Confidence: 0.98427695

00:23:26.230 --> 00:23:28.230 published literature. So the majority

NOTE Confidence: 0.98427695

00:23:28.230 --> 00:23:29.609 of patients were female.

NOTE Confidence: 0.9942943

00:23:29.990 --> 00:23:31.450 They had stage two lymphedema

NOTE Confidence: 0.98328626

00:23:31.830 --> 00:23:33.290 and a history of cancer.

NOTE Confidence: 0.9965579

00:23:34.934 --> 00:23:36.455 And when we looked at,

NOTE Confidence: 0.9919397

00:23:37.015 --> 00:23:39.015 at some scores, some quality

NOTE Confidence: 0.9919397

00:23:39.015 --> 00:23:40.455 of life scores that were

NOTE Confidence: 0.9919397

00:23:40.455 --> 00:23:40.855 not,

NOTE Confidence: 0.91562176

00:23:41.255 --> 00:23:43.335 for lymphedema in particular, there

NOTE Confidence: 0.91562176

00:23:43.335 --> 00:23:45.095 was no significant in decrease,

NOTE Confidence: 0.91562176

00:23:45.414 --> 00:23:46.635 increase or decrease.

NOTE Confidence: 0.97877425

00:23:47.174 --> 00:23:48.395 There was just no significance.

NOTE Confidence: 0.97877425

00:23:48.535 --> 00:23:50.190 But when we looked at

NOTE Confidence: 0.97877425

00:23:50.190 --> 00:23:51.710 quality of life score, so

NOTE Confidence: 0.97877425

00:23:51.710 --> 00:23:53.149 lymph quality of life score,

NOTE Confidence: 0.97877425

00:23:53.149 --> 00:23:54.450 we noticed that preoperatively

NOTE Confidence: 0.9867354

00:23:55.230 --> 00:23:57.070 compared to postoperatively, there was

NOTE Confidence: 0.9867354

00:23:57.070 --> 00:23:58.510 an increase in their quality

NOTE Confidence: 0.9867354

00:23:58.510 --> 00:23:59.570 of life score.

NOTE Confidence: 0.992916

00:24:00.270 --> 00:24:01.309 So let's look at some

NOTE Confidence: 0.992916

00:24:01.309 --> 00:24:03.649 of the preoperative qualitative findings.

NOTE Confidence: 0.99953544

00:24:04.109 --> 00:24:04.609 So

NOTE Confidence: 0.9947958

00:24:05.225 --> 00:24:06.905 in terms of functional impacts

NOTE Confidence: 0.9947958

00:24:06.905 --> 00:24:08.765 of lymphedema on their activities

NOTE Confidence: 0.9947958

00:24:08.825 --> 00:24:10.765 of daily living, their mobility,

NOTE Confidence: 0.9866621

00:24:11.145 --> 00:24:13.385 and their activity limits, ninety

NOTE Confidence: 0.9866621

00:24:13.385 --> 00:24:14.825 three percent of these patients

NOTE Confidence: 0.9866621

00:24:14.825 --> 00:24:16.265 had an it had an

NOTE Confidence: 0.9866621

00:24:16.265 --> 00:24:17.705 impact on their activities of

NOTE Confidence: 0.9866621

00:24:17.705 --> 00:24:18.480 daily living.

NOTE Confidence: 0.977533

00:24:19.040 --> 00:24:20.480 Eighty seven percent of them

NOTE Confidence: 0.977533

00:24:20.480 --> 00:24:21.780 had limited activity.

NOTE Confidence: 0.8778314

00:24:22.559 --> 00:24:24.500 Seventy nine percent, it affected

NOTE Confidence: 0.8778314

00:24:24.720 --> 00:24:25.460 their mobility,

NOTE Confidence: 0.96589965

00:24:26.000 --> 00:24:27.520 and seventy three percent, it

NOTE Confidence: 0.96589965

00:24:27.520 --> 00:24:28.020 impacted

NOTE Confidence: 0.9982908

00:24:28.480 --> 00:24:29.299 on exercise.

NOTE Confidence: 0.9382894

00:24:29.679 --> 00:24:31.585 So a patient said I

NOTE Confidence: 0.9382894

00:24:31.585 --> 00:24:32.725 cannot lift things.

NOTE Confidence: 0.9973681

00:24:33.184 --> 00:24:34.144 It would have been easy

NOTE Confidence: 0.9973681

00:24:34.144 --> 00:24:35.744 to lift them before. There

NOTE Confidence: 0.9973681

00:24:35.744 --> 00:24:37.264 are times where I need

NOTE Confidence: 0.9973681

00:24:37.264 --> 00:24:38.965 actual help to get dressed.

NOTE Confidence: 0.9973681

00:24:39.184 --> 00:24:40.384 There are just things that

NOTE Confidence: 0.9973681

00:24:40.384 --> 00:24:41.524 I can't do anymore.

NOTE Confidence: 0.9996959

00:24:42.384 --> 00:24:44.005 In terms of physical symptoms,

NOTE Confidence: 0.9835496

00:24:44.970 --> 00:24:47.070 ninety one percent reported swelling

NOTE Confidence: 0.9835496

00:24:47.130 --> 00:24:49.369 and sixty percent reported pain.

NOTE Confidence: 0.9835496

00:24:49.369 --> 00:24:50.970 We often don't consider pain

NOTE Confidence: 0.9835496

00:24:50.970 --> 00:24:52.830 as something associated with lymphedema,

NOTE Confidence: 0.9998815

00:24:53.130 --> 00:24:54.270 but it can be.

NOTE Confidence: 0.95112693

00:24:54.650 --> 00:24:55.869 The pain is debilitating,

NOTE Confidence: 0.99661845

00:24:56.330 --> 00:24:57.850 and the pain causes me

NOTE Confidence: 0.99661845

00:24:57.850 --> 00:24:59.595 stress, which is very hard

NOTE Confidence: 0.99661845

00:24:59.595 --> 00:25:00.815 on my mental health.

NOTE Confidence: 0.9645775

00:25:01.595 --> 00:25:03.755 In terms of psychosocial impact,

NOTE Confidence: 0.9645775

00:25:03.755 --> 00:25:04.895 so on anxiety,

NOTE Confidence: 0.9923703

00:25:05.435 --> 00:25:07.355 low mood, and chronic disease

NOTE Confidence: 0.9923703

00:25:07.355 --> 00:25:07.855 coping,

NOTE Confidence: 0.98208946

00:25:08.155 --> 00:25:10.015 seventy seven percent of patients

NOTE Confidence: 0.98208946

00:25:10.075 --> 00:25:11.835 had an impact on low

NOTE Confidence: 0.98208946

00:25:11.835 --> 00:25:12.270 mood.

NOTE Confidence: 0.98510617

00:25:12.750 --> 00:25:14.750 Fifty five percent talked about

NOTE Confidence: 0.98510617

00:25:14.750 --> 00:25:15.250 anxiety.

NOTE Confidence: 0.99394214

00:25:15.869 --> 00:25:17.630 Eighteen percent had anxiety with

NOTE Confidence: 0.99394214

00:25:17.630 --> 00:25:18.850 their upcoming surgery.

NOTE Confidence: 0.9991873

00:25:19.230 --> 00:25:21.090 Thirty six percent had anxiety

NOTE Confidence: 0.9991873

00:25:21.310 --> 00:25:23.090 related to their disease progression.

NOTE Confidence: 0.9819627

00:25:23.790 --> 00:25:25.470 I'm strong minded, so when

NOTE Confidence: 0.9819627

00:25:25.470 --> 00:25:26.830 I talk to somebody one

NOTE Confidence: 0.9819627

00:25:26.830 --> 00:25:27.845 on one like this, I

NOTE Confidence: 0.9819627

00:25:27.845 --> 00:25:28.505 get emotional.

NOTE Confidence: 0.9829889

00:25:29.125 --> 00:25:30.085 But in front of my

NOTE Confidence: 0.9829889

00:25:30.085 --> 00:25:31.285 family, I put on a

NOTE Confidence: 0.9829889

00:25:31.285 --> 00:25:32.805 very, very brave face, and

NOTE Confidence: 0.9829889

00:25:32.805 --> 00:25:33.765 I try to push it

NOTE Confidence: 0.9829889

00:25:33.765 --> 00:25:35.445 through, or I can pretend

NOTE Confidence: 0.9829889

00:25:35.445 --> 00:25:36.645 that I'm okay so they

NOTE Confidence: 0.9829889

00:25:36.645 --> 00:25:37.305 don't worry.

NOTE Confidence: 0.9996946

00:25:38.005 --> 00:25:39.225 In terms of cellulitis,

NOTE Confidence: 0.92740864

00:25:39.845 --> 00:25:40.965 forty one percent of our

NOTE Confidence: 0.92740864

00:25:40.965 --> 00:25:42.425 patients experienced cellulitis.

NOTE Confidence: 0.9992614

00:25:42.830 --> 00:25:44.369 With more than one episode,

NOTE Confidence: 0.99202514

00:25:44.830 --> 00:25:46.770 they reported fear and distress

NOTE Confidence: 0.99202514

00:25:46.830 --> 00:25:48.750 related to cellulitis, and twenty

NOTE Confidence: 0.99202514

00:25:48.750 --> 00:25:50.109 four percent of them were

NOTE Confidence: 0.99202514

00:25:50.109 --> 00:25:50.609 hospitalized.

NOTE Confidence: 0.9935019

00:25:51.310 --> 00:25:52.910 I'm always concerned that the

NOTE Confidence: 0.9935019

00:25:52.910 --> 00:25:54.690 antibiotics will stop working,

NOTE Confidence: 0.9593589

00:25:54.990 --> 00:25:56.290 that I'll have a raging

NOTE Confidence: 0.9593589

00:25:56.350 --> 00:25:57.570 uncontrolled infection,

NOTE Confidence: 0.9745869

00:25:58.109 --> 00:25:59.785 and there's also a potential

NOTE Confidence: 0.9745869

00:25:59.924 --> 00:26:00.664 for death.

NOTE Confidence: 0.99946755

00:26:01.525 --> 00:26:03.145 In terms of treatment modalities,

NOTE Confidence: 0.992065

00:26:03.845 --> 00:26:05.205 these patients have pretty much

NOTE Confidence: 0.992065

00:26:05.205 --> 00:26:07.225 tried it all. Obviously, compression

NOTE Confidence: 0.992065

00:26:07.365 --> 00:26:09.065 and manual lymphatic drainage,

NOTE Confidence: 0.9995574

00:26:09.605 --> 00:26:10.105 exercise,

NOTE Confidence: 0.9176529

00:26:10.565 --> 00:26:12.779 nomadic pump, skin care. There's

NOTE Confidence: 0.9176529

00:26:12.779 --> 00:26:14.220 always some sort of new

NOTE Confidence: 0.9176529

00:26:14.220 --> 00:26:14.720 device.

NOTE Confidence: 0.9967805

00:26:15.100 --> 00:26:16.059 And there's a lot of

NOTE Confidence: 0.9967805

00:26:16.059 --> 00:26:16.960 treatment challenges

NOTE Confidence: 0.99235946

00:26:17.899 --> 00:26:19.119 related to discomfort,

NOTE Confidence: 0.9529108

00:26:19.740 --> 00:26:20.880 improper fitting,

NOTE Confidence: 0.9610181

00:26:21.260 --> 00:26:21.760 financially,

NOTE Confidence: 0.99516153

00:26:22.380 --> 00:26:24.080 as well as mobility restriction.

NOTE Confidence: 0.99300146

00:26:24.664 --> 00:26:26.585 I hate compression garments. I

NOTE Confidence: 0.99300146

00:26:26.585 --> 00:26:28.265 don't think anyone likes wearing

NOTE Confidence: 0.99300146

00:26:28.265 --> 00:26:29.784 them. It's like wearing a

NOTE Confidence: 0.99300146

00:26:29.784 --> 00:26:31.544 scuba suit. It's difficult to

NOTE Confidence: 0.99300146

00:26:31.544 --> 00:26:32.044 walk.

NOTE Confidence: 0.9901075

00:26:32.345 --> 00:26:33.865 I get shortness of breath

NOTE Confidence: 0.9901075

00:26:33.865 --> 00:26:35.385 walking up a hill because

NOTE Confidence: 0.9901075

00:26:35.385 --> 00:26:37.804 there's, like, this added resistance.

NOTE Confidence: 0.9868606

00:26:38.899 --> 00:26:40.019 Now let's look at our

NOTE Confidence: 0.9868606

00:26:40.019 --> 00:26:40.519 postoperative

NOTE Confidence: 0.9953588

00:26:40.820 --> 00:26:42.039 qualitative findings.

NOTE Confidence: 0.98114175

00:26:42.980 --> 00:26:44.519 In terms of limb volume,

NOTE Confidence: 0.98114175

00:26:44.740 --> 00:26:45.240 discomfort,

NOTE Confidence: 0.99821365

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00:26:45.779 --> 00:26:48.200 pain, heaviness, tightness, and tingling,

NOTE Confidence: 0.99821365

00:26:48.419 --> 00:26:49.880 eighty eight percent of patients

NOTE Confidence: 0.99821365

00:26:49.940 --> 00:26:51.559 reported reduction in heaviness.

NOTE Confidence: 0.9994989

00:26:52.260 --> 00:26:53.619 So heaviness is one of

NOTE Confidence: 0.9994989

00:26:53.619 --> 00:26:55.035 these things that I feel

NOTE Confidence: 0.9994989

00:26:55.035 --> 00:26:56.895 we don't ask about enough.

NOTE Confidence: 0.9678846

00:26:57.675 --> 00:26:59.355 It's the patients that come

NOTE Confidence: 0.9678846

00:26:59.355 --> 00:27:01.055 with stage zero disease,

NOTE Confidence: 0.96623737

00:27:01.675 --> 00:27:02.795 and, you know, we do

NOTE Confidence: 0.96623737

00:27:02.795 --> 00:27:04.575 this we do different measurements,

NOTE Confidence: 0.96623737

00:27:04.715 --> 00:27:05.595 and we don't see a

NOTE Confidence: 0.96623737

00:27:05.595 --> 00:27:07.275 difference at all, but, really,

NOTE Confidence: 0.96623737

00:27:07.275 --> 00:27:08.790 they're feeling heavy. So those

NOTE Confidence: 0.96623737

00:27:08.790 --> 00:27:09.830 are the patients we need

NOTE Confidence: 0.96623737

00:27:09.830 --> 00:27:10.650 to see early.

NOTE Confidence: 0.9716538

00:27:11.030 --> 00:27:12.310 Eighty three percent of them

NOTE Confidence: 0.9716538

00:27:12.310 --> 00:27:13.610 reported pain reduction,

NOTE Confidence: 0.99882233

00:27:13.990 --> 00:27:15.270 seventy eight percent of them

NOTE Confidence: 0.99882233

00:27:15.270 --> 00:27:16.570 reported volume reduction,

NOTE Confidence: 0.99854386

00:27:16.950 --> 00:27:19.190 and sixty seven percent reported

NOTE Confidence: 0.99854386

00:27:19.190 --> 00:27:20.490 reduction in discomfort.

NOTE Confidence: 0.99294645

00:27:21.030 --> 00:27:22.630 It's been almost two years

NOTE Confidence: 0.99294645

00:27:22.630 --> 00:27:24.325 since I've had this, the

NOTE Confidence: 0.99294645

00:27:24.325 --> 00:27:24.825 surgery,

NOTE Confidence: 0.99845195

00:27:25.685 --> 00:27:26.885 and I was dealing with

NOTE Confidence: 0.99845195

00:27:26.885 --> 00:27:28.885 constant pain and swelling. And

NOTE Confidence: 0.99845195

00:27:28.885 --> 00:27:30.405 after the surgery, I've noticed

NOTE Confidence: 0.99845195

00:27:30.405 --> 00:27:31.385 a huge improvement.

NOTE Confidence: 0.99866277

00:27:32.405 --> 00:27:34.105 In terms of functional impacts

NOTE Confidence: 0.99866277

00:27:34.165 --> 00:27:34.905 of LVA,

NOTE Confidence: 0.9848943

00:27:35.445 --> 00:27:37.445 I'm moving heavier things. I'm

NOTE Confidence: 0.9848943

00:27:37.445 --> 00:27:39.230 lifting heavier loads, so it

NOTE Confidence: 0.9848943

00:27:39.230 --> 00:27:40.910 could be anything from groceries

NOTE Confidence: 0.9848943

00:27:40.910 --> 00:27:41.570 to furniture.

NOTE Confidence: 0.9959792

00:27:42.030 --> 00:27:42.850 I'm participating

NOTE Confidence: 0.9409478

00:27:43.230 --> 00:27:44.590 more in moving those types

NOTE Confidence: 0.9409478

00:27:44.590 --> 00:27:46.109 of things before I and

NOTE Confidence: 0.9409478

00:27:46.109 --> 00:27:47.090 I wouldn't before.

NOTE Confidence: 0.92068046

00:27:47.630 --> 00:27:48.930 More rigorous cleaning,

NOTE Confidence: 0.973444

00:27:49.390 --> 00:27:51.310 some more sustained activity where

NOTE Confidence: 0.973444

00:27:51.310 --> 00:27:52.910 I have where usually I

NOTE Confidence: 0.973444

00:27:52.910 --> 00:27:54.030 would take more time to

NOTE Confidence: 0.973444

00:27:54.030 --> 00:27:54.530 rest.

NOTE Confidence: 0.9987945

00:27:55.285 --> 00:27:56.585 In terms of appearance,

NOTE Confidence: 0.96503

00:27:56.885 --> 00:27:59.225 anxiety, depression, fears, and worries,

NOTE Confidence: 0.9708879

00:27:59.605 --> 00:28:01.045 seventy five percent had a

NOTE Confidence: 0.9708879

00:28:01.045 --> 00:28:02.505 positive change in appearance.

NOTE Confidence: 0.96333504

00:28:03.045 --> 00:28:04.645 Fifty percent of them had

NOTE Confidence: 0.96333504

00:28:04.645 --> 00:28:06.244 a fear that lymphedema would

NOTE Confidence: 0.96333504

00:28:06.244 --> 00:28:08.005 return, and fifty percent had

NOTE Confidence: 0.96333504

00:28:08.005 --> 00:28:09.225 move mood improvement.

NOTE Confidence: 0.9888451

00:28:09.809 --> 00:28:10.850 I can see my wrist

NOTE Confidence: 0.9888451

00:28:10.850 --> 00:28:11.970 bone, and I could never

NOTE Confidence: 0.9888451

00:28:11.970 --> 00:28:12.869 see it before.

NOTE Confidence: 0.9966643

00:28:13.330 --> 00:28:14.210 I might be able to

NOTE Confidence: 0.9966643

00:28:14.210 --> 00:28:15.890 get my wedding ring on

NOTE Confidence: 0.9966643

00:28:15.890 --> 00:28:17.590 soon, so that's pretty impressive.

NOTE Confidence: 0.9133513

00:28:18.769 --> 00:28:20.450 So the postoperative bandage reg

NOTE Confidence: 0.9133513

00:28:20.609 --> 00:28:21.109 regimen,

NOTE Confidence: 0.9997647

00:28:21.570 --> 00:28:22.965 it's not a mystery that

NOTE Confidence: 0.9997647

00:28:22.965 --> 00:28:24.005 they were not happy with

NOTE Confidence: 0.9997647

00:28:24.005 --> 00:28:24.505 it.

NOTE Confidence: 0.9772459

00:28:24.965 --> 00:28:26.164 So the only time I

NOTE Confidence: 0.9772459

00:28:26.164 --> 00:28:27.445 remove the bandaging is in

NOTE Confidence: 0.9772459

00:28:27.445 --> 00:28:28.484 the middle of the night.

NOTE Confidence: 0.9772459

00:28:28.484 --> 00:28:29.445 I try to change it

NOTE Confidence: 0.9772459

00:28:29.445 --> 00:28:30.804 at two o'clock. It starts

NOTE Confidence: 0.9772459

00:28:30.804 --> 00:28:32.484 bugging my feet. My feet

NOTE Confidence: 0.9772459

00:28:32.484 --> 00:28:34.424 start feeling weird like pain,

NOTE Confidence: 0.9772459

00:28:34.645 --> 00:28:36.005 and I feel needles, and

NOTE Confidence: 0.9772459

00:28:36.005 --> 00:28:37.480 then I feel numb, and

NOTE Confidence: 0.9772459

00:28:37.480 --> 00:28:38.519 then I have to remove

NOTE Confidence: 0.9772459

00:28:38.519 --> 00:28:40.380 the bandages. So there continues

NOTE Confidence: 0.9772459

00:28:40.440 --> 00:28:41.259 to be challenges.

NOTE Confidence: 0.96380764

00:28:42.039 --> 00:28:43.240 What were their reasons for

NOTE Confidence: 0.96380764

00:28:43.240 --> 00:28:44.380 seeking out surgery?

NOTE Confidence: 0.98308754

00:28:44.759 --> 00:28:46.360 Eighty percent of them were

NOTE Confidence: 0.98308754

00:28:46.360 --> 00:28:47.899 looking for symptom control.

NOTE Confidence: 0.9965851

00:28:48.600 --> 00:28:50.679 Forty percent had exhausted all

NOTE Confidence: 0.9965851

00:28:50.679 --> 00:28:52.755 other therapies, and thirty percent

NOTE Confidence: 0.9965851

00:28:52.755 --> 00:28:54.455 had a physiotherapy referral.

NOTE Confidence: 0.9995907

00:28:54.915 --> 00:28:56.615 It felt out of control.

NOTE Confidence: 0.99447393

00:28:57.155 --> 00:28:58.275 I went to lots and

NOTE Confidence: 0.99447393

00:28:58.275 --> 00:28:59.875 lots of appointments with therapists,

NOTE Confidence: 0.99447393

00:28:59.875 --> 00:29:00.995 and we weren't able to

NOTE Confidence: 0.99447393

00:29:00.995 --> 00:29:01.815 contain it.

NOTE Confidence: 0.98487175

00:29:02.435 --> 00:29:03.555 I was so worried that

NOTE Confidence: 0.98487175

00:29:03.555 --> 00:29:04.770 I would swell and swell,

NOTE Confidence: 0.98487175

00:29:04.770 --> 00:29:05.810 and one day I'd have

NOTE Confidence: 0.98487175

00:29:05.810 --> 00:29:07.010 an infection and I would

NOTE Confidence: 0.98487175

00:29:07.010 --> 00:29:08.370 lose my arm. I was

NOTE Confidence: 0.98487175

00:29:08.370 --> 00:29:09.730 so worried about it. I

NOTE Confidence: 0.98487175

00:29:09.730 --> 00:29:11.570 already lost body parts. I

NOTE Confidence: 0.98487175

00:29:11.570 --> 00:29:13.010 just need a break. I

NOTE Confidence: 0.98487175

00:29:13.010 --> 00:29:14.210 just want to focus on

NOTE Confidence: 0.98487175

00:29:14.210 --> 00:29:15.990 normal things like normal people.

NOTE Confidence: 0.9823327

00:29:17.255 --> 00:29:18.695 The meaning of surgery. They

NOTE Confidence: 0.9823327

00:29:18.695 --> 00:29:21.174 expressed things like gratitude, hope,

NOTE Confidence: 0.9823327

00:29:21.174 --> 00:29:23.335 and symptom control. Seventy percent

NOTE Confidence: 0.9823327

00:29:23.335 --> 00:29:25.515 had symptom and situational improvement.

NOTE Confidence: 0.99523944

00:29:26.215 --> 00:29:28.375 Sixty percent felt hope. Forty

NOTE Confidence: 0.99523944

00:29:28.375 --> 00:29:29.515 percent felt gratitude.

NOTE Confidence: 0.9891454

00:29:30.169 --> 00:29:31.450 Tears are coming to my

NOTE Confidence: 0.9891454

00:29:31.450 --> 00:29:32.570 eyes. It's hard to put

NOTE Confidence: 0.9891454

00:29:32.570 --> 00:29:34.169 into words. My best attempt

NOTE Confidence: 0.9891454

00:29:34.169 --> 00:29:35.309 is a fresh start,

NOTE Confidence: 0.9732197

00:29:35.610 --> 00:29:37.770 hopefulness, and care. I really

NOTE Confidence: 0.9732197

00:29:37.770 --> 00:29:39.610 feel cared for and so

NOTE Confidence: 0.9732197

00:29:39.610 --> 00:29:40.110 grateful

NOTE Confidence: 0.99100715

00:29:40.570 --> 00:29:41.610 for the help with this.

NOTE Confidence: 0.99100715

00:29:41.610 --> 00:29:43.335 Yes. It's surprising me too

NOTE Confidence: 0.99100715

00:29:43.335 --> 00:29:44.775 how different I feel now

NOTE Confidence: 0.99100715

00:29:44.775 --> 00:29:45.915 after having surgery.

NOTE Confidence: 0.9862088

00:29:46.535 --> 00:29:47.895 I always felt like there's

NOTE Confidence: 0.9862088

00:29:47.895 --> 00:29:49.735 a point I'm devoting so

NOTE Confidence: 0.9862088

00:29:49.735 --> 00:29:51.015 much time to this, but

NOTE Confidence: 0.9862088

00:29:51.015 --> 00:29:52.295 I can actually now see

NOTE Confidence: 0.9862088

00:29:52.295 --> 00:29:53.835 the results of my management

NOTE Confidence: 0.9862088

00:29:53.895 --> 00:29:54.395 clearly,

NOTE Confidence: 0.999724

00:29:54.830 --> 00:29:55.810 and I'm more motivated

NOTE Confidence: 0.9984734

00:29:56.190 --> 00:29:57.630 in doing this. I do

NOTE Confidence: 0.9984734

00:29:57.630 --> 00:29:58.750 feel like it's made a

NOTE Confidence: 0.9984734

00:29:58.750 --> 00:29:59.250 difference

NOTE Confidence: 0.99862814

00:29:59.630 --> 00:30:00.210 in terms

NOTE Confidence: 0.99938613

00:30:01.230 --> 00:30:02.830 of stopping the progression at

NOTE Confidence: 0.99938613

00:30:02.830 --> 00:30:03.870 the speed at which the

NOTE Confidence: 0.99938613

00:30:03.870 --> 00:30:04.850 disease progresses.

NOTE Confidence: 0.9954104

00:30:05.470 --> 00:30:06.670 I feel like I've gained

NOTE Confidence: 0.9954104

00:30:06.670 --> 00:30:07.950 some time. I'm not as

NOTE Confidence: 0.9954104

00:30:07.950 --> 00:30:09.965 worried about things going badly

NOTE Confidence: 0.9954104

00:30:09.965 --> 00:30:11.725 in five years. I'm now

NOTE Confidence: 0.9954104

00:30:11.725 --> 00:30:13.245 thinking, okay. Maybe this is

NOTE Confidence: 0.9954104

00:30:13.245 --> 00:30:14.925 a relatively good quality of

NOTE Confidence: 0.9954104

00:30:14.925 --> 00:30:16.045 life for the next ten

NOTE Confidence: 0.9954104

00:30:16.045 --> 00:30:17.245 to twenty years in terms

NOTE Confidence: 0.9954104

00:30:17.245 --> 00:30:18.305 of my leg alone.

NOTE Confidence: 0.9993556

00:30:18.685 --> 00:30:20.045 I'm not as worried about

NOTE Confidence: 0.9993556

00:30:20.045 --> 00:30:21.345 it. I feel relief.

NOTE Confidence: 0.9977234

00:30:22.260 --> 00:30:23.560 So in terms of synthesizing

NOTE Confidence: 0.9977234

00:30:23.780 --> 00:30:25.060 this data, we've come up

NOTE Confidence: 0.9977234

00:30:25.060 --> 00:30:26.520 with models of care.

NOTE Confidence: 0.9977356

00:30:27.140 --> 00:30:29.400 The fundamentals of surgical lymphedema

NOTE Confidence: 0.9977356

00:30:29.620 --> 00:30:31.380 care will center on patient

NOTE Confidence: 0.9977356

00:30:31.380 --> 00:30:32.520 screening and eligibility,

NOTE Confidence: 0.99749

00:30:33.700 --> 00:30:34.920 comprehensive perioperative

NOTE Confidence: 0.9996766

00:30:35.300 --> 00:30:35.800 education,

NOTE Confidence: 0.89546704

00:30:36.685 --> 00:30:38.385 postoperative functional rehabilitation,

NOTE Confidence: 0.9989951

00:30:39.485 --> 00:30:39.985 psychosocial

NOTE Confidence: 0.9990924

00:30:40.285 --> 00:30:41.505 support for anxieties,

NOTE Confidence: 0.9930711

00:30:41.805 --> 00:30:43.165 fears, and worries that they

NOTE Confidence: 0.9930711

00:30:43.165 --> 00:30:43.905 all express,

NOTE Confidence: 0.96127254

00:30:44.285 --> 00:30:46.365 and outcomes assessment, really looking

NOTE Confidence: 0.96127254

00:30:46.365 --> 00:30:48.445 at the timelines, frequency, and

NOTE Confidence: 0.96127254

00:30:48.445 --> 00:30:49.825 tools for these outcomes.

NOTE Confidence: 0.9981513

00:30:51.110 --> 00:30:52.390 So a second project that

NOTE Confidence: 0.9981513

00:30:52.390 --> 00:30:53.910 I wanna talk about is

NOTE Confidence: 0.9981513

00:30:53.910 --> 00:30:54.710 one that,

NOTE Confidence: 0.9559513

00:30:55.110 --> 00:30:56.630 Alex Matia has taken the

NOTE Confidence: 0.9559513

00:30:56.630 --> 00:30:57.830 lead on. She's a medical

NOTE Confidence: 0.9559513

00:30:57.830 --> 00:30:59.270 student in Florida working with

NOTE Confidence: 0.9559513

00:30:59.270 --> 00:31:00.230 us for a year as

NOTE Confidence: 0.9559513

00:31:00.230 --> 00:31:01.210 a research fellow.

NOTE Confidence: 0.9756121

00:31:01.670 --> 00:31:03.590 Looking at disparities in breast

NOTE Confidence: 0.9756121

00:31:03.590 --> 00:31:05.510 cancer related lymphedema, we did

NOTE Confidence: 0.9756121

00:31:05.510 --> 00:31:07.855 a systematic review of inequities

NOTE Confidence: 0.97811043

00:31:08.235 --> 00:31:09.615 and barriers in care.

NOTE Confidence: 0.99889576

00:31:10.794 --> 00:31:11.914 So we know that this

NOTE Confidence: 0.99889576

00:31:11.914 --> 00:31:13.135 is a chronic condition.

NOTE Confidence: 0.9897463

00:31:13.995 --> 00:31:15.195 We know that patients of

NOTE Confidence: 0.9897463

00:31:15.195 --> 00:31:17.375 diverse and disadvantaged patient populations

NOTE Confidence: 0.9897463

00:31:17.674 --> 00:31:18.975 continue to be understudied

74

NOTE Confidence: 0.9917275

00:31:19.355 --> 00:31:20.620 in the area of breast

NOTE Confidence: 0.9917275

00:31:20.620 --> 00:31:21.600 cancer survivorship.

NOTE Confidence: 0.99292994

00:31:22.460 --> 00:31:23.760 So we wanted to summarize

NOTE Confidence: 0.99292994

00:31:23.820 --> 00:31:25.500 the evidence for disparities and

NOTE Confidence: 0.99292994

00:31:25.500 --> 00:31:27.580 barriers surrounding breast cancer related

NOTE Confidence: 0.99292994

00:31:27.580 --> 00:31:30.559 lymphedema care, particularly in diagnosis

NOTE Confidence: 0.78461874

00:31:31.020 --> 00:31:31.760 and education

NOTE Confidence: 0.98062575

00:31:32.140 --> 00:31:32.960 and accessibility

NOTE Confidence: 0.92614424

00:31:33.340 --> 00:31:34.000 to treatment.

NOTE Confidence: 0.95446146

00:31:34.745 --> 00:31:36.265 So we did, we followed

NOTE Confidence: 0.95446146

00:31:36.265 --> 00:31:37.325 the PRISMA guidelines.

NOTE Confidence: 0.9286999

00:31:37.705 --> 00:31:39.225 We did a a search

NOTE Confidence: 0.9286999

00:31:39.225 --> 00:31:40.285 of, multiple,

NOTE Confidence: 0.8279584

00:31:40.985 --> 00:31:42.445 different web web bases.

NOTE Confidence: 0.9710768

00:31:43.385 --> 00:31:44.985 We followed the Joanna Briggs

NOTE Confidence: 0.9710768

00:31:44.985 --> 00:31:47.625 Institute critical appraisal tool. We

NOTE Confidence: 0.9710768

00:31:47.625 --> 00:31:48.125 included

NOTE Confidence: 0.9997542

00:31:48.425 --> 00:31:49.805 different types of studies

NOTE Confidence: 0.99155265

00:31:50.240 --> 00:31:51.540 and multiple articles.

NOTE Confidence: 0.9756921

00:31:52.640 --> 00:31:54.320 We yielded ten fifty nine

NOTE Confidence: 0.9756921

00:31:54.320 --> 00:31:55.920 articles. Thirty nine of them

NOTE Confidence: 0.9756921

00:31:55.920 --> 00:31:57.300 met the inclusion criteria.

NOTE Confidence: 0.9982696

00:31:57.680 --> 00:31:58.740 We looked particularly

NOTE Confidence: 0.99580973

00:31:59.120 --> 00:32:00.740 at racial and ethnic disparities,

NOTE Confidence: 0.77672386

00:32:02.325 --> 00:32:04.105 increased risks with certain socio

NOTE Confidence: 0.77672386

00:32:04.325 --> 00:32:04.825 demographic

NOTE Confidence: 0.9833871

00:32:05.845 --> 00:32:06.345 factors.

NOTE Confidence: 0.997627

00:32:07.445 --> 00:32:09.205 We looked at inadequate provider

NOTE Confidence: 0.997627

00:32:09.205 --> 00:32:10.265 and patient knowledge.

NOTE Confidence: 0.9902999

00:32:10.645 --> 00:32:11.684 We looked at,

NOTE Confidence: 0.9974948

00:32:12.245 --> 00:32:14.424 low patient education and burden.

NOTE Confidence: 0.9535949

00:32:15.059 --> 00:32:16.419 We looked at barrier and

NOTE Confidence: 0.9535949

00:32:16.419 --> 00:32:18.200 receipt of health care provider

NOTE Confidence: 0.9535949

00:32:18.259 --> 00:32:18.759 diagnosis,

NOTE Confidence: 0.98839617

00:32:19.139 --> 00:32:20.500 and the subthemes that we

NOTE Confidence: 0.98839617

00:32:20.500 --> 00:32:22.039 looked at are cost burden,

NOTE Confidence: 0.98959

00:32:22.580 --> 00:32:24.500 psychosocial barriers, and the role

NOTE Confidence: 0.98959

00:32:24.500 --> 00:32:26.340 of patient self efficacy. So

NOTE Confidence: 0.98959

00:32:26.340 --> 00:32:27.639 this is what we found.

NOTE Confidence: 0.8895926

00:32:28.174 --> 00:32:30.195 So younger non caucasian

NOTE Confidence: 0.9989661

00:32:30.735 --> 00:32:31.235 patients

NOTE Confidence: 0.98277503

00:32:31.615 --> 00:32:33.934 located in rural geographic regions

NOTE Confidence: 0.98277503

00:32:33.934 --> 00:32:36.115 with low income and education

NOTE Confidence: 0.98277503

00:32:36.255 --> 00:32:37.855 levels appear to be at

NOTE Confidence: 0.98277503

00:32:37.855 --> 00:32:39.794 greatest risk of for self

NOTE Confidence: 0.98277503

00:32:40.030 --> 00:32:40.530 reported

NOTE Confidence: 0.9987062

00:32:40.910 --> 00:32:42.530 breast cancer related lymphedema

NOTE Confidence: 0.9536482

00:32:42.910 --> 00:32:44.850 rather than physician diagnosed.

NOTE Confidence: 0.9832267

00:32:45.790 --> 00:32:47.550 The patients of diverse racial

NOTE Confidence: 0.9832267

00:32:47.550 --> 00:32:49.309 and ethnic backgrounds and low

NOTE Confidence: 0.9832267

00:32:49.309 --> 00:32:49.809 socioeconomic

NOTE Confidence: 0.993885

00:32:50.190 --> 00:32:51.950 status were at increased risk

NOTE Confidence: 0.993885

00:32:51.950 --> 00:32:52.850 for inadequate

NOTE Confidence: 0.90796345

00:32:53.790 --> 00:32:54.610 self care,

NOTE Confidence: 0.99657965

00:32:55.515 --> 00:32:56.415 practice education,

NOTE Confidence: 0.9661532

00:32:57.355 --> 00:32:59.215 insufficient breast cancer survivorship,

NOTE Confidence: 0.9944461

00:32:59.835 --> 00:33:01.995 support, and low accessibility to

NOTE Confidence: 0.9944461

00:33:01.995 --> 00:33:02.975 treatment resources.

NOTE Confidence: 0.996772

00:33:03.755 --> 00:33:05.215 And even though the mechanism

NOTE Confidence: 0.996772

00:33:05.435 --> 00:33:07.355 driving the increased risk amongst

NOTE Confidence: 0.996772

00:33:07.355 --> 00:33:09.855 minority patient populations is unknown,

NOTE Confidence: 0.97211957

00:33:11.170 --> 00:33:13.590 Active prevention and multisperity interventions

NOTE Confidence: 0.97211957

00:33:13.730 --> 00:33:15.330 are really imperative to lower

NOTE Confidence: 0.97211957

00:33:15.330 --> 00:33:16.070 breast cancer,

NOTE Confidence: 0.97849375

00:33:16.450 --> 00:33:18.050 related lymphedema rates in this

NOTE Confidence: 0.97849375

00:33:18.050 --> 00:33:19.590 group, and we wanna empower

NOTE Confidence: 0.97849375

00:33:19.650 --> 00:33:21.330 our breast cancer survivors, and

NOTE Confidence: 0.97849375

00:33:21.330 --> 00:33:22.850 we wanna strengthen their self

NOTE Confidence: 0.97849375

00:33:22.850 --> 00:33:23.350 efficacy.

NOTE Confidence: 0.9987532

00:33:24.725 --> 00:33:25.845 So one of the final

NOTE Confidence: 0.9987532

00:33:25.845 --> 00:33:27.705 projects I wanna discuss today

NOTE Confidence: 0.9987532

00:33:27.765 --> 00:33:28.265 is,

NOTE Confidence: 0.99857926

00:33:28.805 --> 00:33:30.325 is a project from,

NOTE Confidence: 0.99633944

00:33:30.725 --> 00:33:32.485 the cohort here at the

NOTE Confidence: 0.99633944

00:33:32.485 --> 00:33:33.705 Yale Cancer Center.

NOTE Confidence: 0.93637323

00:33:34.245 --> 00:33:36.325 So Stav Brown is a,

NOTE Confidence: 0.9971731

00:33:37.039 --> 00:33:38.580 is our research associate,

NOTE Confidence: 0.968909

00:33:39.039 --> 00:33:40.720 this year, and Alina Chen

NOTE Confidence: 0.968909

00:33:40.720 --> 00:33:41.679 is a medical student at

NOTE Confidence: 0.968909

00:33:41.679 --> 00:33:43.220 Yale that worked on this.

NOTE Confidence: 0.968909

00:33:43.440 --> 00:33:44.399 We wanted to look at

NOTE Confidence: 0.968909

00:33:44.399 --> 00:33:45.360 whether or not we could

NOTE Confidence: 0.968909

00:33:45.360 --> 00:33:47.140 predict cancer related lymphedema.

NOTE Confidence: 0.9151907

00:33:47.600 --> 00:33:48.419 And interestingly,

NOTE Confidence: 0.90880406

00:33:49.279 --> 00:33:50.775 we have a huge cohort

NOTE Confidence: 0.98629683

00:33:51.415 --> 00:33:53.335 lymphedema patients here. We have

NOTE Confidence: 0.98629683

00:33:53.335 --> 00:33:55.335 about fifteen thousand six hundred

NOTE Confidence: 0.98629683

00:33:55.335 --> 00:33:57.175 and sixty six cases of

NOTE Confidence: 0.98629683

00:33:57.175 --> 00:33:59.095 axillary lymph node dissection here.

NOTE Confidence: 0.98629683

00:33:59.095 --> 00:34:00.135 So we wanted to look

NOTE Confidence: 0.98629683

00:34:00.135 --> 00:34:00.795 at outcomes.

NOTE Confidence: 0.99882996

00:34:01.975 --> 00:34:03.195 So we know that lymphedema

NOTE Confidence: 0.99882996

00:34:03.255 --> 00:34:04.795 is irreversible and incurable.

NOTE Confidence: 0.99991703

00:34:06.100 --> 00:34:07.159 There are over

NOTE Confidence: 0.9858582

00:34:07.460 --> 00:34:09.780 thirty eight prediction models available

NOTE Confidence: 0.9858582

00:34:09.780 --> 00:34:11.540 out there. So that's a

NOTE Confidence: 0.9858582

00:34:11.540 --> 00:34:12.440 lot of models.

NOTE Confidence: 0.9744053

00:34:13.780 --> 00:34:14.820 So what is wrong with

NOTE Confidence: 0.9744053

00:34:14.820 --> 00:34:15.700 them and why don't they

NOTE Confidence: 0.9744053

00:34:15.700 --> 00:34:16.739 work? How can we not

NOTE Confidence: 0.9744053

00:34:16.739 --> 00:34:18.440 predict who's gonna have lymphedema?

NOTE Confidence: 0.99934375

00:34:19.265 --> 00:34:19.925 The limitations

NOTE Confidence: 0.9657237

00:34:20.465 --> 00:34:22.565 of the current, prediction models

NOTE Confidence: 0.9657237

00:34:22.625 --> 00:34:23.985 as are that they don't

NOTE Confidence: 0.9657237

00:34:23.985 --> 00:34:25.765 predict the time of diagnosis.

NOTE Confidence: 0.96437454

00:34:26.625 --> 00:34:28.485 They're based on small cohorts,

NOTE Confidence: 0.90078896

00:34:28.785 --> 00:34:30.305 and there's therefore lack of

NOTE Confidence: 0.90078896

00:34:30.305 --> 00:34:32.085 sufficient statistical power.

NOTE Confidence: 0.95416516

00:34:33.239 --> 00:34:34.520 Patients are followed for a

NOTE Confidence: 0.95416516

00:34:34.520 --> 00:34:35.900 very short period of time.

NOTE Confidence: 0.9977415

00:34:36.440 --> 00:34:37.640 They don't account for race

NOTE Confidence: 0.9977415

00:34:37.640 --> 00:34:38.300 and ethnicity.

NOTE Confidence: 0.9992883

00:34:38.680 --> 00:34:40.360 They don't even address important

NOTE Confidence: 0.9992883

00:34:40.360 --> 00:34:40.860 comorbidities.

NOTE Confidence: 0.999798

00:34:41.960 --> 00:34:42.940 They don't include

NOTE Confidence: 0.99586326

00:34:43.400 --> 00:34:45.735 laboratory based predictive markers, and

NOTE Confidence: 0.99586326

00:34:45.735 --> 00:34:46.395 they don't

NOTE Confidence: 0.96716446

00:34:46.695 --> 00:34:47.175 really,

NOTE Confidence: 0.98698837

00:34:47.655 --> 00:34:48.935 give you the information that

NOTE Confidence: 0.98698837

00:34:48.935 --> 00:34:50.615 you need. That information is

NOTE Confidence: 0.98698837

00:34:50.615 --> 00:34:51.755 not readily available.

NOTE Confidence: 0.9951663

00:34:52.695 --> 00:34:54.135 So our aims were to

NOTE Confidence: 0.9951663

00:34:54.135 --> 00:34:55.655 look at the risk of,

NOTE Confidence: 0.99317753

00:34:56.375 --> 00:34:57.335 were to look at the

NOTE Confidence: 0.99317753

00:34:57.335 --> 00:34:58.155 risk of lymphedema.

NOTE Confidence: 0.9530737

00:34:59.570 --> 00:35:01.410 Most specifically, can we predict

NOTE Confidence: 0.9530737

00:35:01.410 --> 00:35:01.910 lymphedema,

NOTE Confidence: 0.99167335

00:35:02.210 --> 00:35:03.330 but can we predict the

NOTE Confidence: 0.99167335

00:35:03.330 --> 00:35:05.110 time of lymphedema as well?

NOTE Confidence: 0.99167335

00:35:05.330 --> 00:35:06.450 So we wanted to look

NOTE Confidence: 0.99167335

00:35:06.450 --> 00:35:07.989 at the impact of demographic

NOTE Confidence: 0.99167335

00:35:08.130 --> 00:35:09.330 and clinic variables

NOTE Confidence: 0.95736027

00:35:09.810 --> 00:35:10.790 clinical variables,

NOTE Confidence: 0.9180662

00:35:11.650 --> 00:35:13.670 following axillary lymph node dissection,

NOTE Confidence: 0.9959772

00:35:14.205 --> 00:35:15.405 And we wanted to explore

NOTE Confidence: 0.9959772

00:35:15.405 --> 00:35:17.085 the effects of laboratory based

NOTE Confidence: 0.9959772

00:35:17.085 --> 00:35:18.525 markers on the risk of

NOTE Confidence: 0.9959772

00:35:18.525 --> 00:35:20.385 developing cancer related lymphedema

NOTE Confidence: 0.9963291

00:35:20.685 --> 00:35:22.545 following axillary lymph node dissection.

NOTE Confidence: 0.9204131

00:35:23.325 --> 00:35:24.925 And similarly for the time

NOTE Confidence: 0.9204131

00:35:24.925 --> 00:35:25.585 of lymphedema,

NOTE Confidence: 0.99742967

00:35:26.045 --> 00:35:28.465 explore demographic and clinical variables

NOTE Confidence: 0.9968612

00:35:29.090 --> 00:35:30.690 and see whether or not

NOTE Confidence: 0.9968612

00:35:30.690 --> 00:35:32.150 laboratory based markers,

NOTE Confidence: 0.990596

00:35:33.010 --> 00:35:34.610 can have an effect on,

NOTE Confidence: 0.98969036

00:35:35.170 --> 00:35:36.630 on lymphedema diagnosis.

NOTE Confidence: 0.99955684

00:35:37.330 --> 00:35:38.550 So this was a retrospective

NOTE Confidence: 0.9970274

00:35:38.850 --> 00:35:40.370 cohort. So we looked at

NOTE Confidence: 0.9970274

00:35:40.370 --> 00:35:41.489 all the patients who had

NOTE Confidence: 0.9970274

00:35:41.489 --> 00:35:41.989 undergone

NOTE Confidence: 0.98485833

00:35:42.370 --> 00:35:43.969 axillary lymph node dissection at

NOTE Confidence: 0.98485833

00:35:43.969 --> 00:35:45.925 Yale Cancer Center between twenty

NOTE Confidence: 0.98485833

00:35:45.925 --> 00:35:47.625 thirteen and twenty twenty four.

NOTE Confidence: 0.9996089

00:35:48.085 --> 00:35:48.744 We collected

NOTE Confidence: 0.9996376

00:35:49.125 --> 00:35:50.344 age, BMI,

NOTE Confidence: 0.9989884

00:35:50.885 --> 00:35:51.864 gender, race,

NOTE Confidence: 0.99835193

00:35:52.244 --> 00:35:52.744 chemotherapy,

NOTE Confidence: 0.9996692

00:35:53.125 --> 00:35:54.344 radiation, diabetes,

NOTE Confidence: 0.972255

00:35:54.645 --> 00:35:56.265 hemoglobin a one c,

NOTE Confidence: 0.95066416

00:35:56.690 --> 00:35:57.970 lymph and then looked at

NOTE Confidence: 0.95066416

00:35:57.970 --> 00:36:00.050 outcomes such as lymphedema development

NOTE Confidence: 0.95066416

00:36:00.050 --> 00:36:01.970 and also time from axial

NOTE Confidence: 0.95066416

00:36:01.970 --> 00:36:02.790 lymph node

NOTE Confidence: 0.99775743

00:36:03.650 --> 00:36:05.030 to lymphedema development.

NOTE Confidence: 0.9681883

00:36:06.450 --> 00:36:07.750 We did a two multivariate

NOTE Confidence: 0.9681883

00:36:07.890 --> 00:36:08.390 regression

NOTE Confidence: 0.78478575

00:36:08.690 --> 00:36:09.190 models

NOTE Confidence: 0.8537456

00:36:09.650 --> 00:36:11.295 were developed to evaluate this

NOTE Confidence: 0.8537456

00:36:11.454 --> 00:36:12.515 these risk factors

NOTE Confidence: 0.89001304

00:36:13.135 --> 00:36:14.895 specifically and at the time

NOTE Confidence: 0.89001304

00:36:14.895 --> 00:36:16.895 of first diagnosis following accident

NOTE Confidence: 0.89001304

00:36:16.895 --> 00:36:17.795 lymph node dissection.

NOTE Confidence: 0.9948016

00:36:18.575 --> 00:36:20.174 We did a multivariate logistic

NOTE Confidence: 0.9948016

00:36:20.174 --> 00:36:21.375 regression for the risk of

NOTE Confidence: 0.9948016

00:36:21.375 --> 00:36:22.835 lymphedema and a multilinear

NOTE Confidence: 0.83561707

00:36:23.135 --> 00:36:25.339 and Cox proportional hazard regression

NOTE Confidence: 0.9947031

00:36:25.880 --> 00:36:27.339 for time to first diagnosis.

NOTE Confidence: 0.94518113

00:36:28.359 --> 00:36:30.039 So as mentioned, these were

NOTE Confidence: 0.94518113

00:36:30.039 --> 00:36:31.960 fifteen thousand six hundred and

NOTE Confidence: 0.94518113

00:36:31.960 --> 00:36:33.719 sixty six cases. So we

NOTE Confidence: 0.94518113

00:36:33.719 --> 00:36:35.160 we look at other tertiary

NOTE Confidence: 0.94518113

00:36:35.160 --> 00:36:36.140 cancer centers.

NOTE Confidence: 0.9932804

00:36:36.519 --> 00:36:37.559 This is about two to

NOTE Confidence: 0.9932804

00:36:37.559 --> 00:36:39.500 three times the volume in

NOTE Confidence: 0.9932804

00:36:39.765 --> 00:36:40.984 only about a decade.

NOTE Confidence: 0.95246106

00:36:42.085 --> 00:36:43.844 So there's about twenty three,

NOTE Confidence: 0.95246106

00:36:43.844 --> 00:36:45.364 forty five patients, so about

NOTE Confidence: 0.95246106

00:36:45.364 --> 00:36:46.805 fifteen percent of patients that

NOTE Confidence: 0.95246106

00:36:46.805 --> 00:36:48.885 develop cancer related lymphedema post

NOTE Confidence: 0.95246106

00:36:48.885 --> 00:36:50.404 axial lymph node dissection, and

NOTE Confidence: 0.95246106

00:36:50.404 --> 00:36:51.444 that fits well with the

NOTE Confidence: 0.95246106

00:36:51.444 --> 00:36:51.944 literature.

NOTE Confidence: 0.9845145

00:36:52.770 --> 00:36:54.530 Patients develop lymphedema with an

NOTE Confidence: 0.9845145

00:36:54.530 --> 00:36:56.290 average onset of twenty and

NOTE Confidence: 0.9845145

00:36:56.290 --> 00:36:58.290 a half months post axillary

NOTE Confidence: 0.9845145

00:36:58.290 --> 00:36:59.270 lymph node dissection.

NOTE Confidence: 0.88621503

00:37:00.610 --> 00:37:01.890 When we look to add

NOTE Confidence: 0.88621503

00:37:01.890 --> 00:37:03.430 to the risk of lymphedema

NOTE Confidence: 0.90907353

00:37:03.730 --> 00:37:04.469 and particularly

NOTE Confidence: 0.873875

00:37:04.930 --> 00:37:05.830 risk factors,

NOTE Confidence: 0.9991076

00:37:06.210 --> 00:37:07.590 so the risk factors

NOTE Confidence: 0.999901

00:37:07.935 --> 00:37:08.915 that are associated

NOTE Confidence: 0.9993841

00:37:10.094 --> 00:37:12.195 are BMI of over thirty,

NOTE Confidence: 0.9853875

00:37:12.895 --> 00:37:13.395 chemotherapy,

NOTE Confidence: 0.99671966

00:37:13.855 --> 00:37:15.135 which is not seen in

NOTE Confidence: 0.99671966

00:37:15.135 --> 00:37:15.535 other,

NOTE Confidence: 0.9990382

00:37:16.094 --> 00:37:16.915 other literature,

NOTE Confidence: 0.99704266

00:37:17.375 --> 00:37:17.875 diabetes,

NOTE Confidence: 0.9940962

00:37:19.614 --> 00:37:20.114 race,

NOTE Confidence: 0.97166115

00:37:20.575 --> 00:37:22.930 black African American, as well

NOTE Confidence: 0.97166115

00:37:22.930 --> 00:37:25.010 as radiation. So those have

NOTE Confidence: 0.97166115

00:37:25.010 --> 00:37:25.750 all presented

NOTE Confidence: 0.94400483

00:37:26.530 --> 00:37:27.989 as, risk factors

NOTE Confidence: 0.99948364

00:37:28.290 --> 00:37:29.590 in our clinical model.

NOTE Confidence: 0.99596655

00:37:30.290 --> 00:37:31.570 When we look at,

NOTE Confidence: 0.9889147

00:37:32.130 --> 00:37:33.190 time to lymphedema,

NOTE Confidence: 0.98709667

00:37:34.290 --> 00:37:34.790 so,

NOTE Confidence: 0.91470975

00:37:35.170 --> 00:37:37.350 race such as, black African

NOTE Confidence: 0.91470975

00:37:37.410 --> 00:37:37.910 American,

NOTE Confidence: 0.9874692

00:37:38.575 --> 00:37:40.495 Asians, and radiation are early

NOTE Confidence: 0.9874692

00:37:40.495 --> 00:37:40.995 predictors,

NOTE Confidence: 0.9714934

00:37:41.775 --> 00:37:43.695 in terms of timing, so

NOTE Confidence: 0.9714934

00:37:43.695 --> 00:37:44.435 more likely

NOTE Confidence: 0.9558255

00:37:44.735 --> 00:37:46.195 early for them to present.

NOTE Confidence: 0.99955595

00:37:46.655 --> 00:37:47.555 And diabetes

NOTE Confidence: 0.9995153

00:37:48.495 --> 00:37:50.255 is a late predictor of

NOTE Confidence: 0.9995153

00:37:50.255 --> 00:37:50.755 lymphedema.

NOTE Confidence: 0.97157836

00:37:52.260 --> 00:37:53.640 When we looked at laboratory

NOTE Confidence: 0.97157836

00:37:53.780 --> 00:37:54.280 based,

NOTE Confidence: 0.8392002

00:37:55.700 --> 00:37:57.800 features and the our model,

NOTE Confidence: 0.982423

00:37:58.260 --> 00:37:59.160 so BMI,

NOTE Confidence: 0.992416

00:37:59.540 --> 00:38:00.040 chemotherapy,

NOTE Confidence: 0.97849655

00:38:00.500 --> 00:38:02.340 and hemoglobin a one c

NOTE Confidence: 0.97849655

00:38:02.340 --> 00:38:03.620 at the time of axillary

NOTE Confidence: 0.97849655

00:38:03.620 --> 00:38:04.935 lymph node dissection. So this

NOTE Confidence: 0.97849655

00:38:04.935 --> 00:38:06.055 is also in patients who

NOTE Confidence: 0.97849655

00:38:06.055 --> 00:38:08.215 don't necessarily have diabetes, but

NOTE Confidence: 0.97849655

00:38:08.215 --> 00:38:10.875 it's rather that laboratory value.

NOTE Confidence: 0.9978357

00:38:11.735 --> 00:38:13.094 They were shown to be

NOTE Confidence: 0.9978357

00:38:13.094 --> 00:38:14.795 risk factors for lymphedema.

NOTE Confidence: 0.97118276

00:38:15.655 --> 00:38:16.935 And when we looked at

NOTE Confidence: 0.97118276

00:38:16.935 --> 00:38:17.435 timing,

NOTE Confidence: 0.980002

00:38:18.420 --> 00:38:20.260 BMI of over thirty and

NOTE Confidence: 0.980002

00:38:20.260 --> 00:38:20.760 hemoglobin

NOTE Confidence: 0.99357426

00:38:21.060 --> 00:38:22.760 a one c were predictors

NOTE Confidence: 0.99947846

00:38:23.140 --> 00:38:23.880 of developing

NOTE Confidence: 0.99862766

00:38:24.180 --> 00:38:25.079 late lymphedema.

NOTE Confidence: 0.93396306

00:38:26.660 --> 00:38:28.099 So the conclusions from this

NOTE Confidence: 0.93396306

00:38:28.099 --> 00:38:29.219 part of the study, this

NOTE Confidence: 0.93396306

00:38:29.219 --> 00:38:30.579 is a larger single center

NOTE Confidence: 0.93396306

00:38:30.579 --> 00:38:31.619 study. So there's,

NOTE Confidence: 0.98566246

00:38:33.275 --> 00:38:34.395 there's no one else who

NOTE Confidence: 0.98566246

00:38:34.395 --> 00:38:35.675 had this has this much

NOTE Confidence: 0.98566246

00:38:35.675 --> 00:38:36.175 data.

NOTE Confidence: 0.9868929

00:38:36.475 --> 00:38:37.835 We're actually surprised at the

NOTE Confidence: 0.9868929

00:38:37.835 --> 00:38:39.275 amount of data that we've,

NOTE Confidence: 0.9843069

00:38:39.675 --> 00:38:40.975 you know, we have here,

NOTE Confidence: 0.9843069

00:38:41.195 --> 00:38:42.395 which is great because this

NOTE Confidence: 0.9843069

00:38:42.395 --> 00:38:42.895 allows

NOTE Confidence: 0.9824586

00:38:43.275 --> 00:38:45.135 us to develop this tool.

NOTE Confidence: 0.9387398

00:38:46.155 --> 00:38:47.700 So it can we can

NOTE Confidence: 0.9387398

00:38:47.700 --> 00:38:48.200 basically

NOTE Confidence: 0.9549826

00:38:48.500 --> 00:38:50.180 potentially predict, and we can

NOTE Confidence: 0.9549826

00:38:50.180 --> 00:38:51.160 develop algorithms

NOTE Confidence: 0.9990422

00:38:51.460 --> 00:38:52.359 for individualized

NOTE Confidence: 0.99866885

00:38:52.739 --> 00:38:54.440 risk and time to diagnosis.

NOTE Confidence: 0.9736454

00:38:55.300 --> 00:38:56.420 This is the first study

NOTE Confidence: 0.9736454

00:38:56.420 --> 00:38:58.100 to highlight hemoglobin a one

NOTE Confidence: 0.9736454

00:38:58.100 --> 00:38:59.800 c as a novel independent

NOTE Confidence: 0.9736454

00:38:59.940 --> 00:39:00.440 predictive

NOTE Confidence: 0.9990461

00:39:00.739 --> 00:39:01.239 marker.

NOTE Confidence: 0.9981274

00:39:02.005 --> 00:39:03.625 These findings really offer,

NOTE Confidence: 0.6656161

00:39:04.965 --> 00:39:05.705 a foundation

NOTE Confidence: 0.9959325

00:39:06.165 --> 00:39:08.405 to create these individualized screening

NOTE Confidence: 0.9959325

00:39:08.405 --> 00:39:10.585 tools and early preventive measurements

NOTE Confidence: 0.9959325

00:39:10.645 --> 00:39:11.785 in high risk patients.

NOTE Confidence: 0.999053

00:39:12.885 --> 00:39:14.005 And if you look here

NOTE Confidence: 0.999053

00:39:14.005 --> 00:39:15.950 in terms of future studies,

NOTE Confidence: 0.999053

00:39:16.170 --> 00:39:17.369 our goal is to really

NOTE Confidence: 0.999053

00:39:17.369 --> 00:39:17.869 improve

NOTE Confidence: 0.85227424

00:39:18.170 --> 00:39:18.670 multidisciplinary

NOTE Confidence: 0.986716

00:39:19.130 --> 00:39:20.190 approach to treatment,

NOTE Confidence: 0.9954792

00:39:21.050 --> 00:39:22.670 to enhance early diagnosis,

NOTE Confidence: 0.99712807

00:39:23.290 --> 00:39:25.070 to prevent barriers and disparities

NOTE Confidence: 0.99712807

00:39:25.210 --> 00:39:27.530 in care, to identify novel

NOTE Confidence: 0.99712807

00:39:27.530 --> 00:39:28.030 biomarkers,

NOTE Confidence: 0.96237016

00:39:28.625 --> 00:39:30.545 to establish predictive techniques as

NOTE Confidence: 0.96237016

00:39:30.545 --> 00:39:31.605 standard of care,

NOTE Confidence: 0.99600184

00:39:31.905 --> 00:39:33.825 and to create individualized predictive

NOTE Confidence: 0.99600184

00:39:33.825 --> 00:39:35.444 models. And each of these

NOTE Confidence: 0.9887238

00:39:35.744 --> 00:39:37.184 can be its own massive

NOTE Confidence: 0.9887238

00:39:37.184 --> 00:39:39.025 projects and have multiple sub,

NOTE Confidence: 0.9887238

00:39:39.424 --> 00:39:39.924 subthemes.

NOTE Confidence: 0.96761173

00:39:40.969 --> 00:39:42.089 And I also wanna put

NOTE Confidence: 0.96761173

00:39:42.089 --> 00:39:43.210 a pitch in there as

NOTE Confidence: 0.96761173

00:39:43.210 --> 00:39:44.489 Kate asked me to do

NOTE Confidence: 0.96761173

00:39:44.489 --> 00:39:45.849 that we do currently have

NOTE Confidence: 0.96761173

00:39:45.849 --> 00:39:47.529 a pathway as well for

NOTE Confidence: 0.96761173

00:39:47.529 --> 00:39:49.230 a breast cancer related lymphedema

NOTE Confidence: 0.96761173

00:39:49.450 --> 00:39:50.569 in terms of how do

NOTE Confidence: 0.96761173

00:39:50.569 --> 00:39:51.069 we,

NOTE Confidence: 0.98938006

00:39:51.529 --> 00:39:52.730 how do we assess these

NOTE Confidence: 0.98938006

00:39:52.730 --> 00:39:54.155 patients. So I wanna thank

NOTE Confidence: 0.98938006

00:39:54.155 --> 00:39:54.895 you all,

NOTE Confidence: 0.9970631

00:39:55.355 --> 00:39:56.875 for listening, and I'm open

NOTE Confidence: 0.9970631

00:39:56.875 --> 00:39:57.855 to any questions.

NOTE Confidence: 0.9792489

00:40:08.280 --> 00:40:09.640 I'm looking at the chat.

NOTE Confidence: 0.9792489

00:40:09.640 --> 00:40:10.780 Okay. Here we go.

NOTE Confidence: 0.91867644

00:40:17.480 --> 00:40:19.100 Yes. Sorry. Go ahead.

NOTE Confidence: 0.71898365

00:40:20.614 --> 00:40:21.755 It's it's it's

94

NOTE Confidence: 0.6756609

00:40:24.135 --> 00:40:24.164 it's it's it's it's it's

NOTE Confidence: 0.6756609

00:40:24.164 --> 00:40:24.193 it's it's it's it's it's

NOTE Confidence: 0.6756609

00:40:24.193 --> 00:40:24.223 it's it's it's it's it's

NOTE Confidence: 0.6756609

00:40:24.223 --> 00:40:24.252 it's it's it's it's it's

NOTE Confidence: 0.6756609

00:40:24.252 --> 00:40:24.281 it's it's it's it's it's

NOTE Confidence: 0.6756609

00:40:24.281 --> 00:40:24.310 it's it's it's it's it's

NOTE Confidence: 0.6756609

00:40:24.310 --> 00:40:24.339 it's it's it's it's it's

NOTE Confidence: 0.6756609

00:40:24.339 --> 00:40:24.369 it's it's it's it's it's

NOTE Confidence: 0.6756609

00:40:24.369 --> 00:40:24.875 it's it's

NOTE Confidence: 0.3709308

00:40:32.214 --> 00:40:32.714 it

NOTE Confidence: 0.9808222

00:40:35.020 --> 00:40:36.060 we don't we don't think

NOTE Confidence: 0.9808222

00:40:36.060 --> 00:40:37.360 it's related to,

NOTE Confidence: 0.9830613

00:40:39.180 --> 00:40:39.840 to gender.

NOTE Confidence: 0.97935444

00:40:40.700 --> 00:40:41.500 And when we looked at

NOTE Confidence: 0.97935444

00:40:41.500 --> 00:40:42.860 our clinical model, we did

NOTE Confidence: 0.97935444

00:40:42.860 --> 00:40:45.100 not identify that. However, having

NOTE Confidence: 0.97935444

00:40:45.100 --> 00:40:46.700 said that, if we look

NOTE Confidence: 0.97935444

00:40:46.700 --> 00:40:48.385 at our cohort, it's mainly

NOTE Confidence: 0.97935444

00:40:48.385 --> 00:40:50.145 breast cancer related lymphedema, so

NOTE Confidence: 0.97935444

00:40:50.145 --> 00:40:51.265 you could understand that there's

NOTE Confidence: 0.97935444

00:40:51.265 --> 00:40:52.785 a bias towards female. And

NOTE Confidence: 0.97935444

00:40:52.785 --> 00:40:53.585 when we looked when we

NOTE Confidence: 0.97935444

00:40:53.585 --> 00:40:55.345 did our prospective studies, about

NOTE Confidence: 0.97935444

00:40:55.345 --> 00:40:56.545 eighty percent of our women

NOTE Confidence: 0.97935444

00:40:56.705 --> 00:40:57.825 are of our patients were

NOTE Confidence: 0.97935444

00:40:57.825 --> 00:40:58.885 female as well.

NOTE Confidence: 0.90704316

00:40:59.185 --> 00:41:00.865 But currently, there's no predilection,

NOTE Confidence: 0.9997611

00:41:01.690 --> 00:41:03.550 or anything that would imply

NOTE Confidence: 0.99885386

00:41:03.930 --> 00:41:05.290 that women are more likely

NOTE Confidence: 0.99885386

00:41:05.290 --> 00:41:06.430 to develop lymphedema.

NOTE Confidence: 0.97518367

00:41:10.170 --> 00:41:11.770 Again, with age, we didn't

NOTE Confidence: 0.97518367

00:41:11.770 --> 00:41:12.570 find that there was a

NOTE Confidence: 0.97518367

00:41:12.570 --> 00:41:14.445 particular age, but we know

NOTE Confidence: 0.97518367

00:41:14.445 --> 00:41:16.225 that the earlier you're diagnosed,

NOTE Confidence: 0.97518367

00:41:16.285 --> 00:41:17.405 the more likely you're gonna

NOTE Confidence: 0.97518367

00:41:17.405 --> 00:41:19.085 have a worse progression. So

NOTE Confidence: 0.97518367

00:41:19.085 --> 00:41:20.765 there's obviously some patients who

NOTE Confidence: 0.97518367

00:41:20.765 --> 00:41:22.305 are born with primary lymphedema.

NOTE Confidence: 0.97518367

00:41:22.525 --> 00:41:23.885 So whether they develop it

NOTE Confidence: 0.97518367

00:41:23.885 --> 00:41:25.245 when they're born versus as

NOTE Confidence: 0.97518367

00:41:25.245 --> 00:41:27.005 an adolescent or later on

NOTE Confidence: 0.97518367

00:41:27.005 --> 00:41:28.329 in life. And we know

NOTE Confidence: 0.97518367

00:41:28.329 --> 00:41:29.369 the longer that they have

NOTE Confidence: 0.97518367

00:41:29.369 --> 00:41:29.869 lymphedema,

NOTE Confidence: 0.990777

00:41:30.250 --> 00:41:32.270 the more their lymphedema progresses.

NOTE Confidence: 0.99617445

00:41:32.890 --> 00:41:33.290 But,

NOTE Confidence: 0.99833995

00:41:33.690 --> 00:41:35.230 for secondary lymphedema,

NOTE Confidence: 0.99835074

00:41:35.530 --> 00:41:36.730 it's not known to be

NOTE Confidence: 0.99835074

00:41:36.730 --> 00:41:38.670 associated with a particular age.

NOTE Confidence: 0.8425512

00:41:39.770 --> 00:41:40.270 Yes.

NOTE Confidence: 0.8457142

00:41:41.690 --> 00:41:42.510 Thank you.

NOTE Confidence: 0.8329409

00:41:43.885 --> 00:41:45.505 Yesterday, I asked this question.

NOTE Confidence: 0.8329409

00:41:45.565 --> 00:41:46.065 She

NOTE Confidence: 0.87989914

00:41:49.965 --> 00:41:50.765 had about a year and

NOTE Confidence: 0.87989914

00:41:50.765 --> 00:41:51.965 a half out, doing really

NOTE Confidence: 0.87989914

00:41:51.965 --> 00:41:53.565 well, has no signs of

NOTE Confidence: 0.87989914

00:41:53.565 --> 00:41:54.065 edema.

NOTE Confidence: 0.9130808

00:41:54.445 --> 00:41:55.665 She said, am I unclear?

NOTE Confidence: 0.96476907

00:41:56.920 --> 00:41:58.600 And I said no, but

NOTE Confidence: 0.96476907

00:41:58.600 --> 00:41:59.719 I didn't have a great

NOTE Confidence: 0.96476907

00:41:59.719 --> 00:42:00.700 response to her

NOTE Confidence: 0.8576628

00:42:01.080 --> 00:42:01.800 as well. Yeah. Kind of

NOTE Confidence: 0.8576628

00:42:01.800 --> 00:42:03.739 what Yeah. I think her

NOTE Confidence: 0.9848456

00:42:04.120 --> 00:42:05.640 her next step. So I

NOTE Confidence: 0.9848456

00:42:05.640 --> 00:42:06.920 think her next step is

NOTE Confidence: 0.9848456

00:42:06.920 --> 00:42:08.040 for her to continue to

NOTE Confidence: 0.9848456

00:42:08.040 --> 00:42:09.719 follow. So, interestingly, I feel

NOTE Confidence: 0.9848456

00:42:09.719 --> 00:42:10.600 that right now, we do

NOTE Confidence: 0.9848456

00:42:10.600 --> 00:42:12.935 immediate lymphatic reconstruction, but we

NOTE Confidence: 0.9848456

00:42:12.935 --> 00:42:14.614 don't necessarily follow them long

NOTE Confidence: 0.9848456

00:42:14.614 --> 00:42:15.114 term.

NOTE Confidence: 0.98122644

00:42:15.494 --> 00:42:16.375 And we know if you

NOTE Confidence: 0.98122644

00:42:16.375 --> 00:42:17.655 look at when do patients

NOTE Confidence: 0.98122644

00:42:17.655 --> 00:42:19.815 develop lymphedema, the average is

NOTE Confidence: 0.98122644

00:42:19.815 --> 00:42:20.935 about twenty and a half

NOTE Confidence: 0.98122644

00:42:20.935 --> 00:42:22.535 months after the axillary lymph

NOTE Confidence: 0.98122644

00:42:22.535 --> 00:42:24.295 node dissection. So she's really

NOTE Confidence: 0.98122644

00:42:24.295 --> 00:42:26.075 not necessarily in the clear.

NOTE Confidence: 0.9692599

00:42:26.810 --> 00:42:28.090 But regardless of that, we

NOTE Confidence: 0.9692599

00:42:28.090 --> 00:42:29.369 have to continue to follow

NOTE Confidence: 0.9692599

00:42:29.369 --> 00:42:30.730 them because we talked about

NOTE Confidence: 0.9692599

00:42:30.730 --> 00:42:31.630 things like

NOTE Confidence: 0.8340329

00:42:32.410 --> 00:42:33.150 not even

NOTE Confidence: 0.96616817

00:42:33.530 --> 00:42:35.469 signs, but rather, like, symptoms.

NOTE Confidence: 0.96616817

00:42:35.530 --> 00:42:36.650 Right? They're they're feel if

NOTE Confidence: 0.96616817

00:42:36.650 --> 00:42:37.930 she's starting to feel any

NOTE Confidence: 0.96616817

00:42:37.930 --> 00:42:38.430 progression

NOTE Confidence: 0.9910009

00:42:39.290 --> 00:42:40.350 or any heaviness,

NOTE Confidence: 0.9823135

00:42:40.844 --> 00:42:42.045 she's someone that I would

NOTE Confidence: 0.9823135

00:42:42.045 --> 00:42:43.565 consider really maybe even putting

NOTE Confidence: 0.9823135

00:42:43.565 --> 00:42:44.305 in a garment

NOTE Confidence: 0.98395807

00:42:44.844 --> 00:42:46.525 and having her use other

NOTE Confidence: 0.98395807

00:42:46.525 --> 00:42:47.025 tools,

NOTE Confidence: 0.9703682

00:42:47.405 --> 00:42:49.484 to further decrease her risk,

NOTE Confidence: 0.9703682

00:42:49.484 --> 00:42:50.685 but she's definitely not in

NOTE Confidence: 0.9703682

00:42:50.685 --> 00:42:51.344 the clear.

NOTE Confidence: 0.46874133

00:42:55.700 --> 00:42:56.200 With

NOTE Confidence: 0.8152134

00:42:56.580 --> 00:42:57.700 alerts even if they've had

NOTE Confidence: 0.8152134

00:42:57.700 --> 00:42:59.320 essential Yes. Disease.

NOTE Confidence: 0.93105245

00:42:59.860 --> 00:43:00.360 Yeah.

NOTE Confidence: 0.9343679

00:43:00.660 --> 00:43:02.100 Meaning no IVs, no blood

NOTE Confidence: 0.9343679

00:43:02.100 --> 00:43:03.300 pressure cocks. You know, these

NOTE Confidence: 0.9343679

00:43:03.300 --> 00:43:04.500 poor women get stuck over

NOTE Confidence: 0.9343679

00:43:04.500 --> 00:43:05.300 and over again in their

NOTE Confidence: 0.9343679

00:43:05.300 --> 00:43:06.260 arm that has not had

NOTE Confidence: 0.9343679

00:43:06.260 --> 00:43:07.860 any accessory surgery. What are

NOTE Confidence: 0.9343679

00:43:07.860 --> 00:43:08.920 your thoughts on

NOTE Confidence: 0.48887447

00:43:09.344 --> 00:43:10.965 stethal lymphoblastibrosis and

NOTE Confidence: 0.9096343

00:43:11.585 --> 00:43:12.864 the ability to use that

NOTE Confidence: 0.9096343

00:43:12.864 --> 00:43:13.765 arm? Yeah.

NOTE Confidence: 0.9878511

00:43:14.545 --> 00:43:15.665 So I think even for

NOTE Confidence: 0.9878511

00:43:15.665 --> 00:43:16.165 both,

NOTE Confidence: 0.98351127

00:43:16.785 --> 00:43:17.905 we we know that a

NOTE Confidence: 0.98351127

00:43:17.905 --> 00:43:19.105 blood pressure cuff we actually

NOTE Confidence: 0.98351127

00:43:19.105 --> 00:43:20.625 have studies. A blood pressure

NOTE Confidence: 0.98351127

00:43:20.625 --> 00:43:22.230 cuff and IV, it shouldn't

NOTE Confidence: 0.98351127

00:43:22.230 --> 00:43:23.610 increase the risk of lymphedema.

NOTE Confidence: 0.98351127

00:43:23.750 --> 00:43:24.869 However, if you look at

NOTE Confidence: 0.98351127

00:43:24.869 --> 00:43:26.969 the lymphedema modality and care,

NOTE Confidence: 0.98351127

00:43:27.190 --> 00:43:28.630 a big one centers on

NOTE Confidence: 0.98351127

00:43:28.630 --> 00:43:29.369 skin care.

NOTE Confidence: 0.97830933

00:43:29.750 --> 00:43:31.190 So if, for example, the

NOTE Confidence: 0.97830933

00:43:31.190 --> 00:43:31.690 IV

NOTE Confidence: 0.9973439

00:43:32.630 --> 00:43:33.910 is likely to cause you

NOTE Confidence: 0.9973439

00:43:33.910 --> 00:43:35.590 an infection or likely to

NOTE Confidence: 0.9973439

00:43:35.590 --> 00:43:36.810 cause you skin irritation,

NOTE Confidence: 0.96301585

00:43:37.785 --> 00:43:38.984 that makes you more at

NOTE Confidence: 0.96301585

00:43:38.984 --> 00:43:40.505 higher risk of either an

NOTE Confidence: 0.96301585

00:43:40.585 --> 00:43:42.344 cellulitis or infection or even

NOTE Confidence: 0.96301585

00:43:42.344 --> 00:43:44.105 progression of your lymphedema, similar

NOTE Confidence: 0.96301585

00:43:44.105 --> 00:43:45.405 with a blood pressure cuff.

NOTE Confidence: 0.96301585

00:43:45.545 --> 00:43:46.184 I don't know if you

NOTE Confidence: 0.96301585

00:43:46.184 --> 00:43:47.464 noticed, but sometimes in the

NOTE Confidence: 0.96301585

00:43:47.464 --> 00:43:48.344 operating room, we have blood

NOTE Confidence: 0.96301585

00:43:48.344 --> 00:43:49.464 pressure cuffs on patients and

NOTE Confidence: 0.96301585

00:43:49.464 --> 00:43:50.984 their arm kinda changes colors

NOTE Confidence: 0.96301585

00:43:50.984 --> 00:43:51.704 a little bit, and you're

NOTE Confidence: 0.96301585

00:43:51.704 --> 00:43:53.210 like, what's going on? So,

NOTE Confidence: 0.96301585

00:43:53.210 --> 00:43:54.250 actually, there's been a lot

NOTE Confidence: 0.96301585

00:43:54.250 --> 00:43:55.710 of studies that show that

NOTE Confidence: 0.96301585

00:43:55.849 --> 00:43:57.530 that blood pressure cuff doesn't

NOTE Confidence: 0.96301585

00:43:57.530 --> 00:43:59.069 increase your risk of lymphedema,

NOTE Confidence: 0.96301585

00:43:59.210 --> 00:44:00.170 but it's the fact that

NOTE Confidence: 0.96301585

00:44:00.170 --> 00:44:01.790 it could cause some irritation,

NOTE Confidence: 0.92909837

00:44:02.489 --> 00:44:03.710 some skin changes,

NOTE Confidence: 0.94007504

00:44:04.089 --> 00:44:04.910 and therefore,

NOTE Confidence: 0.8982746

00:44:05.849 --> 00:44:08.015 potentially cause them, cellulitis.

NOTE Confidence: 0.9918623

00:44:08.954 --> 00:44:09.755 Yeah. It could be a

NOTE Confidence: 0.9918623

00:44:09.755 --> 00:44:10.255 trigger.

NOTE Confidence: 0.48958635

00:44:21.835 --> 00:44:22.654 Three d?

NOTE Confidence: 0.99921983

00:44:23.250 --> 00:44:24.230 That would be amazing.

NOTE Confidence: 0.9445517

00:44:25.730 --> 00:44:26.870 So lymphosendicography

NOTE Confidence: 0.83098674

00:44:27.330 --> 00:44:28.130 I use to use quite

NOTE Confidence: 0.83098674

00:44:28.130 --> 00:44:29.090 a lot. I actually don't

NOTE Confidence: 0.83098674

00:44:29.090 --> 00:44:29.989 use it here.

NOTE Confidence: 0.97565186

00:44:30.370 --> 00:44:31.270 One, because,

NOTE Confidence: 0.9737972

00:44:31.810 --> 00:44:33.410 I actually really haven't found,

NOTE Confidence: 0.9737972

00:44:33.730 --> 00:44:35.090 anyone who could really do

NOTE Confidence: 0.9737972

00:44:35.090 --> 00:44:35.890 it for me. So I

NOTE Confidence: 0.9737972

00:44:35.890 --> 00:44:37.094 do our our own ICG

NOTE Confidence: 0.9737972

00:44:37.094 --> 00:44:37.915 ICG lymphangiography

NOTE Confidence: 0.94343317

00:44:38.215 --> 00:44:39.175 in the clinic and in

NOTE Confidence: 0.94343317

00:44:39.175 --> 00:44:40.234 the operating room.

NOTE Confidence: 0.96019024

00:44:40.695 --> 00:44:41.655 But to take a look

NOTE Confidence: 0.96019024

00:44:41.655 --> 00:44:42.695 at it three d would

NOTE Confidence: 0.96019024

00:44:42.695 --> 00:44:44.215 be super interesting because what

NOTE Confidence: 0.96019024

00:44:44.215 --> 00:44:45.675 we currently do is

NOTE Confidence: 0.9674466

00:44:46.055 --> 00:44:48.295 it's actually quite extensive, is

NOTE Confidence: 0.9674466

00:44:48.295 --> 00:44:49.494 we try to map patients.

NOTE Confidence: 0.9674466

00:44:49.494 --> 00:44:50.614 Let's say we're doing an

NOTE Confidence: 0.9674466

00:44:50.614 --> 00:44:51.974 upper extremity. We try to

NOTE Confidence: 0.9674466

00:44:51.974 --> 00:44:52.469 map,

NOTE Confidence: 0.9358823

00:44:53.030 --> 00:44:53.989 we try to map this

NOTE Confidence: 0.9358823

00:44:53.989 --> 00:44:55.270 way and then this way

NOTE Confidence: 0.9358823

00:44:55.270 --> 00:44:56.710 and then rotate and take

NOTE Confidence: 0.9358823

00:44:56.710 --> 00:44:58.890 different pictures and record them,

NOTE Confidence: 0.9358823

00:44:59.030 --> 00:45:00.710 when ideally, what you wanna

NOTE Confidence: 0.9358823

00:45:00.710 --> 00:45:01.750 see is what do all

NOTE Confidence: 0.9358823

00:45:01.750 --> 00:45:02.950 the channels look like. So

NOTE Confidence: 0.9358823

00:45:02.950 --> 00:45:03.930 if we can translate

NOTE Confidence: 0.9976267

00:45:04.390 --> 00:45:05.685 all those images that we're

NOTE Confidence: 0.9976267

00:45:05.765 --> 00:45:07.525 taking into something three d,

NOTE Confidence: 0.9976267

00:45:07.525 --> 00:45:08.585 that would be amazing.

NOTE Confidence: 0.97988695

00:45:09.125 --> 00:45:10.405 And I if you're interested

NOTE Confidence: 0.97988695

00:45:10.405 --> 00:45:11.205 in that, I would love

NOTE Confidence: 0.97988695

00:45:11.205 --> 00:45:12.725 to work on that with

NOTE Confidence: 0.97988695

00:45:12.725 --> 00:45:13.225 you.

NOTE Confidence: 0.9194903

00:45:14.005 --> 00:45:14.505 Yeah.

NOTE Confidence: 0.9219816

00:45:15.285 --> 00:45:15.785 Yes.

NOTE Confidence: 0.98790216

00:45:16.565 --> 00:45:18.745 Wonderful. Thank you. Thank you.

NOTE Confidence: 0.6996739

00:45:20.099 --> 00:45:21.799 Your thoughts around chemotherapy

NOTE Confidence: 0.808939

00:45:22.180 --> 00:45:23.000 as an independent

NOTE Confidence: 0.4675626

00:45:24.660 --> 00:45:25.160 effect.

NOTE Confidence: 0.9651846

00:45:26.739 --> 00:45:28.739 Considering either in the acute

NOTE Confidence: 0.9651846

00:45:28.739 --> 00:45:29.239 phase,

NOTE Confidence: 0.90254986

00:45:30.180 --> 00:45:31.619 it being a proxy for

NOTE Confidence: 0.90254986

00:45:31.619 --> 00:45:32.920 steroid use Yes.

NOTE Confidence: 0.8106176

00:45:33.795 --> 00:45:35.415 Symptoms. And if the

NOTE Confidence: 0.99947566

00:45:35.795 --> 00:45:36.295 survivorship

NOTE Confidence: 0.9011731

00:45:36.594 --> 00:45:38.295 phase, it being a reflection

NOTE Confidence: 0.9011731

00:45:38.434 --> 00:45:39.734 of potential sarcopenia.

NOTE Confidence: 0.9995141

00:45:40.835 --> 00:45:41.315 Mhmm.

NOTE Confidence: 0.9855745

00:45:41.875 --> 00:45:42.515 What's your

NOTE Confidence: 0.99881685

00:45:43.795 --> 00:45:44.295 Yeah.

NOTE Confidence: 0.97709024

00:45:44.594 --> 00:45:45.795 I so one, we were

NOTE Confidence: 0.97709024

00:45:45.795 --> 00:45:47.510 surprised to see that because

NOTE Confidence: 0.97709024

00:45:47.510 --> 00:45:48.710 that's not known in the

NOTE Confidence: 0.97709024

00:45:48.710 --> 00:45:50.550 literature either. So, typically, we

NOTE Confidence: 0.97709024

00:45:50.550 --> 00:45:51.450 know that radiation

NOTE Confidence: 0.973177

00:45:52.070 --> 00:45:53.349 therapy is a risk factor

NOTE Confidence: 0.973177

00:45:53.510 --> 00:45:54.869 is an independent risk factor,

NOTE Confidence: 0.973177

00:45:54.869 --> 00:45:56.170 but we found that chemotherapy

NOTE Confidence: 0.973177

00:45:56.310 --> 00:45:56.810 was,

NOTE Confidence: 0.9968354

00:45:57.510 --> 00:45:58.890 which, was interesting.

NOTE Confidence: 0.982092

00:45:59.505 --> 00:46:00.384 I agree that we have

NOTE Confidence: 0.982092

00:46:00.384 --> 00:46:01.505 to separate it from the

NOTE Confidence: 0.982092

00:46:01.505 --> 00:46:03.105 steroid use, but also the

NOTE Confidence: 0.982092

00:46:03.105 --> 00:46:04.384 steroid use could also have

NOTE Confidence: 0.982092

00:46:04.384 --> 00:46:06.144 an effect on hemoglobin a

NOTE Confidence: 0.982092

00:46:06.144 --> 00:46:08.005 one c, the sugar levels,

NOTE Confidence: 0.982092

00:46:08.065 --> 00:46:08.565 etcetera.

NOTE Confidence: 0.99896026

00:46:09.025 --> 00:46:10.384 So we're still gonna delve

NOTE Confidence: 0.99896026

00:46:10.384 --> 00:46:11.664 into that data a little

NOTE Confidence: 0.99896026

00:46:11.664 --> 00:46:12.384 bit more,

NOTE Confidence: 0.97077286

00:46:12.864 --> 00:46:14.305 to see to see as

NOTE Confidence: 0.97077286

00:46:14.305 --> 00:46:15.045 to why.

NOTE Confidence: 0.8679046

00:46:16.160 --> 00:46:16.660 But,

NOTE Confidence: 0.9518401

00:46:17.280 --> 00:46:18.640 it's really interesting what we

NOTE Confidence: 0.9518401

00:46:18.640 --> 00:46:19.760 are saying about the late

NOTE Confidence: 0.9518401

00:46:19.760 --> 00:46:21.520 effect of the sarcopenia. We

NOTE Confidence: 0.9518401

00:46:21.520 --> 00:46:22.980 haven't really looked at that.

NOTE Confidence: 0.9972013

00:46:25.360 --> 00:46:25.860 Hi.

NOTE Confidence: 0.9990183

00:46:32.075 --> 00:46:32.575 Yes.

NOTE Confidence: 0.9993354

00:46:34.235 --> 00:46:34.735 Yes.

NOTE Confidence: 0.9983196

00:46:40.555 --> 00:46:41.055 Mhmm.

NOTE Confidence: 0.929628

00:46:42.250 --> 00:46:43.070 Right. So,

NOTE Confidence: 0.99625576

00:46:43.850 --> 00:46:45.450 breast lymphedema is actually very

NOTE Confidence: 0.99625576

00:46:45.450 --> 00:46:46.670 difficult to diagnose.

NOTE Confidence: 0.9678027

00:46:48.410 --> 00:46:49.690 One of my so when

NOTE Confidence: 0.9678027

00:46:49.690 --> 00:46:51.710 they present with a red

NOTE Confidence: 0.9678027

00:46:52.010 --> 00:46:53.450 breast or a breast that

NOTE Confidence: 0.9678027

00:46:53.450 --> 00:46:55.130 kinda swells or a breast

NOTE Confidence: 0.9678027

00:46:55.130 --> 00:46:57.155 that continues and progresses,

NOTE Confidence: 0.90715903

00:46:57.775 --> 00:46:59.295 I really try to sort

NOTE Confidence: 0.90715903

00:46:59.295 --> 00:47:00.675 of get to,

NOTE Confidence: 0.9929795

00:47:01.055 --> 00:47:02.015 to be honest, it it

NOTE Confidence: 0.9929795

00:47:02.015 --> 00:47:02.975 takes me I get a

NOTE Confidence: 0.9929795

00:47:02.975 --> 00:47:04.175 lot of the information from

110

NOTE Confidence: 0.9929795

00:47:04.175 --> 00:47:04.835 the history

NOTE Confidence: 0.98006254

00:47:05.535 --> 00:47:07.075 and with how they're presenting

NOTE Confidence: 0.98006254

00:47:07.135 --> 00:47:08.335 because I do think it's

NOTE Confidence: 0.98006254

00:47:08.335 --> 00:47:09.395 a rare diagnosis.

NOTE Confidence: 0.95234233

00:47:10.230 --> 00:47:12.070 So first things that I

NOTE Confidence: 0.95234233

00:47:12.070 --> 00:47:13.110 I try to make sure

NOTE Confidence: 0.95234233

00:47:13.110 --> 00:47:14.410 that it's not as recurrence,

NOTE Confidence: 0.9942469

00:47:15.030 --> 00:47:16.790 and sometimes we often forget

NOTE Confidence: 0.9942469

00:47:16.790 --> 00:47:18.489 that that is a reason

NOTE Confidence: 0.9942469

00:47:18.550 --> 00:47:19.910 for swelling and for them

NOTE Confidence: 0.9942469

00:47:19.910 --> 00:47:20.810 to look different.

NOTE Confidence: 0.9937328

00:47:21.510 --> 00:47:22.390 Also, you know, we talk

NOTE Confidence: 0.9937328

00:47:22.390 --> 00:47:23.210 about inflammatory

NOTE Confidence: 0.98301715

00:47:23.510 --> 00:47:25.210 breast cancer, which can also

NOTE Confidence: 0.99880075

00:47:26.205 --> 00:47:27.585 present that way.

NOTE Confidence: 0.9199328

00:47:28.765 --> 00:47:29.905 However, having,

NOTE Confidence: 0.99804056

00:47:31.485 --> 00:47:32.605 having sort of seen a

NOTE Confidence: 0.99804056

00:47:32.605 --> 00:47:33.425 few patients,

NOTE Confidence: 0.9650485

00:47:34.045 --> 00:47:35.645 I've realized that most the

NOTE Confidence: 0.9650485

00:47:35.645 --> 00:47:36.605 the reason why it's so

NOTE Confidence: 0.9650485

00:47:36.605 --> 00:47:37.965 difficult to diagnose is because

NOTE Confidence: 0.9650485

00:47:37.965 --> 00:47:39.325 it's hard to image as

NOTE Confidence: 0.9650485

00:47:39.325 --> 00:47:39.825 well.

NOTE Confidence: 0.9944139

00:47:40.400 --> 00:47:42.180 So we've currently developed,

NOTE Confidence: 0.99622196

00:47:43.280 --> 00:47:44.640 a few ways to image

NOTE Confidence: 0.99622196

00:47:44.640 --> 00:47:45.620 it in the clinic,

NOTE Confidence: 0.9994048

00:47:46.320 --> 00:47:47.060 by injecting

NOTE Confidence: 0.9846891

00:47:47.440 --> 00:47:48.800 very similar to you know,

NOTE Confidence: 0.9846891

00:47:48.800 --> 00:47:50.239 you can use ICG by

NOTE Confidence: 0.9846891

00:47:50.239 --> 00:47:52.080 injecting around the nipple areolar

NOTE Confidence: 0.9846891

00:47:52.080 --> 00:47:52.580 complex

NOTE Confidence: 0.9706004

00:47:52.965 --> 00:47:53.845 to take a look at

NOTE Confidence: 0.9706004

00:47:53.845 --> 00:47:55.445 what drains the breast into

NOTE Confidence: 0.9706004

00:47:55.445 --> 00:47:56.805 the XLL. Right? That's one

NOTE Confidence: 0.9706004

00:47:56.805 --> 00:47:58.005 of the ways to find

NOTE Confidence: 0.9706004

00:47:58.005 --> 00:47:59.364 your lymph node, for example,

NOTE Confidence: 0.9706004

00:47:59.364 --> 00:48:01.045 your central lymph node. So

NOTE Confidence: 0.9706004

00:48:01.045 --> 00:48:02.485 I started using that and

NOTE Confidence: 0.9706004

00:48:02.485 --> 00:48:03.545 as well as injecting

NOTE Confidence: 0.9889762

00:48:04.005 --> 00:48:05.785 some of the, the quadrants.

NOTE Confidence: 0.9525802

00:48:06.890 --> 00:48:08.650 I noticed that there it's

NOTE Confidence: 0.9525802

00:48:08.650 --> 00:48:09.870 also hard to differentiate

NOTE Confidence: 0.99942946

00:48:10.410 --> 00:48:11.390 from radiation

NOTE Confidence: 0.99839544

00:48:12.330 --> 00:48:13.310 induced edema.

NOTE Confidence: 0.9986143

00:48:13.770 --> 00:48:14.270 Right?

NOTE Confidence: 0.9977376

00:48:14.730 --> 00:48:15.630 So I think

NOTE Confidence: 0.997715

113

00:48:16.010 --> 00:48:17.130 those are that's why it's

NOTE Confidence: 0.997715

00:48:17.130 --> 00:48:18.670 such a difficult diagnosis.

NOTE Confidence: 0.97045326

00:48:19.050 --> 00:48:20.510 If they haven't had radiation,

NOTE Confidence: 0.9767293

00:48:21.105 --> 00:48:22.545 but they're still presenting with

NOTE Confidence: 0.9767293

00:48:22.545 --> 00:48:23.984 a heavy breast, with a

NOTE Confidence: 0.9767293

00:48:23.984 --> 00:48:24.885 lot of edema,

NOTE Confidence: 0.97358954

00:48:25.265 --> 00:48:26.864 edema that doesn't get better,

NOTE Confidence: 0.97358954

00:48:26.864 --> 00:48:27.744 when they do a lot

NOTE Confidence: 0.97358954

00:48:27.744 --> 00:48:29.525 of massaging, it gets better,

NOTE Confidence: 0.98241633

00:48:29.984 --> 00:48:31.605 I think that's breast related,

NOTE Confidence: 0.79691994

00:48:32.049 --> 00:48:33.510 lymphedema, breast cancer lymph breast

NOTE Confidence: 0.79691994

00:48:33.510 --> 00:48:34.043 cancer lymph

NOTE Confidence: 0.9945268

00:48:34.630 --> 00:48:35.989 but if they're if they've

NOTE Confidence: 0.9945268

00:48:35.989 --> 00:48:36.810 had radiation

NOTE Confidence: 0.98657686

00:48:37.110 --> 00:48:39.350 and they're very early following

NOTE Confidence: 0.98657686

00:48:39.350 --> 00:48:40.010 their course,

NOTE Confidence: 0.908879

00:48:41.110 --> 00:48:42.070 I don't think we can

NOTE Confidence: 0.908879

00:48:42.070 --> 00:48:43.910 diagnosis that diagnose it as

NOTE Confidence: 0.908879

00:48:43.910 --> 00:48:44.730 breast lymphedema.

NOTE Confidence: 0.96990967

00:48:45.030 --> 00:48:46.070 So it's a I think

NOTE Confidence: 0.96990967

00:48:46.070 --> 00:48:47.610 it's a very rare diagnosis,

NOTE Confidence: 0.96990967

00:48:47.750 --> 00:48:48.950 and there's only a couple

NOTE Confidence: 0.96990967

00:48:48.950 --> 00:48:51.005 of other places where we're

NOTE Confidence: 0.96990967

00:48:51.005 --> 00:48:52.205 kinda looking at how do

NOTE Confidence: 0.96990967

00:48:52.205 --> 00:48:53.405 we map it. Is it

NOTE Confidence: 0.96990967

00:48:53.405 --> 00:48:54.865 an actual diagnosis?

NOTE Confidence: 0.99078524

00:48:56.285 --> 00:48:57.165 So, yeah, it's a bit

NOTE Confidence: 0.99078524

00:48:57.325 --> 00:48:58.305 it's very tricky.

NOTE Confidence: 0.99860287

00:48:58.605 --> 00:48:59.405 Yeah. I think it's a

NOTE Confidence: 0.99860287

00:48:59.405 --> 00:49:01.325 diagnosis of exclusion. That's sort

NOTE Confidence: 0.99860287

00:49:01.325 --> 00:49:02.445 of how I would define

NOTE Confidence: 0.99860287

00:49:02.445 --> 00:49:03.345 it right now.

NOTE Confidence: 0.9980147

00:49:10.219 --> 00:49:11.119 Any other questions?

NOTE Confidence: 0.98889893

00:49:12.700 --> 00:49:13.660 Let me see if there's

NOTE Confidence: 0.98889893

00:49:13.660 --> 00:49:14.559 something here.

NOTE Confidence: 0.97429574

00:49:17.055 --> 00:49:18.255 There's a question here. Is

NOTE Confidence: 0.97429574

00:49:18.255 --> 00:49:19.935 it feasible to collect lymphatic

NOTE Confidence: 0.97429574

00:49:19.935 --> 00:49:20.974 fluid at the time of

NOTE Confidence: 0.97429574

00:49:20.974 --> 00:49:22.494 surgery? If it is feasible,

NOTE Confidence: 0.97429574

00:49:22.494 --> 00:49:23.375 what is the range of

NOTE Confidence: 0.97429574

00:49:23.375 --> 00:49:24.895 volumes that can be collected?

NOTE Confidence: 0.97429574

00:49:24.895 --> 00:49:26.175 That's a thank you for

NOTE Confidence: 0.97429574

00:49:26.175 --> 00:49:27.614 that question. So when we

NOTE Confidence: 0.97429574

00:49:27.614 --> 00:49:29.295 did that prospective trial where

NOTE Confidence: 0.97429574

00:49:29.295 --> 00:49:31.070 we looked at skin biopsies,

NOTE Confidence: 0.9393729

00:49:31.370 --> 00:49:32.910 looking at RNA sequencing,

NOTE Confidence: 0.98848677

00:49:33.530 --> 00:49:34.270 and immunohistochemistry,

NOTE Confidence: 0.9358652

00:49:35.210 --> 00:49:36.989 we try we collected skin,

NOTE Confidence: 0.9843487

00:49:37.610 --> 00:49:39.530 we collected fat, and we

NOTE Confidence: 0.9843487

00:49:39.530 --> 00:49:40.410 tried to collect,

NOTE Confidence: 0.9960987

00:49:41.450 --> 00:49:42.590 lymphatic fluid.

NOTE Confidence: 0.9991236

00:49:42.890 --> 00:49:45.070 Collecting lymphatic fluid is actually

NOTE Confidence: 0.9991236

00:49:45.210 --> 00:49:45.710 excessively

NOTE Confidence: 0.9991848

00:49:46.224 --> 00:49:46.724 difficult.

NOTE Confidence: 0.913166

00:49:48.145 --> 00:49:49.505 We tried to, you know,

NOTE Confidence: 0.913166

00:49:49.505 --> 00:49:50.724 use different pipettes,

NOTE Confidence: 0.98230654

00:49:51.185 --> 00:49:52.385 and it was actually very

NOTE Confidence: 0.98230654

00:49:52.385 --> 00:49:53.744 difficult. The range of volumes

NOTE Confidence: 0.98230654

00:49:53.744 --> 00:49:55.265 that are collected are very

NOTE Confidence: 0.98230654

00:49:55.265 --> 00:49:55.765 minimal.

NOTE Confidence: 0.9811571

00:49:56.385 --> 00:49:56.885 Maybe

NOTE Confidence: 0.98679614

00:49:57.505 --> 00:49:58.704 one ml would be the

NOTE Confidence: 0.98679614

00:49:58.704 --> 00:49:59.820 max, and I'm not sure

NOTE Confidence: 0.98679614

00:49:59.820 --> 00:50:01.180 that that's enough to do

NOTE Confidence: 0.98679614

00:50:01.180 --> 00:50:01.980 any sort of,

NOTE Confidence: 0.9984126

00:50:02.940 --> 00:50:04.400 sort of studies with that.

NOTE Confidence: 0.9936456

00:50:05.100 --> 00:50:06.720 The other way to potentially

NOTE Confidence: 0.9936456

00:50:06.940 --> 00:50:08.540 collect it, and this is

NOTE Confidence: 0.9936456

00:50:08.540 --> 00:50:09.840 in patients who,

NOTE Confidence: 0.99635977

00:50:11.180 --> 00:50:12.560 are undergoing liposuction,

NOTE Confidence: 0.95778495

00:50:13.805 --> 00:50:15.005 is to collect it in

NOTE Confidence: 0.95778495

00:50:15.005 --> 00:50:15.745 the lipoaspirate,

NOTE Confidence: 0.9836095

00:50:16.365 --> 00:50:17.485 but then you'd have to

NOTE Confidence: 0.9836095

00:50:17.485 --> 00:50:18.525 be able to find a

NOTE Confidence: 0.9836095

00:50:18.525 --> 00:50:19.725 way to sort of divide

NOTE Confidence: 0.9836095

00:50:19.725 --> 00:50:22.205 it divide the, light lipid

NOTE Confidence: 0.9836095

00:50:22.205 --> 00:50:23.645 portion of it to the

NOTE Confidence: 0.9836095

00:50:23.645 --> 00:50:24.145 lymphedema

NOTE Confidence: 0.9847545

00:50:24.445 --> 00:50:26.125 to the lymphatic fluid portion

NOTE Confidence: 0.9847545

00:50:26.125 --> 00:50:27.013 of it, and I think

NOTE Confidence: 0.9847545

00:50:27.013 --> 00:50:28.373 that can also be very

NOTE Confidence: 0.9847545

00:50:28.373 --> 00:50:30.213 difficult. But that's potentially another

NOTE Confidence: 0.9847545

00:50:30.213 --> 00:50:31.193 way to do it.