My name is metrical Shannon and welcome to the Yale Cancer Center Smilow Cancer Hospital breast Program CME lecture series.

We're going to wait a few minutes to have allow people to log in and hopefully right at 12 or 1201 will start.

I'll be introducing Doctor Elizabeth Berger, Doctor Melanie Lynch and Doctor Rachel Greenup.

The format will be that they will be giving them three talks in a row and please put in as many questions as you like in the chat box.

And we will do our best to have
an interactive session at the end, answering those questions and we really look forward to hearing your perspectives as well.

So, uh, good afternoon, my name is Macrogol Shannon. Welcome to the Yale Cancer Center, Smilow Cancer Hospital breast program CME lecture series. Hopefully people will be continuing to log in. We really appreciate those of our colleagues here in Connecticut and it. Yeah, and especially our counterparts around the world.
I see my colleagues from China from Japan, Turkey, South Korea and other places as well. So welcome, we’re going to have three fantastic lectures of this afternoon. We’ll start with Doctor Elizabeth Berger, who’s assistant professor of surgery. Here at the Yale Cancer Center, Yale Department of Surgery discussing updates and surgical management of our best of our breast cancer patients. Then it will be followed by Doctor Melanie Lynch, who is the director of Our Breast program and breast Surgery at Bridgeport Hospital. Talking about Uncle plastic and breast conservation,
Finally, least, but not last, our section Chief for El surgery, Doctor Rachel Greenup, will be discussing young women with breast cancer surgical perspective.

Please put in as many questions as you like into the chat box, and we will do our best to go through your questions and have an interactive dialogue as much as possible. The nice thing is that this is going to be recorded so you can go back and watch or listen or certainly forward it to colleagues and friends or around.
the country and around the world.

And this is the first of a three part series.

Our next one will be May 27th.

Will have Doctor Maryam Lustberg who's
our incoming breast program director,
so with no further ado,
Doctor Elizabeth Berger, the podium is yours.

Good morning I guess.

Thank you Doctor Wilson
for that introduction.

Good morning I guess.
Not good morning.
Good afternoon everyone.
My name is Elizabeth as Doctor Wilson
mentioned and I'm a new assistant

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00:04:59.647 --> 00:05:01.649 professor here at Yale and hopefully
00:05:01.649 --> 00:05:03.672 in the next 15 to 20 minutes.
00:05:03.680 --> 00:05:05.970 I'll be just reviewing some
00:05:05.970 --> 00:05:08.260 updates and breast cancer surgery.
00:05:08.260 --> 00:05:09.870 In kind of the 21st,
00:05:09.870 --> 00:05:12.446 if not the most recent five year history,
00:05:12.450 --> 00:05:15.597 so I'm sure a lot of you have seen this meme
00:05:15.597 --> 00:05:18.557 on Twitter or other places in the Internet.
00:05:18.560 --> 00:05:20.835 Now, where, how's it started and
00:05:20.835 --> 00:05:23.068 where it's going so you know,
00:05:23.070 --> 00:05:25.743 I'm sure we all know it started back with
00:05:25.743 --> 00:05:28.216 really William Halsted in the late 1800s,
00:05:28.220 --> 00:05:29.830 thinking that breast cancer was,
00:05:29.830 --> 00:05:30.474 you know,
00:05:30.474 --> 00:05:32.084 kind of locally advanced disease,
and so the whole side, mastectomy became kind of a routine operation for women where there was a removal of the PEC major muscle, the PEC minor muscle. Breast, all the lymph nodes and in fact, interestingly, the removal of the muscle was felt because anatomically it was felt that doing a level 1-2 and three axillary lymph node dissection was not anatomically feasible without removing that muscle. We’ve made a lot of progress since then and now we think more about just lumpectomy’s saving the breast tissue.
Not having to do so much axillary surgery. Bernie Fisher, one of my favorite quotes from him. In God we trust all others must have data. It was really revolutionary in our country, especially thinking about how we can start to deescalate surgical care and all care in breast cancer with similar oncologic outcomes for our patients. So in thinking about the deescalation of Breast Cancer Care. The Italians very easy were instrumental in thinking about how we can compare quadrant,ectomy and radiation to really
this idea about Halsted mastectomy
and so they conducted a well done study in the 1970s.
Bernie Fisher in Pittsburgh conducted the B6 trial looking at total mastectomy versus.
Lumpectomy with radiation.
We then moved into the 1990s where we started thinking about deescalation of radiation therapy with the CLG trial with Kevin Hughes.
Then Doctor Giuliano and a lot of other people looked at deescalation of axillary surgery in the 1990s and early 2000s.
With this 11 trial.
Moving forward, we then thought about maybe there are even options to deescalate chemotherapy for some of our patients, especially in the ER PR positive cohorts with the tailor X trial. And now on going even there are multiple trials actually throughout the world, the common trials actually in the United States looking at deescalation of surgery and surveillance only for some subsets of DCIS. So we even now are talking about maybe we can actually eliminate surgery altogether with some patients.
There are ongoing trials looking at excellent responders, and so these excellent responders are considered women who, after neoadjuvant chemotherapy, no longer have any residual radiologic findings of cancer in their breasts. All four actually of these trials are three main ones throughout the world. Again, have looked at can we buy Oxy these now radiologic? Areas where there is no longer cancer and maybe even avoid surgery on some of these patients, but the data is still pretty raw.
considering that in all these trials we still found a false negative rates very high and the thought is that they did some subgroup analysis and felt that the false negative rate was lowest amongst her two positive in triple negative disease. However, these are really the highest group risk patients as we know to miss disease because of the ongoing or because of the trials that we’ve looked at. With the addition of TDM wanan capeside, it being the agent setting for her two positive season triple negative that
00:09:00.839 --> 00:09:03.197 improve overall and disease free survival.
NOTE Confidence: 0.794793912
00:09:03.200 --> 00:09:05.568 So although we might get to a point
NOTE Confidence: 0.794793912
00:09:05.568 --> 00:09:07.848 where if we have excellent responders
NOTE Confidence: 0.794793912
00:09:07.848 --> 00:09:10.879 and not have to perform surgery on them,
NOTE Confidence: 0.794793912
00:09:10.880 --> 00:09:13.250 I think that’s still a
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00:09:13.250 --> 00:09:15.620 little bit in the future.
NOTE Confidence: 0.794793912
00:09:15.620 --> 00:09:15.926 Alright,
NOTE Confidence: 0.794793912
00:09:15.926 --> 00:09:19.163 so if we have to do surgery on our patients
NOTE Confidence: 0.794793912
00:09:19.163 --> 00:09:22.026 then what are the really the updates?
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00:09:22.030 --> 00:09:24.134 So I’m going to briefly touch on some
NOTE Confidence: 0.794793912
00:09:24.134 --> 00:09:26.530 of the GNU localization techniques that
NOTE Confidence: 0.794793912
00:09:26.530 --> 00:09:28.790 we’re using for press conservation.
NOTE Confidence: 0.794793912
00:09:28.790 --> 00:09:30.572 What what our margin status and
NOTE Confidence: 0.794793912
00:09:30.572 --> 00:09:32.710 when should we re excited patients
NOTE Confidence: 0.794793912
00:09:32.710 --> 00:09:34.486 after they undergo surgery?
NOTE Confidence: 0.794793912
00:09:34.490 --> 00:09:35.778 Some **** sparing discussions
in terms of who is a candidate, the management of the XR on going discussions on going confusion about upfront surgical management, neoadjuvant therapy, and the surgical management of XR. A brief touch on stage four disease and in high risk lesions went to excise so wire localizations of breast lesions are has been very common across the country and many places actually are still using wires. However, we know that wires need to be placed the same day of surgery.
There can be very challenging logistics with wires. They can lead to potential or delays of the wires placed in the morning and something happens oftentimes they are gets delayed. These wires can get dislodge. They’re often hanging outside of the women’s breast, and so in travel and transport they can get dislodged. They can lead to larger lumpectomy specimens as well. Many patients complain of dissatisfaction being cold,
being scared of having wires outside of their breasts, and then obviously, if the case were to get cancelled for any reason, those wires have to get replaced. They have to get removed and then replaced again if they have to come back for surgery. So what we’ve looked at then in how to localize, and this is just a map from a study that was actually done looking at one institution’s experience with wires and how many different touchpoints patients have when they actually have to get the wired on the same day of surgery,
and as you can see, it’s a mess of spaghetti if you will, because now what we are moving towards are what we call seeds. Seeds are a nice option for patients because they can get placed anytime before surgery. They don’t have to be placed the day of surgery. It completely decouples the scheduling of radiology and surgery, so that increases the flexibility with surgeon flexibility and with radiology flexibility. They’ve been shown in various different
studies to minimize OR delays it allows.

Obviously, for our first case start, the patient can get their seat placed a few days before and come in and still go to the operating room at 7:15 or 7. There have been data looking at that. They create smaller lumpectomy specimens and overall there’s some reports on improved patient satisfaction. You know, they don’t have to spend all day at the hospital. You know, they don’t be NPO for so long, and they can get this done.
00:12:03.976 --> 00:12:06.260 at their leisure.
NOTE Confidence: 0.8000743
00:12:06.260 --> 00:12:10.646 Kind of the previously to surgery.
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00:12:10.650 --> 00:12:14.157 So in the Mount margins and how?
NOTE Confidence: 0.8000743
00:12:14.160 --> 00:12:18.669 How much is enough to take for breast tissue?
NOTE Confidence: 0.8000743
00:12:18.670 --> 00:12:21.170 One of our colleagues here,
NOTE Confidence: 0.8000743
00:12:21.170 --> 00:12:22.172 Doctor Moran,
NOTE Confidence: 0.8000743
00:12:22.172 --> 00:12:24.176 was instrumental in creating
NOTE Confidence: 0.8000743
00:12:24.176 --> 00:12:26.180 a consensus guideline study.
NOTE Confidence: 0.8000743
00:12:26.180 --> 00:12:28.032 An expert multidisciplinary panel.
NOTE Confidence: 0.8000743
00:12:28.032 --> 00:12:30.810 In looking at what should our
NOTE Confidence: 0.8000743
00:12:30.884 --> 00:12:33.200 margins before invasive disease,
NOTE Confidence: 0.8000743
00:12:33.200 --> 00:12:36.719 but also for DCIS and so there was a
NOTE Confidence: 0.8000743
00:12:36.719 --> 00:12:39.810 multi disciplinary panel convened.
NOTE Confidence: 0.8000743
00:12:39.810 --> 00:12:42.365 They looked at meta analysis of 33
NOTE Confidence: 0.8000743
00:12:42.365 --> 00:12:44.659 studies with over 28,000 patients,
NOTE Confidence: 0.8000743
00:12:44.660 --> 00:12:47.460 and in the invasive setting what they
found was that no tumor on ink was a safe margin and that it did not increase its lateral breast tumor recurrence. If we truly had no tumor on ink, and the thought was that because of the systemic therapy after invasive disease, that this was a sufficient margin because of for the invasive disease. They asked the same question in the DCIS setting, So what we know about DCIS is that it often has skipped lesions. It’s not just necessarily one focal mass and so, and we often don’t give
systemic therapy for DCIS,

so the thought was in looking at

the analysis of over 30 studies

thought was that 2 millimeters of.

Margin was sufficient to reduce

the risk of in breast recurrence.

They did look at various margin widths. 5 millimeters, 1 centimeter and further

margin with did not decrease in breast

recurrence and so to this day we

still use the 2 millimeter margin.

With for pure DCIS in the breast,

no tumor on ink for invasive.
And our very own Doctor Tag power here at Yale and multiple others here at Yale did a randomized control trial looking at this principle of margins, which was published not so long ago in the New England Journal of Medicine. The thought was so people do margin very differently. In breast surgery some people take margins off the actual specimen. Some do full shave margins within the cavity routinely. Some do select margins based upon what their image. What’s their specimen?
Looks like on the image radiograph and so this trial asked that very question about whether shave margins help with decreasing margin positive ITI they looked at 235 patients. They were randomized so they underwent a lumpectomy and then they were randomized to essentially no additional straight margins or routine shape margins. And as you can imagine, what they found was that in routine shape margins it reduced the margin. Margin positive ITI rate and the reexcision rate so less patients had to go back to the operating room for further reexcisions less.
patients had positive margins.

So if we’re not doing breast conservation and we’re thinking about mastectomies, what are some of the options for patients in mastectomies?

We’ve now had a lot longer term data in looking at sparing mastectomy’s. The data is still relatively new.

Consider all things considered, but a lot more longitudinal data that sparing mastectomy’s that are safe for patients uncle.

Logically, however there are definitely criteria that we consider when we think

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00:15:25.274 --> 00:15:27.530

00:15:27.530 --> 00:15:30.833

00:15:30.833 --> 00:15:32.734

00:15:32.734 --> 00:15:34.966

00:15:34.970 --> 00:15:36.470

00:15:36.470 --> 00:15:38.720

00:15:38.784 --> 00:15:40.174

00:15:40.174 --> 00:15:42.034

00:15:42.040 --> 00:15:42.436

00:15:42.436 --> 00:15:44.416

00:15:44.416 --> 00:15:46.705
about performing a ****** sparing

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mastectomy conservatively I would

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say a lot of people still use the two

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centimeters that the cancer should be

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2 centimeters away from the ******.

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Oftentimes we think about early stage

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breast cancer patients as appropriate.

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****** sparing mastectomy candidate.

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The idea of multi focal multi

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centric disease.

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Most people will stay away from offering

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****** sparing for those patients.

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And of course if they have any

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significant ptosis of the brassware,

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their cosmetic outcome wouldn’t

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be inappropriate.
Cosmetic outcome for ****

Sparing mastectomy.

Prophylactic surgery is a great option for patients if they are undergoing prophylactic surgery for **** sparing.

Mastectomy is an I'll show you a trial looking at the Braca population.

Strong contraindications for **** sparing so any locally advanced or inflammatory breast cancer or we do not want to leave skin behind and so we would not offer our patients ****

Any kind of skin involvement and Springs for those types of cancers.
of course any kind of pathological radiologic involvement of the ******.

Our clinical involvement of the ****** as well, and then we think about high risk patients for Noble Springs. Not that we wouldn’t offer them if they’re smokers or diabetics but we definitely counsel patients in terms of them having higher risk of ****** necrosis with these risk factors. So looking at the   prophylactic   sparing mastectomy in the Bracco population, about 550 patients were looked at in
this JAMA study and found that there was no ipsilateral breast cancer recurrence in the risk reducing ***** sparing mastectomy group so it was deemed a safe technical procedure thinking also keeping in mind though that the median followups are still only 34 or 56 months. These are obviously getting more longitudinal as as time progress is, but overall you know. I think we all agree that ***** sparing’s are safer genetic variant carriers. And then what about the contralateral prophylactic mastectomy conversation? You know?
I think a lot of women come into clinic saying I want both of my breasts removed if I have cancer. I never want this coming back. I don’t want it to spread from one breast to the other. We know breast cancer doesn’t spread that way. We know that contralateral prophylactic mastectomy is actually not associated with a survival benefit. It’s double the surgery. It’s double the risk of complication. It’s double the recovery time. It’s definitely appropriate in for some women,
and you know if the anxiety and the angst of having breast cancer is just too much for them. I think that’s in completely appropriate reason to do a contralateral prophylactic mastectomy, but I think making sure that the patients understand and have a good understanding of the data behind why they’re choosing such a thing. There’s also you know dysfunction, psychological dysfunction with losing sensation of their entire chest, all things to think about, and to really encourage a shared.
00:18:51.736 --> 00:18:53.430 decision making with your patience.
NOTE Confidence: 0.8320103
00:18:55.660 --> 00:18:57.208 So the surgical management
NOTE Confidence: 0.8320103
00:18:57.208 --> 00:18:59.143 of the XR has changed.
NOTE Confidence: 0.8320103
00:18:59.150 --> 00:19:01.502 I would argue drastically in the last
NOTE Confidence: 0.8320103
00:19:01.502 --> 00:19:03.915 20 years where we’re obviously using
NOTE Confidence: 0.8320103
00:19:03.915 --> 00:19:06.140 a lot more neoadjuvant therapies.
NOTE Confidence: 0.8320103
00:19:06.140 --> 00:19:07.432 Now for our patients,
NOTE Confidence: 0.8320103
00:19:07.432 --> 00:19:09.370 targeted therapies for the her two
NOTE Confidence: 0.8320103
00:19:09.436 --> 00:19:11.486 positive patients were thinking more
NOTE Confidence: 0.8320103
00:19:11.486 --> 00:19:13.536 about immunotherapy for the triple
NOTE Confidence: 0.8320103
00:19:13.600 --> 00:19:15.448 negative breast cancer patients.
NOTE Confidence: 0.8320103
00:19:15.450 --> 00:19:18.218 So what we know is that in looking
NOTE Confidence: 0.8320103
00:19:18.218 --> 00:19:20.489 at Sentinel lymph node biopsy’s,
NOTE Confidence: 0.8320103
00:19:20.490 --> 00:19:22.812 there are two ways to localize
NOTE Confidence: 0.8320103
00:19:22.812 --> 00:19:23.973 Sentinel lymph nodes.
NOTE Confidence: 0.8320103
00:19:23.980 --> 00:19:24.648 Blue dye.
Whether it’s methylene blue or I so flooring blue and then are usually a radioactive isotope, technetium is one of them. Some surgeons use both. Some surgeons just use one. We do know that in the upfront surgical setting the we find that the false negative rate of less than 10% is inappropriate. False negative rate for Sentinel lymph node biopsy’s and that single tracer is appropriate in the upfront surgical setting for that principle of false negative rate.
I only show these pictures because I think it’s helpful to really see what the gamma probe is that we use to find that radioactive isotope in the XR. The blue dye really does work. We find blue nodes. That are are representative of Sentinel lymph node and just the principle of the level one and then going back to the beginning slide of the whole. So mastectomy. Really the Level 3 lymph nodes that are medial to the PEC minor muscle. So in the upfront setting. If we have clinically node negative patients,
we can offer them a central lymph node biopsy if they have any clinically palpable adenopathy in the XR.
Right now the right answer is to do an actual lymph node dissection. If we're doing upfront surgery. Keeping in mind that if they're clinically node negative, the Z 11 trial and the amaros trial and there was a lot of other good trials actually happening around the same time as the 11 trial. This just happened to occur in the United States, so we do tend to talk about
00:21:00.179 --> 00:21:02.039 it a lot more here.
NOTE Confidence: 0.8320103
00:21:02.040 --> 00:21:04.044 But what we found was that
NOTE Confidence: 0.8320103
00:21:04.044 --> 00:21:05.380 in the upfront setting,
NOTE Confidence: 0.8320103
00:21:05.380 --> 00:21:07.276 if there was no clinically couple
NOTE Confidence: 0.8320103
00:21:07.276 --> 00:21:09.599 adenopathy in the XR that we could
NOTE Confidence: 0.8320103
00:21:09.599 --> 00:21:11.264 leave some maxillary disease behind
NOTE Confidence: 0.8320103
00:21:11.264 --> 00:21:13.460 with no sacrifice of Uncle Logic.
NOTE Confidence: 0.8320103
00:21:13.460 --> 00:21:15.460 Outcomes so these 900 women,
NOTE Confidence: 0.8320103
00:21:15.460 --> 00:21:17.530 about 850 patients were randomized
NOTE Confidence: 0.8320103
00:21:17.530 --> 00:21:19.600 to either axillary lymph node
NOTE Confidence: 0.8320103
00:21:19.600 --> 00:21:21.606 dissection or no additional axillary
NOTE Confidence: 0.8320103
00:21:21.606 --> 00:21:24.375 surgery if they had one or two
NOTE Confidence: 0.8320103
00:21:24.375 --> 00:21:26.280 positive Sentinel lymph nodes on
NOTE Confidence: 0.8320103
00:21:26.280 --> 00:21:28.182 their central lymph node biopsy.
NOTE Confidence: 0.8320103
00:21:28.182 --> 00:21:28.934 And Interestingly,
NOTE Confidence: 0.8320103
00:21:28.934 --> 00:21:32.210 in the patients who want to access section,
28% of them had additional positive axillary lymph nodes. However, thinking that it was randomized, the patients who did not go on to additional surgery probably had. Additional axillary disease that was left behind, and we found that there was no difference in axillary recurrences, survival, or disease free survival, so we feel comfortable now that if patients who have one or two positive lymph nodes on settling down biopsy in the upfront surgical setting that we do not need to go on.
00:22:02.416 --> 00:22:04.976 to perform the access section.

NOTE Confidence: 0.791849429999999

00:22:04.980 --> 00:22:07.584 However, I think that

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00:22:07.584 --> 00:22:10.839 principle is going to become.

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00:22:10.840 --> 00:22:13.710 More challenge maybe if you will with

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00:22:13.710 --> 00:22:16.809 these new results of the RX Ponder trials.

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00:22:16.810 --> 00:22:19.568 So in ER positive disease the tailor

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00:22:19.568 --> 00:22:23.053 X trial as I showed you a few slides

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00:22:23.053 --> 00:22:25.960 ago looked back in the early 2000s.

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00:22:25.960 --> 00:22:27.950 Looked at ER positive disease

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00:22:27.950 --> 00:22:29.144 node negative patients,

NOTE Confidence: 0.791849429999999

00:22:29.150 --> 00:22:31.929 and who benefited from chemotherapy or not.

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00:22:31.930 --> 00:22:34.318 The Oncotype score is a genomic.

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00:22:34.320 --> 00:22:36.228 The genomic testing on

NOTE Confidence: 0.791849429999999

00:22:36.228 --> 00:22:38.136 the actual tumor itself.

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00:22:38.140 --> 00:22:40.276 And it gives us a score from zero

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00:22:40.276 --> 00:22:42.849 to 50 and it was a non inferior
NOTE Confidence: 0.791849429999999
00:22:42.849 --> 00:22:45.046 trial looking at women who either
NOTE Confidence: 0.791849429999999
00:22:45.046 --> 00:22:47.470 got hormone therapy or loan or
NOTE Confidence: 0.791849429999999
00:22:47.470 --> 00:22:49.312 chemotherapy plus hormone therapy and
NOTE Confidence: 0.791849429999999
00:22:49.312 --> 00:22:52.000 an if their score was less than 25,
NOTE Confidence: 0.791849429999999
00:22:52.000 --> 00:22:54.520 we felt that we found that they did
NOTE Confidence: 0.791849429999999
00:22:54.520 --> 00:22:56.746 not benefit from chemotherapy and
NOTE Confidence: 0.791849429999999
00:22:56.746 --> 00:22:58.778 hormone therapy was sufficient.
NOTE Confidence: 0.791849429999999
00:22:58.780 --> 00:23:00.740 That was in the node.
NOTE Confidence: 0.791849429999999
00:23:00.740 --> 00:23:01.520 Negative patients,
NOTE Confidence: 0.791849429999999
00:23:01.520 --> 00:23:04.994 however the RX Ponder trial,
NOTE Confidence: 0.791849429999999
00:23:04.994 --> 00:23:09.317 which is still ongoing,
NOTE Confidence: 0.791849429999999
00:23:09.317 --> 00:23:10.893 just about four months ago at
NOTE Confidence: 0.791849429999999
NOTE Confidence: 0.791849429999999
00:23:12.855 --> 00:23:13.249 looked at the same question
NOTE Confidence: 0.791849429999999
in now node positive patients,

one to three node positive patients,

one or two or three positive lymph nodes.

And what we think is their finding

the same things that women who

have a score of less than 25

hormone therapy is sufficient.

Keeping in mind, though,

we still think that chemotherapy

benefits pre menopausal women.

What it means is,

is that if a woman has a clinically palpable

lymph node and wants to avoid chemotherapy,
then it could be possible where we take them to surgery first, we do an access section to find exactly how many positive lymph nodes they have, and then we could potentially avoid giving them chemotherapy. Alright, So what about if we give patients neoadjuvant therapy? Historically, the standard of care for clinically no positive patients even after neoadjuvant was still an access section, but some of these trials found that actually are nodal PC RAR,
pathologic complete response. The rate in the XR was quite high, and so we felt that maybe we could avoid giving. Avoid doing an access section after neoadjuvant. But the scary thing is, maybe this would decrease our or increase our false negative rate, lower identification rate, or higher false negative rate because of the non uniform effective chemotherapy for well done trials. The time that demonstrated that if you use dual tracer that blue...
dye and radioactive isotope as I showed and you were moved at least three central lymph nodes, the false negative rate was inappropriate less than 10%. However, we do know that if. Any lymph nodes remain positive after new agent chemotherapy. We still go on tax dissection, but that is also getting looked at in an ongoing alliance trial where maybe like the Z 11 trial where we know we left some disease behind, maybe actually radiation is going to
be sufficient enough and we can still leave some ancillary disease behind.

We are using a lot more neoadjuvant endocrine therapy.

Ferrari are positive patients, especially in the light of the RX Ponder trial. An especially during kovid, for instance, and So what is the data?

What are the data with neoadjuvant androgen therapy?

We know that the PCR rates are low.

They it does help with breast conservation eligibility.

We think for neoadjuvant enterkin therapy, they do need a lot of new management and therapy.
About six months, however, we do think this was a nicely done child out of data are done at Dana Farber. We do think that in the clinically T1 or T2N0 patients, they had a low residual nodal burden after neoadjuvant endocrine therapy. So maybe we can extrapolate that and say: If they only have one or two positive lymph nodes after neoadjuvant endocrine therapy, we actually don’t have to go on to access section. Alright, I brief update on stage four disease. So why do we operate on stage four disease?
Oftentimes, it’s palliative wound control bleeding. If there’s an aquatic tumor. And oftentimes, unfortunately, our patients present with operable disease, even if their stage four, they tend to be healthy. We are finding a lot more stage four disease because of better imaging, and there’s been a lot of mixed retrospective reviews. Looking at this question of whether surgery helps with stage four disease. Doctor Khan out of northwestern just essentially finished a randomized controlled trial.
Looking at this various, this very question on whether surgery help stage four disease and the really final result. Final conclusion was that surgery and radiation did not extend survival in these de Novo metastatic breast cancer patients. The big question behind it is the idea of oligo metastatic. So if there’s one small little lesion somewhere else. Maybe it will help because we’re not the data is. This is so new that we don’t have.
all the data in terms of all the patients involved in this study, but we still don’t think that surgery is going to help. It is helping stage for de Novo patients and last but not least, so high risk lesions can be very complex, complicated, very scary for women. So based upon a lot of you know various data from across the country in terms of when we excite some of these high res high risk lesions, and when we don’t, the thought is is thinking about the upgrade rate and what I mean by upgrade rate is.
If you biopsy something and then take it out, what is the chance that you’re going to find something more than what it was just on the core needle biopsy? And so the thought is, is Ath DCIS obviously comes out a LH and classic LCS. Stays in because the low upgrade rate, but plea Amorphic and Florida else I should come out. Also keeping in mind that all of these high risk lesions, the ADH in the LH LCS increased your risk of developing breast above breast cancer later in life.
00:28:32.940 --> 00:28:34.276 That’s all I have.
NOTE Confidence: 0.7380038
00:28:34.276 --> 00:28:35.946 I think I went overtime,
NOTE Confidence: 0.7380038
00:28:35.950 --> 00:28:36.949 so I apologize.
NOTE Confidence: 0.8521019
00:28:38.460 --> 00:28:40.878 Doctor Berger that you know to
NOTE Confidence: 0.8521019
00:28:40.878 --> 00:28:43.267 cover all these advances in breast
NOTE Confidence: 0.8521019
00:28:43.267 --> 00:28:45.717 surgery over the last year or so.
NOTE Confidence: 0.8521019
00:28:45.720 --> 00:28:47.630 That’s really impressive. Thank you.
NOTE Confidence: 0.8521019
00:28:47.630 --> 00:28:49.916 Next, we have doctor Melanie Lynch,
NOTE Confidence: 0.8521019
00:28:49.920 --> 00:28:52.587 an expert in Aqua plastic breast surgery,
NOTE Confidence: 0.8521019
00:28:52.590 --> 00:28:54.888 giving us some of the latest.
NOTE Confidence: 0.80811054
00:28:59.860 --> 00:29:01.240 Oh, you’re you’re on mute.
NOTE Confidence: 0.8389549
00:29:04.300 --> 00:29:10.830 I mute myself and share my screen. Anne.
NOTE Confidence: 0.8389549
00:29:10.830 --> 00:29:13.485 Well, that was a fellowship in half an hour.
NOTE Confidence: 0.8389549
00:29:13.490 --> 00:29:14.970 That was a wonderful talk.
NOTE Confidence: 0.8389549
00:29:14.970 --> 00:29:19.155 Thank you so much for that overview that was.
NOTE Confidence: 0.8389549
00:29:19.160 --> 00:29:20.985 Wonderful way to cover everything
49
and I’m going to focus on one small area on Oncoplastic breast breast surgery and current advances there. And really the mandate to consider oncoplastic breast surgery is really the burden of breast cancer. Over 300,000 women are affected every year and most of these women will have a surgical procedure and so given the number of breast cancer survivors in the United States, it’s incumbent upon us as breast surgeons to make sure that we are. Providing the best operations for patients not only to cure their breast cancer,
but to make sure that they have the best functional and cosmetic outcomes.

So when we think about breast cancer surgery, we think about mastectomies and then breast conservation, with a lumpectomy and followed by whole breast radiotherapy. But the lived consequences of these operations for our patients and for their bodies overtime, whether it's a mastectomy or whether a lumpectomy with radiation can affect their sense of self and can also affect their functional outcomes.

So as we think about plastic breast surgery,
there’s a lot of different definitions, consensus statements about what Uncle plastic surgery is. But I really like this description of Uncle plastic breast surgery as a philosophy. That we should be treating breast cancer surgically to cure the cancer and then to maintain and improve the cosmetic appearance of the breast. And that this requires a comprehensive consideration not only of the patient’s anatomy and the anatomy of their cancer, but with the patient’s own satisfaction with their breasts. The size and shape of their breast.
manage in their overall lifetime
00:31:07.469 --> 00:31:09.774 risk of breast cancer.
00:31:09.774 --> 00:31:11.838 And what the patient’s goals are,
00:31:11.840 --> 00:31:13.856 and so it’s a more comprehensive
00:31:13.860 --> 00:31:16.290 and complex consideration as we plan
00:31:16.290 --> 00:31:18.775 these operations for our patients.
00:31:18.775 --> 00:31:20.765 And so we can talk about all sorts
00:31:20.770 --> 00:31:25.479 of incisions and approaches to
00:31:23.466 --> 00:31:25.479 every quadrant of the breast.
00:31:25.479 --> 00:31:27.584 And this is a summary from the Krishna
00:31:27.590 --> 00:31:30.286 Cloth paper that has really become
00:31:30.286 --> 00:31:32.330 kind of the Bible for our consideration
00:31:30.286 --> 00:31:34.860 of Uncle plastic breast surgery.
00:31:34.860 --> 00:31:37.445 But I’m just going to focus on a
00:31:37.450 --> 00:31:40.474 couple of key areas and techniques
00:31:40.474 --> 00:31:44.020 and uncle plastic breath surgery too.
Created an opportunity for conversation

so within breast conservation,

starting with the most basic operation

Asimple partial mastectomy are scar

placement should be considered.

Fundamental in this and we can place

our scars in places where the patients
don’t have to see them regularly.

It can either be at the edge of the

areola or the edge of the breast,

and when we start to think of

separating the substance,

the parenchyma of the breast from the

skin of the breast and organizing
our operation around that principle,

we find we have lots of ways we can approach this operation.

To put our scar in a cosmetic location and still have a good oncologic outcome.

For the simple partial mastectomy, the critical thing is to maintain the central location of the areolar complex, and in order to do that when we close the breast parenchyma after we have completed our lumpectomy, that needs to be oriented in a radial direction. So we’re always going to close up and down on the sides of the breast.
or from side to side or the top on

the top and bottom of the breast in

order to maintain the areolar complex in the middle of the breast.

If we find we can’t get to the tumor from one of those simple incisions,

we can start to use other techniques that have been developed and used by plastic surgeons,

but allow us to have more access to the breast parenchyma way.

Still having a good cosmetic incision and a good choice here is always a

Crescent or around block McMaster Pixie.

Because by creating that larger

NOTE Confidence: 0.83024573
00:33:27.275 --> 00:33:29.791 incision at the center of the breast
NOTE Confidence: 0.83024573
00:33:29.791 --> 00:33:31.546 around the ***** areolar complex,
NOTE Confidence: 0.83024573
00:33:31.546 --> 00:33:33.694 and then again thinking about the
NOTE Confidence: 0.83024573
00:33:33.694 --> 00:33:35.757 skin of the breast separate and
NOTE Confidence: 0.83024573
00:33:35.757 --> 00:33:38.115 apart from the parent of the breast
NOTE Confidence: 0.83024573
00:33:38.115 --> 00:33:40.335 that allows us to create broader
NOTE Confidence: 0.83024573
00:33:40.335 --> 00:33:42.158 planes of dissection and access
NOTE Confidence: 0.83024573
00:33:42.158 --> 00:33:43.928 tumors in more distal locations
NOTE Confidence: 0.83024573
00:33:43.928 --> 00:33:45.700 from the ***** areolar complex.
NOTE Confidence: 0.85058796
00:33:49.190 --> 00:33:51.054 Another another consideration is
NOTE Confidence: 0.85058796
00:33:51.054 --> 00:33:56.089 avoiding some of the common deformities
NOTE Confidence: 0.85058796
00:33:56.089 --> 00:33:58.450 volume in the breast or radiation.
NOTE Confidence: 0.85058796
00:33:58.450 --> 00:34:00.892 This picture here from the original
NOTE Confidence: 0.85058796
00:34:00.892 --> 00:34:03.458 Cluff paper shows that kind of
NOTE Confidence: 0.85058796
00:34:03.458 --> 00:34:05.190 classic birds beak deformity.
When we remove tissue from the 6:00 o’clock position of the breast, it creates scar radiation contracts the breast further and it pulls the areolar complex down and creates that kind of a deformity. We have multiple ways we can approach those tumors that would prevent that deformity, particularly by using a mastopexy approach. To allow us to excise skin over tumor to reshape the breast to refill the volume at the 6:00 o’clock pole and then recentralise the areolar complex. And then we can also work in partnership with our plastic surgery colleagues on several level 2.
techniques for breast reconstruction.

And this is a recent case.

That I did with my plastic surgery colleague here of a patient who had a 2 centimeter tumor that was involving the muscle of the chest wall in the upper inner quadrant of her left breast.

We chose to do a wise pattern mastopexy approach which gave us wide exposure of that area to allow excision of that tumor, including underlying muscle,

We were also able to do our axillary lymph node sampling.

Through this same incision again
through this principle that the breast parenchyma and the skin can be treated differently in these operations, we had wide enough exposure to the axle through this wise pattern incision that we were able to remove our lymph node without making a separate incision. And this is a patient at one week post up. Another approach for consideration is volume replacement for patients whose partial mastectomy volume is more than 20%, and sometimes it can be up to 30% of their breast when they don’t have a large breast volume. This is a patient who had a
invasive lobular cancer that was rather extensive on the MRI.

You can see that the cancer in the left breast you can see the biopsy clip. You can also see the cancer involving Cooper’s ligaments.

So even though she had a significant amount of subcutaneous tissue, the skin overlying skin was tethered to the tumor and that skin had to be removed as part of her reception. And we knew we were going to have to remove about 25% of her breast volume in order to fully encompass this. And this also kind of attest to the importance of MRI in some
00:36:40.822 --> 00:36:42.426 of this surgical planning,

NOTE Confidence: 0.8913484

00:36:42.430 --> 00:36:45.104 which I know is area of controversy.

NOTE Confidence: 0.8913484

00:36:45.110 --> 00:36:48.557 So for this patient we used AT DAP flap,

NOTE Confidence: 0.8913484

00:36:48.560 --> 00:36:51.248 which was a rotational flap from the

NOTE Confidence: 0.8913484

00:36:51.248 --> 00:36:53.815 lateral chest wall to fill that volume

NOTE Confidence: 0.8913484

00:36:53.815 --> 00:36:56.600 to allow for a complete wide resection,

NOTE Confidence: 0.8913484

00:36:56.600 --> 00:36:58.535 including overlying skin with an

NOTE Confidence: 0.8913484

00:36:58.535 --> 00:37:00.470 acceptable cosmetic result to allow

NOTE Confidence: 0.8913484

00:37:00.528 --> 00:37:02.348 her to have breast conservation.

NOTE Confidence: 0.8435561

00:37:05.400 --> 00:37:08.202 And so the outcomes of oncoplastic

NOTE Confidence: 0.8435561

00:37:08.202 --> 00:37:10.070 partial mastectomy are mostly

NOTE Confidence: 0.8435561

00:37:10.147 --> 00:37:11.899 reported in case series.

NOTE Confidence: 0.8435561

00:37:11.900 --> 00:37:14.618 There have been two large meta

NOTE Confidence: 0.8435561

00:37:14.618 --> 00:37:17.000 analysis looking at Uncle Logic,

NOTE Confidence: 0.8435561

00:37:17.000 --> 00:37:19.778 safety and outcomes in these cases,

NOTE Confidence: 0.8435561
including the rates of positive margins or rates of reexcision, the conversion to mastectomy, overall survival, disease free survival, and all of the expected surgical complications and our uncle plastic techniques. All this is a series from MD Anderson looking at Uncle Logic outcomes, including survival and disease free survival,
and it’s always important to consider breast conservation versus mastectomy, but this trial again proves the point that surgeons know their patients very well because our patients who have simple mastectomy without reconstruction are usually patients who either have comorbidities or disease.

Well, we know that these techniques are probably not going to be helpful to them. You can see in the red and the blue lines in these graphs that breast conserving surgery and breast conserving surgery with reconstruction have similar disease free and overall survival rates.
So what about patient reported outcomes in these operations? There are. This state is hard to collect and hard to analyze, and there are several trials that have looked at different. This was a larger study that looked at multiple types of oncoplastic procedures. This was a larger study that looked at multiple types of oncoplastic procedures with regards to patient reported outcomes as reported using the breast Q, which is one of the most comprehensive and best studied patient reported outcome measures. There are multiple components to the breast Q that include *****
well being breast appearance, emotional well being, and physical well being. This is kind of a busy slide, but it looks at the comparison of simple mastectomy without reconstruction. To implant based reconstruction to rotational flap reconstruction with an implant with and without an implant as well as free flap reconstruction and breast conservation. So as you move across the chart from left to right, the uncle plastic breast conservation procedures are at the right side.
We know women have higher overall patient satisfaction with breast conservation, and if that breast conservation includes an uncle plastic approach, a mammaplasty approach or even a volume replacement approach, we know that there.

So just briefly about Uncle Plastic approaches to mastectomy. Now that we’ve moved towards immediate reconstruction using both skin and ****** sparing mastectomy techniques, this is allowed us to preserve the skin. The skin pocket which may have some concerns with regards to Uncle logic safety.
Doctor Berger did present some data there. I’m going to just repeat briefly a little bit of the data about Uncle Plastic or Uncle logic safety, but we now have newer techniques in **** sparing mastectomy that allow us to change the size and shape of the skin pocket to allow for other options in mastectomy. So with regards to **** sparing mastectomy, I really appreciate this picture because it really shows both the value of our inframammary incision which most surgeons have adopted now as the. Safest incision with the best
outcomes as well as the use of ATM's and other matrices to help
us do prepectoral reconstruction, which also has improved outcomes for
patients, both functional and cosmetic.

Anne, as Doctor Berger described our patient selection for this operation is very important.
The size and shape of the breast. As well as patient risk factors, including diabetes and smoking,
are important to make sure we've assessed those, so we have optimal outcomes using this incision.

So the outcomes of **** sparing mastectomy have shown that it's both
Uncle logically safe and that our patient satisfaction and overall cosmetic outcomes are good. The American Society of Breast Surgeons, **sparing mastectomy rest** Registry reported a recurrence rate of 1.4% with none of the recurrences at the **areolar complex.** A Cochrane review that included over 11 studies with over 6000 participants found very. Compareable outcomes for **sparing.** Skin sparing an complete mastectomy with a trend towards improved aesthetic outcomes and quality of life for women.
00:42:29.498 --> 00:42:30.980 having ***** sparing mastectomy.
NOTE Confidence: 0.81972986
00:42:35.960 --> 00:42:38.802 And this is a study from Sloan
NOTE Confidence: 0.81972986
00:42:38.802 --> 00:42:41.859 Kettering using the breast Q an looking
NOTE Confidence: 0.81972986
00:42:41.859 --> 00:42:44.036 at outcomes with ***** sparing
NOTE Confidence: 0.81972986
00:42:44.036 --> 00:42:45.740 mastectomy versus total mastectomy.
NOTE Confidence: 0.81972986
00:42:45.740 --> 00:42:48.218 And there was a trend towards
NOTE Confidence: 0.81972986
00:42:48.218 --> 00:42:49.457 significance for psychosocial
NOTE Confidence: 0.81972986
00:42:49.457 --> 00:42:51.688 well being among those patients.
NOTE Confidence: 0.7949045
00:42:54.180 --> 00:42:55.419 So newer mastectomy,
NOTE Confidence: 0.7949045
00:42:55.419 --> 00:42:57.484 newer mastectomy techniques that can
NOTE Confidence: 0.7949045
00:42:57.484 --> 00:43:00.775 be used for women who are not optimal
NOTE Confidence: 0.7949045
00:43:00.775 --> 00:43:02.892 candidates for traditional ***** sparing,
NOTE Confidence: 0.7949045
00:43:02.892 --> 00:43:04.940 mastectomy with the inframammary
NOTE Confidence: 0.7949045
00:43:04.940 --> 00:43:06.988 incision include techniques that
NOTE Confidence: 0.7949045
00:43:06.988 --> 00:43:09.411 allow us to reshape and resize the
NOTE Confidence: 0.7949045
00:43:09.411 --> 00:43:11.476 skin pocket using a wise pattern
00:43:11.476 --> 00:43:14.058 using free ***** grafts to make a

00:43:14.058 --> 00:43:16.200 better size pocket for either implant

00:43:16.273 --> 00:43:18.613 based reconstruction or to use the

00:43:18.613 --> 00:43:21.240 patient’s own tissue for reconstruction.

00:43:21.240 --> 00:43:23.748 Whether that’s using a skin pedicle.

00:43:23.750 --> 00:43:27.120 Or using a rotational flap.

00:43:27.120 --> 00:43:29.688 And this includes the Goldilocks operation,

00:43:29.690 --> 00:43:32.270 which uses a local skin flap

00:43:32.270 --> 00:43:33.560 for that reconstruction.

00:43:36.950 --> 00:43:39.174 So it’s up to us to always consider

00:43:39.174 --> 00:43:41.358 what the best functional and cosmetic

00:43:41.358 --> 00:43:44.127 outcomes of our operations can be as

00:43:44.127 --> 00:43:46.239 we treat patients for breast cancer.

00:43:46.240 --> 00:43:48.776 Again, the priority always needs to be to

00:43:48.776 --> 00:43:51.398 make sure that we’re doing the operation.

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That's going to help achieve a cure for our patients' cancer, but then to consider how we can offer more patients breast conservation and how we can make sure to ensure the best cosmetic and functional outcomes for patients.

Thank you.

Thank you so much Doctor Lynch that is just absolutely fantastic. What a wonderful addition to our breast program and you know skills and techniques that I certainly can learn from you and so many others as well to an last but not least obviously is Doctor Rachel Green,
00:44:25.630 --> 00:44:27.038 Upper section chief in Breast Surgical oncology,
really discussing and focusing on the young woman’s perspective and breast cancer surgery.

And Doctor Lynch, you have a bunch of questions in the chat box and.

Into the answer and will have some time at the end.

Also to open it up to the larger audience. Thank you.

I’m just going to unmute myself and.

Get my slides connected alright,
well thank you everyone for joining us this afternoon.
As mentioned, my name is Rachel Greenup, I just joined Yale in February and I'm thrilled to be here and I’ll be talking today about young women with breast cancer perspectives from a surgeon. I have no relevant just disclosures, except that I became really interested in this topic from a clinical perspective when my dear friend was diagnosed with triple negative breast cancer at age 32, she’s doing well practicing as a surgeon in the Midwest, but I had the privilege of being part of her journey and learning a lot along the way. So, as mentioned, we know that breast cancer is a really
common disease in the United States with one in eight women over their lifetime being diagnosed with breast cancer. And this assumes that women live to be in their 8th decade. But we, when we look at women under 40, there’s only about 4% of new breast cancer cases affecting this younger population. I’m gonna be talking about a kind of popery of topics related to this young cohort, including breast cancer screening, the incidence, prevalence, biology, and prognosis. Thinking a bit about surgical issues and options,
discussing pregnancy,
associated breast cancer,
and then unique issues within survivorship care.
So there’s been a lot of controversy in the
last decade about breast cancer screening.
the US Preventive Taskforce originally recommended that women should wait to have breast cancer screen until they reached.
Age 50 the American Cancer Society has recommended that younger patients ages 40 to 44 should have a choice and that risk and potential benefit should be considered, including women who have a higher lifetime risk,
who should start at 40 years old.

The American Society of Breast Surgeons more recently came up with guidelines specific to our surgical community and that all women ages 25 and older should undergo formal risk assessment for breast cancer that women with an average risk should begin yearly screening starting at age 40 and women with a higher risk should include screening mammography with the potential for supplemental imaging including ultrasound and or MRI.

An they also included a really valuable component within their
screening recommendations, which included guidelines around breast density and that in the US means tomosynthesis imaging and or MRI with ultrasound. So in our world, many women do come in with this green detected cancer and you can see on the mammogram here highlighted in my circle that there’s a spiculated mass, but in a heterogeneously dense breast. Most women then go on have ultrasound and a biopsy showing cancer and they meet their surgical team either before or after this diagnosis. We know there are risk factors
for breast cancer, summer nature, summer nurture being female. Certainly as age increases over time, having a genetic mutation or a personal family history, we know that any prior biopsy, whether it’s benign or malignant, is associated with a higher lifetime risk. Menstrual history. There’s some data around race, and certainly breast density. The nurture piece we look at delayed childbirth, alcohol intake, high fat diet, smoking. There’s a lot of data.
Coming out, some of which has been driven by Melinda Irwin and terracing after it. Yeah looking at body weight, an exercise history of childhood or young adult radiation, an long term hormone replacement use. So we know that risk of breast cancer increases with age. These are data from the American Cancer Society, facts and figures from 2019 showing that risk of breast cancer peaks in the 7th decade across all races and ethnicities, and so you can see that in our younger patient population which is
diagnosed typically under age 45.

But that definition also varies in the literature. Breast cancer risk is less. Comment it occurs in about 10% of women under 40. There has been some speculation in the literature that young women’s breast cancer has been increasing over time in patients will often come in and ask us about that, but the data suggests that the prevalence is stable. We know that 50% of cancers in younger patients are breast cancers,
an unfortunately the survival. Is typically lower in young women. All of that being said, when you look at the risk of breast cancer in women in their 20s, it does remain relatively low and their risk of death is very low. In this population. When we look at tumor Biology so on the right that figure again is from the American Cancer Society data showing that the overwhelming majority of all breast cancer patients tend to be hormone receptor positive and
her two negative in our younger patients, they are more likely to have unfavorable or higher risk tumor biology, including higher risk of ER PR, negative tumors, higher Ki 67, expression, more likely to have lymphovascular invasion. And Grade 3 tumors. These data are older. They were published in 1994 in the Journal of Clinical Oncology, but they were important in first demonstrating that age alone young age alone was a poor prognostic factor,
so we know that women less than 35 represented on the graphs by the solid line had significantly worse outcomes across disease. Specific survival overall survival, an risk of recurrence. More recently, we can see that the Boston Group here looked at risk of local recurrence in younger women. If you look at the breast cancer cohort, overall, the overall risk of local recurrence after breast conservation was about 2%, but in the younger cohort defined in this study as ages 26 to 45, there was a five year cumulative risk of 5%. The figure on the left shows that this
00:51:46.484 --> 00:51:48.638 certainly varied by tumor subtype.
00:51:48.640 --> 00:51:51.412 With her two positive and triple negative
00:51:51.412 --> 00:51:53.978 breast cancers being more likely to
00:51:53.978 --> 00:51:56.081 demonstrate in breast recurrence, overtime,
00:51:56.081 --> 00:51:58.187 an overall age was an independent
00:51:58.187 --> 00:52:00.779 risk for local recurrence after breast
00:52:00.779 --> 00:52:03.239 conservation but remained acceptably low.
00:52:05.680 --> 00:52:07.108 These data were published
00:52:07.108 --> 00:52:08.893 by a colleague and friend,
00:52:08.900 --> 00:52:10.690 Carrie Anders, again in 2008,
00:52:10.690 --> 00:52:12.480 but this was a collaborative
00:52:12.480 --> 00:52:14.270 effort between Duke and UNC,
00:52:14.270 --> 00:52:16.286 where they looked at tissue samples
00:52:16.286 --> 00:52:18.210 in younger versus older patients.
00:52:18.210 --> 00:52:19.920 Defined in this study as
00:52:19.920 --> 00:52:20.889

86
less than 45 or 65 and older, 

they did find that younger 

women had lower rates of hormone 

receptor positive breast cancer. 

Higher rates of her two positive cancer 

presented with larger tumor sizes, 

and higher grades, 

again younger age was an 

independent risk factor for disease. 

And during my time at Boston, 

we pursued evaluation of younger 

patients and the predicted value 

of pathologic complete response on 

overall survival in this rare cohort. 

So we know that across our
breast cancer patients, regardless of age, having neoadjuvant chemo with a pathologic complete response correlate's with excellent survival and the data from the original neoadjuvant studies at the NSC, suggested that perhaps preoperative chemo was. Correlated with not only improved eligibility for breast conservation, but also improved overall survival, but it was not statistically
significant in those studies,

and so we wanted to get a better sense of in a contemporary cohort.

How did neoadjuvant chemo and pathologic response impact cancer outcomes in younger patients?

And you can see here women under 40 at diagnosis who received neoadjuvant chemo for stage two and three invasive cancers between 1998 and 2014. At Massachusetts General Hospital were evaluated. Overall there were only 170 young women in this analytic data set. About 30% received a path CR and this was more likely in Grade 3 disease. Her two positive and triple
negative breast cancers.

Age alone was not predicted for pathologic response, but when you look at a younger cohort, pathologic response, not surprisingly, was correlated with improved disease free and overall survival compared to women with residual disease. And this was based on tumor subtype with hormone receptor positive.

Her two negative past CR responders having the best survival followed by triple negative and her two positive past CR patients.
Moving on to decisions for breast cancer surgery in the US, we face young and older women with early stage breast cancer. We offer them a choice for decisions related to surgery. We have very good and long term and contemporary data, both clinical trials and observational studies suggesting that these outcomes are not different. When our young patients come talk to us, they meet the larger multi disciplinary team. This often includes surgeons, medical oncologists, and radiation oncologist.
plastic surgeons, genetic counselors and sometimes oncofertility specialists which I'll touch on briefly. But we discussed with them recovery time, risk of recurrence, Peace of Mind, side effects and complications need for future surveillance, appearance and how this really impacts their lives. And the international consensus guidelines from 2019 strongly recommended, and these were experts from across the globe. Really recommended that local
regional treatment in younger patients should not really differ from what we offer to older women. We should think strongly about breast conserving surgery as the first option whenever possible. I’m knowing that their survival overall is the same and that we should think as Doctor Lynch touched on. About uncle plastic repairs and reconstruction. An that false negative rates are worse outcomes related to central node biopsy use in this population should not be a concern, and I encourage anyone interested in
this population to read this article.

It touches on both local, regional systemic treatment guidelines and then recommendations for survivorship.

As mentioned, when we perform a mastectomy, we can often perform ***** sparing with wonderful options for reconstruction.

And there is some data coming out. This is from my colleague and friend Catherine Patches at the University of Chicago Northshore practice.

That in a prospective study of women undergoing breast cancer treatment, either breast conservation or mastectomy,
the quality of life does not differ based on surgical choice,
and so I think we can rest assured that even for our younger patients lumpectomy with radiation or mastectomy are safe options.
Moving on to pregnancy associated breast cancer again, even more rare than breast cancer in our younger patients. We know this can occur in women, typically under 30. This is during the Peripartum period or within the first year. It’s very rare that one in three cases per 10,000 live births.
We do find that the limited literature published on this topic suggests that larger locally advanced breast cancers. More likely, triple negative, an higher rate of death when diagnosis is in the peripartum period. Recommendations if you meet a woman with a breast mass who’s pregnant two evaluated on women, can undergo mammogram, a shielding and ultrasound. They should undergo a core needle biopsy of a mass, unless it’s concretely
radiographically benign.

Corredo biopsy is better than FNA for evaluation of these lesions.

When we think about a staging, in the cases where breast cancer exists,

chest xray, liver ultrasound labs and non contrast MRI.

Although we have had circumstances in which working with OBGYN team to discuss alternative staging evaluation is necessary,

many of these patients,

young young women,

pregnant or not,

should be considered for genetic counseling.

We know that pregnancy is not protective
00:58:40.336 --> 00:58:43.279 in these younger patients unfortunately.

00:58:43.280 --> 00:58:45.656 Although over your lifetime and the number of pregnancies and childbirth.

00:58:48.030 --> 00:58:50.240 Does provide some benefit against breast cancer risk in younger women?

00:58:50.240 --> 00:58:52.950 This is a high risk, relatively higher risk time.

00:58:55.180 --> 00:59:01.890 Women who are pregnant can also undergo mastectomy versus breast conservation, as long as the radiation occurs after delivery and chemotherapy has been proven to be safe in the 2nd and 3rd trimester.

00:59:13.512 --> 00:59:15.588 I wanted to talk about survivorship.
in this younger population. In my mind on this quote is really representative of what these younger patients go through.

Elizabeth McKinley was an associate Dean of Medicine at Case Western who was diagnosed with breast cancer at age 36, and she says after my last radiation treatment for breast cancer instead of joyous, I felt lonely, abandoned. Terrified, this was the rocky beginning of cancer survivorship for me. So again, many of these young women outside of their cancer treatment are not interfacing with the
health system on a regular basis, and so we have to be especially sensitive to issues that accompany cancer treatment. These can include amenorrhea and early menopause, osteoporosis, secondary malignancies, fertility is of upmost concern for many of these women. And then Lastly psychosocial and quality of life issues. There are obviously a side effects of all breast cancer treatment, including those related to surgery, chemotherapy, radiation, and a current therapy and targeted therapy.
Chemotherapy induced amenorrhea is age related. I apologize for my slides and therapy dependent. It is less common at younger ages, so are very young patients. In their 20s are more likely to regain menstrual cycles after treatment than women in their late 30s or 40s. We know that shorter duration of treatment is less likely to be associated with chemotherapy induced amenorrhea as well, and that there may be some protective benefit. Two cessation of menses.
And this is a really nice table that goes through the risk of chemotherapy induced amenorrhea. Based on the treatment that women receive with little data at this point known around newer monoclonal antibody therapy. Ann Partridge's group at Dana Farber did some survey work around these younger patients who were diagnosed with breast cancer and fertility. Infertility concerns was a concern for over half of these women. About a third reported that fertility impact their cancer treatment decisions.
and I think that’s critically important for our training teams to be highly aware of women worried about menopausal symptoms after treatment. And only about half believe that their concerns were adequately addressed. There are ASCO guidelines around fertility preservation, notably that it should not delay cancer treatment. The risk of recurrence with fertility preservation should be considered, but is likely very low. We’re learning an that early referral to specialist is critical and correlate’s with successive pregnancy.
Long term, there are several options for oncofertility, including oocyte cryopreservation, embryo cryopreservation, and an ovarian tissue preservation. Partnering with our reproductive endocrinologist will give our patients their best outcomes. The positive trial is a national study led by Doctor Partridge out of Dana Farber, and this really looks at whether women who have completed between 18 and 30 months of endocrine therapy can temporarily stop endocrine therapy.
01:02:50.211 --> 01:02:53.137 for pregnancy for up to two years.
NOTE Confidence: 0.85646087
01:02:53.140 --> 01:02:55.884 This is all in the context of our
NOTE Confidence: 0.85646087
01:02:55.884 --> 01:02:57.678 best available evidence suggesting
NOTE Confidence: 0.85646087
01:02:57.678 --> 01:03:00.253 that pregnancy after breast cancer
NOTE Confidence: 0.85646087
01:03:00.253 --> 01:03:03.160 does not increase a woman's risk
NOTE Confidence: 0.85646087
01:03:03.160 --> 01:03:04.876 of developing a recurrence.
NOTE Confidence: 0.85646087
01:03:04.880 --> 01:03:10.016 Psychosocial stress does impact our
NOTE Confidence: 0.85646087
01:03:08.090 --> 01:03:12.112 younger patients more significantly
NOTE Confidence: 0.85646087
01:03:10.020 --> 01:03:13.736 younger age predicts
NOTE Confidence: 0.85646087
01:03:13.736 --> 01:03:20.807 higher distress at one year that
NOTE Confidence: 0.85646087
01:03:16.400 --> 01:03:25.750 correlates with worse psychosocial distress.
NOTE Confidence: 0.85646087
01:03:25.750 --> 01:03:27.022 Our younger patients,
about 11% are denied health or life insurance after their breast cancer diagnosis and they have a higher risk of treatment related financial hardship and employment disruption. Up to 20% report some work related problems either needing to take time off, difficulties with promotion or advancement, or unemployment and dysfunction tends to start shortly after surgery. An exist for many women, at least to one year.
which is a topic near and dear to my heart,

we do know that our younger cancer survivors are at the highest risk of this.

With 1/3 reporting financial hardship,

40% reporting difficulty affording their deductibles with young,

non Medicare covered patients at greatest risk and again are younger patients

more likely to receive comprehensive treatment or multimodal therapy?

Also,

an independent risk factor.

There are lots of resources for our young patients and these are some of but not all,

and so as we learn more about these women,

we will continue to support them
both during treatment and beyond.
Thank you so much for having me
today be happy to take any questions.
Thank you Doctor Green up that was
absolutely fantastic and thank you
for all the speakers for really three
phenomenal presentations which really
generated a lot of questions both in
the question and answer in the chat
box and I’ll try to ask the panelists
for opinions on some of these.
One is question on margins specific
in the Uncle plastic setting.
Maybe that’s best start with Doctor
Lynch and her thoughts on how do you.
Either guarantee or do best to achieve clear margins and then if they’re not clear, what are the options for the patient and in your experience, right? So the the one of the benefits of plastic surgery when you kind of separate the skin from the breast parenchyma with a little wider exposure for partial mastectomy is with a wider exposures. There’s a thinking that you might have fewer positive margins, at least the margin rate is not worse, and that’s the data that we have so far. So you would like to have your positive margin rate for routine breast surgery to be as close to 10% as possible and so
making sure you have diligent marking of your tumor bed after you’ve removed the area where the cancer is important, not only for radiation but also for finding that again after you’ve done a tissue rearrangement. If you have to go back and clear your margin. When you’re doing a uncle plastic procedure to reduce the size of the breast, you can always plan the reduction of that tissue around your lumpectomy bed, and so you’ll remove your tissue. You’ll do your shave margins and then, if any more tissue needs to come out, that should also be oriented for the
pathologist to make sure that you're aware of all of the margins there again, routine use of shave margins will help reduce your risk of a positive margin. And if you’ve got to go back, you go back. And you try to go back as soon as possible when you still have saroma there before the the rotational flap is healed in place to make sure that you’re removing the tissue that you’ve carefully marked at your first operation.

But trying to get your positive margin rate to as close to or less than 10% is is important.

Thank you doctor Lynn shot doctor Berger.
margins and sparing mastectomy and should we consider a certain distance on pathology or an indoor image to consider it clear we should that be treated different than say margin in a patient undergoing lumpectomy. Yeah, I think that’s a great question. I mean, I think the conservative answer is, you know if there’s any pathology on imaging that’s within 2 centimeters of the areola complex. We do tend to, or. You know, I would argue we tend to avoid. However, you know, if you take a margin an it’s
negative at the time of your operation,

then you know I think.

Regardless of how close that cancer is,

the areola complex

we’d feel comfortable leaving

the rest of that tissue,

but I would defer to my more senior colleagues.

I think you know there’s a nice editorial written by Doctor Susie Coopey and Barbara Smith,

arguing that the is just another margin. I’ve historically.

Having done these operations for almost a decade,

that one type of patient I’ve become
increasingly cautious about offering sparing mastectomy to is women with large areas of DCIS. Yeah, anecdotally had one patient with a negative margin who recurred in a short time frame, and thankfully she had an insight to recurrence in her that was salvageable with a central resection. But I think that disease with the skip pattern should probably be taken seriously in terms of offering sparing mastectomy or to follow these women very closely in your own practice for.
any signs or symptoms of recurrence.
Yes.
And there's a question from Doctor Moran asking both. You know, Melanie Rachel Elizabeth. What are your thoughts on the recent buzz on going flat movement from the patients and the possibility of some perceived lack of support from surgeons around the country and around the world? I'll jump in on that one. I think you know that's all part of shared decision-making, and with you know kind of carefully
chosen words and to clearly represent that the first goal of our operation is to cure the cancer, and our second operation is to make sure the patient has an outcome that she can live with. Because when we do these operations, we change our patients bodies for the rest of their lives. And trying to be as respectful and as inclusive in that conversation as we can possibly be. And there’s patients. There’s their partner, their family.
There’s a lot of people who have opinions about what women should be doing. When they make choices about these operations, and I think we have as many patients who come into our offices where they have family members telling them that they should be having bilateral mastectomies is as we have. You know, other concerns that come forward. So it’s important that. We’re all as respectful and inclusive as we can be, and that we’re ready for these conversations that we’re ready to talk about how our bodies change as we age.
How an implant might feel when you're 40 and how it's going to feel really differently when you're 70? So that's all got to be addressed up front, so I have not had that experience where I had a patient felt. Like they I was talking to them too much about reconstruction without respecting that they wanted to be flat, but I have read a lot of that literature. I did read the book flat as well. Yeah, I agree. I think it's a really personal decision. I also remind women that it it can be an ongoing discussion.
so I have had women who could not manage the thought of embarking on reconstruction around diagnosis and they ended up a few years later wanting to meet with the reconstructive surgeon. So for many women there are options down the road. They might be limited compared to the options they have a diagnosis, but. The door should never feel entirely closed for them. I have a question from my colleague Doctor Fatty Ottawan from Turkey for Doctor Green up wanting to know what your thoughts are looming in Turkey. The average age of breast cancer is 119
much younger than the United States.

What are your thoughts on luminal breast cancer?

Zan, whether neoadjuvant chemotherapy potentially could be an option or other thoughts on this population.

Yeah, so we talk about this in the context of multidisciplinary discussion and I think.

In the US, at least, we’re heavy utilizers of genomic assays and the abdomen setting.

Occasionally we discuss using them in the neoadjuvant setting to help inform decisions around whether...
Chemotherapy should be used, and certainly thinking about the size of the breast cancer. The status of the axilla. And all of those the patients preference for breast conservation versus mastectomy all contribute to decisions for preoperative chemo. There is a question from our colleagues from China where the breast tissue density tends to be a lot higher on our thoughts on a screening ultrasound. And obviously here in Connecticut we can maybe give a little bit of a different perspective than maybe the rest of the United States.
After lunch you want it or burger or.

So I hope you’re screening ultrasound and I’m becoming more and more familiar with it because it’s used routinely here in Connecticut. I have recently moved from Ohio to Connecticut in Ohio.

We didn’t routinely do whole breast screening ultrasound and it seems to be a very very effective test.

We know it hasn’t. It picks up additional cancers at a rate of 8% more than mammography screening.

MRI for dense breasts picks up at a rate of 14%.
I think in Connecticut because of ultrasound is so routinely used and it’s a user dependent technology that their rates are actually much higher than 8% which is reported in the literature. So it can be a very effective adjunct to mammography for dense breasts and it’s user dependent. So the more you do, the better you get, and I think that’s why the rates here in Connecticut look better than the rest of the country. There was a question from a doctor Lustberg our incoming breast program director to touch base.
Doctor Lynch just because of your wide array of surgical options that you can provide patients that maybe some of us don’t have those techniques that you discuss. What are your thoughts on that?

It’s yeah, it’s. You know, we always worry about informed consent. Can we really explain to patients how this is going to look and feel to them after we’re done with our operation and we’ve, in my experience so far in using
Oncoplastic operations, well, an doctor Krishna Clef recently published an editorial in Annals of Surgical Oncology about how we’re using this technique too much for some patients, and we have to be really careful about how we apply this. But we need to be able to. Describe to patients exactly how we do the operation and how it might feel to them afterwards. One of the issues that we’re now beginning to really understand is how distressing it is for patients to experience fat necrosis. The more we separate the skin
from the breast, and then radiate that tissue, the more patients are likely to feel a mass in their breast after they’ve had treatment, and that is actually fat necrosis and not recurrent cancer. And to be able to prepare patients for that, the older the patient is with, the more fat replaced breast. We know that they are more likely to develop fat necrosis and we need to be able to have that conversation with patients, and so if and when that mask comes
01:16:03.404 --> 01:16:05.280 up that they're not as distressed by
NOTE Confidence: 0.7936137
01:16:05.280 --> 01:16:07.446 it and that they know that they
NOTE Confidence: 0.7936137
01:16:07.446 --> 01:16:09.526 can come in and we can evaluate it
NOTE Confidence: 0.7936137
01:16:09.526 --> 01:16:11.808 and help help help sort that out.
NOTE Confidence: 0.7936137
01:16:11.810 --> 01:16:13.622 But the shared decision making is
NOTE Confidence: 0.7936137
01:16:13.622 --> 01:16:16.073 a process and it can include the
NOTE Confidence: 0.7936137
01:16:16.073 --> 01:16:18.038 whole of the multidisciplinary team
NOTE Confidence: 0.7936137
01:16:18.038 --> 01:16:20.638 including the radiation oncologist as well.
NOTE Confidence: 0.7936137
01:16:20.640 --> 01:16:22.943 Because of the they can talk to
NOTE Confidence: 0.7936137
01:16:22.943 --> 01:16:25.257 patients so they understand fully what
NOTE Confidence: 0.7936137
01:16:25.257 --> 01:16:27.765 radiation might feel to the breast
NOTE Confidence: 0.7936137
01:16:27.765 --> 01:16:30.729 when they're they're done with treatment.
NOTE Confidence: 0.7936137
01:16:30.730 --> 01:16:31.678 But that’s it.
NOTE Confidence: 0.7936137
01:16:31.678 --> 01:16:32.940 That’s a, that’s a.
NOTE Confidence: 0.7936137
01:16:32.940 --> 01:16:34.830 That’s a whole conference in itself.
NOTE Confidence: 0.7936137
01:16:34.830 --> 01:16:35.143 Yeah,
well, we'll have the next session on that.
Doctor Berger or what are your thoughts on intra op margin assessments are or is that something that’s ready for prime time? Or you know something that’s still kind of in the research realm? And obviously Doctor Green up at lunch as well too? Yeah, I know I’m up at your previous institution. There’s been some looking at, looking at Inter operative you know, looking at Inter operative.
margin assessment and whether we can lower the chance of positive margins on the final pathology specimen. There’s been different feasibility trials. Looking at that, there’s been different even outcome trials. Looking at that, I’m not sure we’re quite there yet, just based upon the limited amount of data that we do have. But you know, definitely something in the future that might be a possibility to prevent, you know, return to the OR on some of these patients. Yeah, I think nationally
we’ve continued to have to balance the extra operating room time. The logistics around having a workforce of pathologists available to evaluate margin in real time and then the accuracy obviously of the data that’s received in the operating room, certainly from the technology side. There’s a lot of independent companies and. NIH funded study is in partnership with. Industry looking at real time Inter operative margin assessment and certainly breast is a great place to start, but I would argue it will be really wonderful for patients.
For example that have pancreas cancers or liver tumors where the return trip to the operating room carries a much higher morbidity.

There is a question from Professor Dong in China about a 65 year old with early stage breast cancer. For example, a very tiny tumor, less than a 0.5 millimeters and they undergo breast conservation. You know we have data on what you know women over 70 and maybe the ER positive setting on avoiding radiation. How about on a slightly younger patient you know, do we? Can we drop that cut off and you
know where do we go from there?

Yeah, so we have good data from the prime two study looking at patients over 65 and ER PR positive cancers and deescalation of radiation therapy.

But what I find really important too is you know asking the question can we deescalate hormone therapy so you know this principle of monotherapy, whether it is radiation or homeless hormone therapy I think is really important and that question is actually being asked right now in an ongoing trial because you know.

a lot of people consider radiation therapy
01:19:25.483 --> 01:19:28.097 is the thing we should deescalate because.
NOTE Confidence: 0.8390911
01:19:28.100 --> 01:19:29.955 Hormone therapy protects you for the five
NOTE Confidence: 0.8390911
01:19:29.955 --> 01:19:32.124 years in the contralateral breast, etc.
NOTE Confidence: 0.8390911
01:19:32.124 --> 01:19:34.476 But that does not come without its own
NOTE Confidence: 0.8390911
01:19:34.476 --> 01:19:36.810 side effects an it’s owned, you know,
NOTE Confidence: 0.8390911
01:19:36.810 --> 01:19:38.670 kind of pit bulls and downfalls.
NOTE Confidence: 0.8390911
01:19:38.670 --> 01:19:40.794 And so I think if we look at the
NOTE Confidence: 0.8390911
01:19:40.794 --> 01:19:42.720 local regional recurrence rates,
NOTE Confidence: 0.8390911
01:19:42.720 --> 01:19:44.140 which recently I actually just
NOTE Confidence: 0.8390911
01:19:44.140 --> 01:19:45.560 did there relatively similar with
NOTE Confidence: 0.8390911
01:19:45.606 --> 01:19:46.758 the monotherapy principle.
NOTE Confidence: 0.8390911
01:19:46.760 --> 01:19:48.804 As far as DCIS goes, you know,
NOTE Confidence: 0.8390911
01:19:48.804 --> 01:19:50.498 I think there are a lot of
NOTE Confidence: 0.8390911
01:19:50.498 --> 01:19:52.049 good predictive nomograms,
NOTE Confidence: 0.8390911
01:19:52.050 --> 01:19:54.262 and we know that age obviously lessens
NOTE Confidence: 0.8390911
01:19:54.262 --> 01:19:56.183 your chance of recurrence just based
upon the fact that a woman is older. And so yeah, again, going back to this whole principle of shared decision making, that if you have a an informed decision with your patient and try to predict or recognize their risk of recurrence, understanding that 50% of DCIS recurrences are invasive, then omitting both agile and treatments for DCIS. I don’t think it’s unreasonable based upon the risk that your patient is willing to us. You know, take.
01:20:33.140 -- 01:20:35.242 Maybe the last question from
NOTE Confidence: 0.851897
01:20:35.242 -- 01:20:37.750 Scott Posa for whoever wants to
NOTE Confidence: 0.851897
01:20:37.828 -- 01:20:41.078 try to tackle this one in terms of some of
NOTE Confidence: 0.851897
01:20:41.158 -- 01:20:44.362 the more complex reconstructions such as
NOTE Confidence: 0.851897
01:20:44.362 -- 01:20:47.362 pop reconstructions in terms of ambulation
NOTE Confidence: 0.851897
01:20:47.362 -- 01:20:49.517 and limitations associated with that.
NOTE Confidence: 0.7767332
01:20:58.020 -- 01:21:01.500 So with early post-op ambulation
NOTE Confidence: 0.7767332
01:21:01.500 -- 01:21:04.700 after a tissue transfer. Maybe
NOTE Confidence: 0.7701525
01:21:04.700 -- 01:21:07.136 with a more complex free tissue
NOTE Confidence: 0.7701525
01:21:07.136 -- 01:21:08.354 transfer type reconstructions?
NOTE Confidence: 0.86115104
01:21:10.310 -- 01:21:12.956 'cause you have to protect both the
NOTE Confidence: 0.86115104
01:21:12.956 -- 01:21:15.880 donor site then and the recipient site.
NOTE Confidence: 0.86115104
01:21:15.880 -- 01:21:17.870 And so with microvascular repairs,
NOTE Confidence: 0.86115104
01:21:17.870 -- 01:21:20.366 you know patients will typically be
NOTE Confidence: 0.86115104
01:21:20.366 -- 01:21:23.440 limited in mobility for three to five days,
NOTE Confidence: 0.86115104
01:21:23.440 -- 01:21:26.653 and so you know 24 hours to 48 hours
135
from bed to chair only for mobility. Usually a Foley catheter will be in place for that for a day or two days for those patients, or a bedside commode. Because of the need for the to protect the microvascular site. And so that can impact early mobility, and it’s certainly shoulder mobility and things. And then afterwards again, it’s, exercises after surgery to make sure to. Detect shoulder mobility with full range of motion, hopefully.
Within two weeks of the operation.

I said that was the last question.

Actually there’s one more,

and it’s all the way from Japan,

so I can’t let Doctor Sakai get go unanswered.

What are our thoughts on putting a clip for biopsy proven lymph nodes before neoadjuvant chemotherapy?

Many other national trials are looking at potentially downstaging an axillary disease after neoadjuvant chemotherapy have not required clip placement, and so.
Pending those results, I think. Most US institutions are localising. Lymph nodes that are involved with tumor with a clip. With the intention of marking the spot and for future resection of that involved. And node certainly that Abigail Coddles data from MD Anderson looking at targeted axillary dissection and the 1071 data from Judy Bui both include clip placement in the node for the purpose of retrieving the. They know that was most likely to be effective or have the highest tumor burden, but if the Alliance 11202.
trial shows otherwise,

NOTE Confidence: 0.75943375

clip placement may be a thing of the past.

NOTE Confidence: 0.8592542

So with that I would really like to

NOTE Confidence: 0.8592542

thank Doctor Berger, Doctor Lynch,

NOTE Confidence: 0.8592542

Doctor Green up for these three

NOTE Confidence: 0.8592542

fantastic presentations and you know

NOTE Confidence: 0.8592542

the thoughtfully answers we’ve been

NOTE Confidence: 0.8592542

able to provide to the audience,

NOTE Confidence: 0.8592542

and more importantly,

NOTE Confidence: 0.8592542

to the attendees from, you know,

NOTE Confidence: 0.8592542

Yale, Connecticut, around the

NOTE Confidence: 0.8592542

United States and around the world.

NOTE Confidence: 0.8592542

We really appreciate the time and the

NOTE Confidence: 0.8592542

you know to listen to us and we look

NOTE Confidence: 0.8592542

forward to seeing you in person one day,

NOTE Confidence: 0.8592542

and until then,
we will continue these series.

So thank you very much.