WEBVTT

NOTE duration:"01:05:52.2130000"

NOTE language:en-us

NOTE Confidence: 0.71013916

00:00:00.000 --> 00:00:04.998 OK, welcome to the second episode of

NOTE Confidence: 0.71013916

00:00:05.000 --> 00:00:10.840 our yearly after my lecture series.

NOTE Confidence: 0.71013916

00:00:10.840 --> 00:00:15.616 Today we are going to have

NOTE Confidence: 0.71013916

00:00:15.616 --> 00:00:17.608 our cheaper international.

NOTE Confidence: 0.71013916

00:00:17.610 --> 00:00:21.630 An ideology, namely.

NOTE Confidence: 0.71013916

00:00:21.630 --> 00:00:28.410 Doctor Madoff, David Madoff, David Madoff.

NOTE Confidence: 0.71013916

00:00:28.410 --> 00:00:31.315 Did his Bachelor degree and Emory University,

NOTE Confidence: 0.71013916

00:00:31.320 --> 00:00:34.848 and then the MD and University speech book

NOTE Confidence: 0.71013916

00:00:34.848 --> 00:00:37.980 from there went to SUNY for the residency?

NOTE Confidence: 0.71013916

00:00:37.980 --> 00:00:41.525 It was Othello, and then a faculty

NOTE Confidence: 0.71013916

00:00:41.525 --> 00:00:43.697 member at MD Anderson.

NOTE Confidence: 0.71013916

00:00:43.700 --> 00:00:47.046 From MDN, Nasoni moved to we Cornell

NOTE Confidence: 0.71013916

00:00:47.046 --> 00:00:49.420 Presbyterian in New York City,

NOTE Confidence: 0.71013916

00:00:49.420 --> 00:00:53.278 where he became the section chief

NOTE Confidence: 0.71013916

00:00:53.278 --> 00:00:55.850 of Interventional Radiology there

NOTE Confidence: 0.71013916

00:00:55.951 --> 00:00:59.119 and join him in July 2019 is now.

NOTE Confidence: 0.71013916

00:00:59.120 --> 00:01:00.545 Professional radiology and

NOTE Confidence: 0.71013916

00:01:00.545 --> 00:01:01.970 medical oncology section,

NOTE Confidence: 0.71013916

00:01:01.970 --> 00:01:04.195 chief of interventional radiology and

NOTE Confidence: 0.71013916

00:01:04.195 --> 00:01:07.523 vice chair for visas in the Department

NOTE Confidence: 0.71013916

00:01:07.523 --> 00:01:11.050 or radiology and biomedical imaging.

NOTE Confidence: 0.71013916

00:01:11.050 --> 00:01:13.506 David is a great aspect in liver tumor

NOTE Confidence: 0.71013916

00:01:13.506 --> 00:01:15.440 treatment without correctional treatment,

NOTE Confidence: 0.71013916

00:01:15.440 --> 00:01:18.368 and if you look at his CV and

NOTE Confidence: 0.71013916

00:01:18.368 --> 00:01:21.710 his publication, he has been.

NOTE Confidence: 0.71013916

00:01:21.710 --> 00:01:26.180 One of the forces behind the

NOTE Confidence: 0.71013916

00:01:26.180 --> 00:01:28.415 great developments that.

NOTE Confidence: 0.71013916

00:01:28.420 --> 00:01:31.015 I've been brought by interventional

NOTE Confidence: 0.71013916

00:01:31.015 --> 00:01:34.730 radiology in the treatment of liver cancer,

NOTE Confidence: 0.71013916

00:01:34.730 --> 00:01:38.118 and he in particular is very interested

NOTE Confidence: 0.71013916

00:01:38.118 --> 00:01:43.207 in all the method to which we can increase

NOTE Confidence: 0.71013916

00:01:43.207 --> 00:01:46.320 liver regeneration before and after

NOTE Confidence: 0.71013916

00:01:46.320 --> 00:01:50.220 surgery on Echologics surgery to deliver.

NOTE Confidence: 0.71013916

00:01:50.220 --> 00:01:52.580 David.

NOTE Confidence: 0.71013916

00:01:52.580 --> 00:01:56.492 Is one of the members of our team

NOTE Confidence: 0.71013916

00:01:56.492 --> 00:02:01.150 are as as highlighted in this slide.

NOTE Confidence: 0.71013916

00:02:01.150 --> 00:02:03.430 The treatment of Reperta

NOTE Confidence: 0.71013916

00:02:03.430 --> 00:02:05.710 circus numbers very complex.

NOTE Confidence: 0.71013916

00:02:05.710 --> 00:02:08.570 We have Transformers, action ablation,

NOTE Confidence: 0.71013916

00:02:08.570 --> 00:02:10.544 radiation, systemic therapy.

NOTE Confidence: 0.71013916

00:02:10.544 --> 00:02:15.150 We need to mind also the liver

NOTE Confidence: 0.71013916

00:02:15.268 --> 00:02:19.508 disease that is present in all if not.

NOTE Confidence: 0.71013916

00:02:19.510 --> 00:02:21.118 Most if not all,

NOTE Confidence: 0.71013916

00:02:21.118 --> 00:02:22.726 the patient liver cancer,

NOTE Confidence: 0.71013916

00:02:22.730 --> 00:02:25.355 and so it really takes a village

NOTE Confidence: 0.71013916

00:02:25.355 --> 00:02:28.183 to be able to manage and treat this

NOTE Confidence: 0.71013916

00:02:28.183 --> 00:02:30.589 patient and it is very important

NOTE Confidence: 0.71013916

00:02:30.589 --> 00:02:32.829 concept that this patient should

NOTE Confidence: 0.71013916

00:02:32.829 --> 00:02:35.224 be treated in referral centers.

NOTE Confidence: 0.71013916

00:02:35.230 --> 00:02:38.446 Yeah, you can see some of our members.

NOTE Confidence: 0.71013916

00:02:38.450 --> 00:02:41.285 Actually there should be 2 times than

NOTE Confidence: 0.71013916

00:02:41.285 --> 00:02:43.690 the pictures that are shown here,

NOTE Confidence: 0.71013916

00:02:43.690 --> 00:02:49.519 but I don't want to take more time to our.

NOTE Confidence: 0.71013916

00:02:49.520 --> 00:02:50.663 Lecture tonight then,

NOTE Confidence: 0.71013916

00:02:50.663 --> 00:02:53.330 so I'll stop here and I like

NOTE Confidence: 0.71013916

00:02:53.415 --> 00:02:54.920 the baby in the beginning.

NOTE Confidence: 0.757946888888889

00:03:02.040 --> 00:03:06.360 Jay Silva I assume you can see my screen.

NOTE Confidence: 0.757946888888889

00:03:06.360 --> 00:03:09.900 Yep. OK, so thanks Mario for

NOTE Confidence: 0.757946888888889

00:03:09.900 --> 00:03:11.836 that really nice introduction.

NOTE Confidence: 0.757946888888889

00:03:11.840 --> 00:03:15.400 What we're going to talk about today is

NOTE Confidence: 0.757946888888889

00:03:15.400 --> 00:03:18.609 local regional therapies for liver tumors.

NOTE Confidence: 0.757946888888889

00:03:18.610 --> 00:03:22.426 A 2021 update. What I wanted to do

NOTE Confidence: 0.757946888888889

00:03:22.426 --> 00:03:25.875 is really go through a whirlwind tour

NOTE Confidence: 0.757946888888889

00:03:25.875 --> 00:03:30.428 of what IR or IO can actually offer.

NOTE Confidence: 0.757946888888889

00:03:30.430 --> 00:03:33.502 And not necessarily bore a lot of the

NOTE Confidence: 0.757946888888889

00:03:33.502 --> 00:03:36.605 audience with a lot of really hardcore data,

NOTE Confidence: 0.757946888888889

00:03:36.610 --> 00:03:39.178 which I definitely have, but I think to

NOTE Confidence: 0.757946888888889

00:03:39.178 --> 00:03:42.007 make it more interesting and palatable,

NOTE Confidence: 0.757946888888889

00:03:42.010 --> 00:03:44.509 I think that we're going to show

NOTE Confidence: 0.757946888888889

00:03:44.509 --> 00:03:47.408 a lot of cases and make this.

NOTE Confidence: 0.757946888888889

00:03:47.410 --> 00:03:50.250 I think, quite interesting.

NOTE Confidence: 0.757946888888889

00:03:50.250 --> 00:03:52.690 So these are my disclosures.

NOTE Confidence: 0.757946888888889

00:03:52.690 --> 00:03:55.120 Some of which I'm going to

NOTE Confidence: 0.757946888888889

00:03:55.120 --> 00:03:57.566 be speaking about today. So.

NOTE Confidence: 0.757946888888889

00:03:57.566 --> 00:04:00.870 As you all know.

NOTE Confidence: 0.757946888888889

00:04:00.870 --> 00:04:02.998 Interventional radiology is involved

NOTE Confidence: 0.757946888888889

00:04:02.998 --> 00:04:06.246 in numerous types of tumors, right?

NOTE Confidence: 0.757946888888889

00:04:06.246 --> 00:04:09.762 We treat both primary liver cancer

NOTE Confidence: 0.757946888888889

00:04:09.762 --> 00:04:12.565 and metastatic liver cancer for

NOTE Confidence: 0.757946888888889

00:04:12.565 --> 00:04:15.403 the purpose of this talk today

NOTE Confidence: 0.757946888888889

00:04:15.403 --> 00:04:18.428 to focus primarily on each CC,

NOTE Confidence: 0.757946888888889

00:04:18.430 --> 00:04:21.075 with the understanding that a

NOTE Confidence: 0.757946888888889

00:04:21.075 --> 00:04:24.458 lot of the local local regional

NOTE Confidence: 0.757946888888889

00:04:24.458 --> 00:04:27.598 therapies that we can offer.

NOTE Confidence: 0.757946888888889

00:04:27.600 --> 00:04:30.672 Actually can be translated

NOTE Confidence: 0.757946888888889

00:04:30.672 --> 00:04:33.744 into other disease types.

NOTE Confidence: 0.757946888888889

00:04:33.750 --> 00:04:36.190 So when talking about the goals of therapy,

NOTE Confidence: 0.757946888888889

00:04:36.190 --> 00:04:37.626 there are really 3.

NOTE Confidence: 0.757946888888889

00:04:37.626 --> 00:04:40.295 There is what you would call curative

NOTE Confidence: 0.757946888888889

00:04:40.295 --> 00:04:43.354 therapy and that could be, you know,

NOTE Confidence: 0.757946888888889

00:04:43.354 --> 00:04:44.665 transplantation resection and

NOTE Confidence: 0.757946888888889

00:04:44.665 --> 00:04:46.850 ablation for early stage disease.

NOTE Confidence: 0.757946888888889

00:04:46.850 --> 00:04:49.618 We also I guess you briefly mentioned my

NOTE Confidence: 0.757946888888889

00:04:49.618 --> 00:04:52.630 area of interest in liver regeneration.

NOTE Confidence: 0.757946888888889

00:04:52.630 --> 00:04:55.108 We can convert patients who are

NOTE Confidence: 0.757946888888889

00:04:55.108 --> 00:04:56.347 unresectable to resectable,

NOTE Confidence: 0.757946888888889

00:04:56.350 --> 00:04:59.646 and that can typically be done by portal,

NOTE Confidence: 0.757946888888889

00:04:59.650 --> 00:05:01.302 vein, embolization, radiation, lobectomy,

NOTE Confidence: 0.757946888888889

00:05:01.302 --> 00:05:02.954 and transarterial emblow therapy,

NOTE Confidence: 0.757946888888889

00:05:02.960 --> 00:05:05.020 which we'll get into later.

NOTE Confidence: 0.757946888888889

00:05:05.020 --> 00:05:07.540 And for those patients that are

NOTE Confidence: 0.757946888888889

00:05:07.540 --> 00:05:09.570 of intermediate and advanced age,

NOTE Confidence: 0.757946888888889

00:05:09.570 --> 00:05:12.454 we really can offer what's called palliation.

NOTE Confidence: 0.757946888888889

00:05:12.460 --> 00:05:14.148 Which is, you know,

NOTE Confidence: 0.757946888888889

00:05:14.148 --> 00:05:15.836 can be transarterial embolization

NOTE Confidence: 0.757946888888889

00:05:15.836 --> 00:05:17.390 and or ablation.

NOTE Confidence: 0.757946888888889

00:05:17.390 --> 00:05:19.721 So all of the different types of

NOTE Confidence: 0.757946888888889

00:05:19.721 --> 00:05:21.719 therapies that we offer really

NOTE Confidence: 0.757946888888889

00:05:21.719 --> 00:05:24.049 depends on patients tumor Histology,

NOTE Confidence: 0.757946888888889

00:05:24.050 --> 00:05:26.402 the number and location of the

NOTE Confidence: 0.757946888888889

00:05:26.402 --> 00:05:27.970 tumors within the liver,

NOTE Confidence: 0.757946888888889

00:05:27.970 --> 00:05:29.930 the extent of the underlying

NOTE Confidence: 0.757946888888889

00:05:29.930 --> 00:05:31.890 liver disease and of course,

NOTE Confidence: 0.757946888888889

00:05:31.890 --> 00:05:34.715 the presence or absence of

NOTE Confidence: 0.757946888888889

00:05:34.715 --> 00:05:35.845 extrahepatic disease.

NOTE Confidence: 0.757946888888889

00:05:35.850 --> 00:05:38.178 Now what I want to do first was

NOTE Confidence: 0.757946888888889

00:05:38.178 --> 00:05:40.950 getting to the whole idea of defining

NOTE Confidence: 0.757946888888889

00:05:40.950 --> 00:05:43.065 the different types of procedures.

NOTE Confidence: 0.757946888888889

00:05:43.070 --> 00:05:45.958 It turns out that a lot of practitioners,

NOTE Confidence: 0.757946888888889

00:05:45.960 --> 00:05:48.417 yet a lot of the time you get a

NOTE Confidence: 0.757946888888889

00:05:48.417 --> 00:05:50.528 lot of the types of procedures

NOTE Confidence: 0.757946888888889

00:05:50.528 --> 00:05:53.540 that we do kind of misinterpreted,

NOTE Confidence: 0.757946888888889

00:05:53.540 --> 00:05:55.706 meaning that the terminology is often

NOTE Confidence: 0.757946888888889

00:05:55.706 --> 00:05:56.789 used entertained interchangeably,

NOTE Confidence: 0.757946888888889

00:05:56.790 --> 00:06:00.102 and when you go to tumor boards or you

NOTE Confidence: 0.757946888888889

00:06:00.102 --> 00:06:02.929 listen to or you read your image Ng,

NOTE Confidence: 0.757946888888889

00:06:02.930 --> 00:06:06.360 even your image, even your image Ng.

NOTE Confidence: 0.757946888888889

00:06:06.360 --> 00:06:08.400 Reports.

NOTE Confidence: 0.757946888888889

00:06:08.400 --> 00:06:09.300 Taste, for example,

NOTE Confidence: 0.757946888888889

00:06:09.300 --> 00:06:11.400 is sometimes used in the place of

NOTE Confidence: 0.757946888888889

00:06:11.464 --> 00:06:13.448 taec or transarterial embolization,

NOTE Confidence: 0.757946888888889

00:06:13.450 --> 00:06:14.164 you know.

NOTE Confidence: 0.757946888888889

00:06:14.164 --> 00:06:15.949 See, taste is sometimes used

NOTE Confidence: 0.757946888888889

00:06:15.949 --> 00:06:18.148 for debt ace and vice versa.

NOTE Confidence: 0.757946888888889

00:06:18.150 --> 00:06:20.280 When we talk about microwave ablation

NOTE Confidence: 0.757946888888889

00:06:20.280 --> 00:06:22.479 as well as you'll hear later,

NOTE Confidence: 0.757946888888889

00:06:22.480 --> 00:06:24.532 it's always called RFA,

NOTE Confidence: 0.757946888888889

00:06:24.532 --> 00:06:27.097 even if it's not really.

NOTE Confidence: 0.757946888888889

00:06:27.100 --> 00:06:28.640 Medium embolization is sometimes

NOTE Confidence: 0.757946888888889

00:06:28.640 --> 00:06:30.565 referred to as radiation therapy,

NOTE Confidence: 0.757946888888889

00:06:30.570 --> 00:06:32.880 and in addition you know when

NOTE Confidence: 0.757946888888889

00:06:32.880 --> 00:06:34.420 I'm reading these reports.

NOTE Confidence: 0.757946888888889

00:06:34.420 --> 00:06:36.891 There's often times where will do an

NOTE Confidence: 0.757946888888889

00:06:36.891 --> 00:06:38.650 embolization where we're discussing,

NOTE Confidence: 0.757946888888889

00:06:38.650 --> 00:06:39.422 you know,

NOTE Confidence: 0.757946888888889

00:06:39.422 --> 00:06:40.580 an ablation cavity,

NOTE Confidence: 0.757946888888889

00:06:40.580 --> 00:06:42.686 and this really isn't the case

NOTE Confidence: 0.757946888888889

00:06:42.686 --> 00:06:44.090 and the reason why

NOTE Confidence: 0.8533817

00:06:44.167 --> 00:06:47.151 I'm saying this and the reason why it's

NOTE Confidence: 0.8533817

00:06:47.151 --> 00:06:50.049 so important is that it really has

NOTE Confidence: 0.8533817

00:06:50.049 --> 00:06:52.129 major implications for patient care.

NOTE Confidence: 0.8533817

00:06:52.130 --> 00:06:54.050 Medical record keeping and billing,

NOTE Confidence: 0.8533817

00:06:54.050 --> 00:06:58.490 so I see a lot of times where a patient may.

NOTE Confidence: 0.8533817

00:06:58.490 --> 00:07:01.496 Get a treatment for an image in finding and

NOTE Confidence: 0.8533817

00:07:01.496 --> 00:07:04.446 in fact it may actually not be necessary

NOTE Confidence: 0.8533817

00:07:04.446 --> 00:07:07.788 and I'll get into an example of that later.

NOTE Confidence: 0.8533817

00:07:07.790 --> 00:07:11.122 Of course, before we can even talk

NOTE Confidence: 0.8533817

00:07:11.122 --> 00:07:14.465 about treatment, I want to stress the

NOTE Confidence: 0.8533817

00:07:14.465 --> 00:07:16.373 importance of percutaneous biopsy.

NOTE Confidence: 0.8533817

00:07:16.380 --> 00:07:18.795 OK now, interventional radiologists often

NOTE Confidence: 0.8533817

00:07:18.795 --> 00:07:23.047 think of this as kind of a mundane procedure.

NOTE Confidence: 0.8533817

00:07:23.050 --> 00:07:26.190 It's kind of basic and.

NOTE Confidence: 0.8533817

00:07:26.190 --> 00:07:28.200 In my opinion, Proteinous biopsy is

NOTE Confidence: 0.8533817

00:07:28.200 --> 00:07:30.378 probably one of the most important

NOTE Confidence: 0.8533817

00:07:30.378 --> 00:07:32.706 and impactful procedures that we do.

NOTE Confidence: 0.8533817

00:07:32.710 --> 00:07:35.599 This is a case that I want to show

NOTE Confidence: 0.8533817

00:07:35.599 --> 00:07:38.766 which is a 64 year old female with

NOTE Confidence: 0.8533817

00:07:38.766 --> 00:07:41.092 squamous cell cancer of the tongue

NOTE Confidence: 0.8533817

00:07:41.092 --> 00:07:43.886 base who has a pet CT positive avid

NOTE Confidence: 0.8533817

00:07:43.886 --> 00:07:46.414 lesion in the left lobe of the liver

NOTE Confidence: 0.8533817

00:07:46.414 --> 00:07:49.203 and of course because of the location

NOTE Confidence: 0.8533817

00:07:49.203 --> 00:07:50.803 because of the disease,

NOTE Confidence: 0.8533817

00:07:50.810 --> 00:07:53.698 it's very important to get a diagnosis now.

NOTE Confidence: 0.8533817

00:07:53.700 --> 00:07:56.318 We would all agree that this lesion.

NOTE Confidence: 0.8533817

00:07:56.320 --> 00:07:58.558 It's probably very difficult to biopsy.

NOTE Confidence: 0.8533817

00:07:58.560 --> 00:08:00.768 OK, it's at the very edge of the

NOTE Confidence: 0.8533817

00:08:00.768 --> 00:08:02.896 liver is literally right under

NOTE Confidence: 0.8533817

00:08:02.896 --> 00:08:04.900 the pericardium and diaphragm,

NOTE Confidence: 0.8533817

00:08:04.900 --> 00:08:07.138 and there really is no correlation

NOTE Confidence: 0.8533817

00:08:07.138 --> 00:08:08.257 with imaging findings.

NOTE Confidence: 0.8533817

00:08:08.260 --> 00:08:09.298 But you know,

NOTE Confidence: 0.8533817

00:08:09.298 --> 00:08:12.217 we we were able to do the biopsy

NOTE Confidence: 0.8533817

00:08:12.217 --> 00:08:13.849 as you see here,

NOTE Confidence: 0.8533817

00:08:13.850 --> 00:08:17.207 and this is actually the bottom of the heart.

NOTE Confidence: 0.8533817

00:08:17.210 --> 00:08:17.548 OK,

NOTE Confidence: 0.8533817

00:08:17.548 --> 00:08:20.252 and in fact the patient did not have

NOTE Confidence: 0.8533817

00:08:20.252 --> 00:08:22.264 squamous cell carcinoma but actually

NOTE Confidence: 0.8533817

00:08:22.264 --> 00:08:24.664 had low grade B cell lymphoma,

NOTE Confidence: 0.8533817

00:08:24.670 --> 00:08:26.660 which completely changed the patients.

NOTE Confidence: 0.8533817

00:08:26.660 --> 00:08:27.093 Management.

NOTE Confidence: 0.8533817

00:08:27.093 --> 00:08:31.540 So the reason why I bring this up is that.

NOTE Confidence: 0.8533817

00:08:31.540 --> 00:08:33.310 These procedures that you see

NOTE Confidence: 0.8533817

00:08:33.310 --> 00:08:35.434 here can be very, very difficult.

NOTE Confidence: 0.8533817

00:08:35.434 --> 00:08:37.194 OK from a technical perspective,

NOTE Confidence: 0.8533817

00:08:37.200 --> 00:08:39.880 but I think that it would be very

NOTE Confidence: 0.8533817

00:08:39.880 --> 00:08:41.818 important for the referring physicians

NOTE Confidence: 0.8533817

00:08:41.818 --> 00:08:45.623 to actually reach out to one of us in IR

NOTE Confidence: 0.8533817

00:08:45.623 --> 00:08:48.174 to see if it's actually feasible or not.

NOTE Confidence: 0.8533817

00:08:48.174 --> 00:08:49.590 And in this case,

NOTE Confidence: 0.8533817

00:08:49.590 --> 00:08:52.978 I think it really helped the patients.

NOTE Confidence: 0.8533817

00:08:52.980 --> 00:08:56.390 No diagnosis and therefore prognosis.

NOTE Confidence: 0.8533817

00:08:56.390 --> 00:09:00.179 So just to talk about HCC a little bit,

NOTE Confidence: 0.8533817

00:09:00.180 --> 00:09:02.628 we're all aware of the Barcelona

NOTE Confidence: 0.8533817

00:09:02.628 --> 00:09:04.810 Clinic liver Cancer Staging system.

NOTE Confidence: 0.8533817

00:09:04.810 --> 00:09:05.923 As you know,

NOTE Confidence: 0.8533817

00:09:05.923 --> 00:09:08.520 we see patients all the range from

NOTE Confidence: 0.8533817

00:09:08.599 --> 00:09:11.413 very early stage or stage zero to

NOTE Confidence: 0.8533817

00:09:11.413 --> 00:09:14.596 terminal stage or stage D and the

NOTE Confidence: 0.8533817

00:09:14.596 --> 00:09:16.961 treatments obviously fit into where

NOTE Confidence: 0.8533817

00:09:16.961 --> 00:09:19.550 patients fall on this staging system.

NOTE Confidence: 0.8533817

00:09:19.550 --> 00:09:21.535 So typically patients that are

NOTE Confidence: 0.8533817

00:09:21.535 --> 00:09:24.044 very early stage or early stage

NOTE Confidence: 0.8533817

00:09:24.044 --> 00:09:25.856 have very limited disease,

NOTE Confidence: 0.8533817

00:09:25.860 --> 00:09:27.312 are often considered.

NOTE Confidence: 0.8533817

00:09:27.312 --> 00:09:29.732 Or ablation resection or transplant

NOTE Confidence: 0.8533817

00:09:29.732 --> 00:09:32.746 and depending on where they fall into this,

NOTE Confidence: 0.8533817

00:09:32.750 --> 00:09:36.174 that will determine the outcome of what kind

NOTE Confidence: 0.8533817

00:09:36.174 --> 00:09:39.108 of procedures that you would actually do.

NOTE Confidence: 0.8533817

00:09:39.110 --> 00:09:41.420 Intermediate stage is what we typically

NOTE Confidence: 0.8533817

00:09:41.420 --> 00:09:44.199 do for local for regional therapy,

NOTE Confidence: 0.8533817

00:09:44.200 --> 00:09:45.469 or maybe chemoembolization

NOTE Confidence: 0.8533817

00:09:45.469 --> 00:09:46.738 or radio embolization,

NOTE Confidence: 0.8533817

00:09:46.740 --> 00:09:49.812 which will get into and then systemic therapy

NOTE Confidence: 0.8533817

00:09:49.812 --> 00:09:52.677 and basic supportive care are released.

NOTE Confidence: 0.8533817

00:09:52.680 --> 00:09:55.452 It reserved for the more advanced

NOTE Confidence: 0.8533817

00:09:55.452 --> 00:09:58.667 age is the reason why I put the.

NOTE Confidence: 0.8533817

00:09:58.670 --> 00:10:00.558 Question mark for survival.

NOTE Confidence: 0.8533817

00:10:00.558 --> 00:10:04.289 Is that we go through the gamut of.

NOTE Confidence: 0.8533817

00:10:04.290 --> 00:10:06.130 Procedures that we can offer

NOTE Confidence: 0.8533817

00:10:06.130 --> 00:10:07.970 and then at the end

NOTE Confidence: 0.81874716

00:10:08.049 --> 00:10:11.316 of the talk, we're actually going to fill in

NOTE Confidence: 0.81874716

00:10:11.316 --> 00:10:14.009 where the survival actually is at this time.

NOTE Confidence: 0.81874716

00:10:14.010 --> 00:10:15.735 So there are multiple treatment

NOTE Confidence: 0.81874716

00:10:15.735 --> 00:10:17.970 options for Liberty Mears for surgery.

NOTE Confidence: 0.81874716

00:10:17.970 --> 00:10:19.690 We obviously have transplant or

NOTE Confidence: 0.81874716

00:10:19.690 --> 00:10:22.222 hepat ectomy and we if the patient

NOTE Confidence: 0.81874716

00:10:22.222 --> 00:10:24.087 has two small liver remnants,

NOTE Confidence: 0.81874716

00:10:24.090 --> 00:10:26.673 we can optimize the future liver remnant

NOTE Confidence: 0.81874716

00:10:26.673 --> 00:10:29.486 or FLR with a PV or something else.

NOTE Confidence: 0.81874716

00:10:29.490 --> 00:10:31.345 Portal animalization we can talk

NOTE Confidence: 0.81874716

00:10:31.345 --> 00:10:33.995 about a blade of techniques which are

NOTE Confidence: 0.81874716

00:10:33.995 --> 00:10:36.173 divided into thermal and non thermal.

NOTE Confidence: 0.81874716

00:10:36.180 --> 00:10:38.208 And for those that are thermal,

NOTE Confidence: 0.81874716

00:10:38.210 --> 00:10:40.706 we can look at those that are heat

NOTE Confidence: 0.81874716

00:10:40.706 --> 00:10:43.299 based in those that are cold based.

NOTE Confidence: 0.81874716

00:10:43.300 --> 00:10:45.701 And then there's a whole host of

NOTE Confidence: 0.81874716

00:10:45.701 --> 00:10:47.369 transarterial therapies we can offer,

NOTE Confidence: 0.81874716

00:10:47.370 --> 00:10:48.046 including chemo,

NOTE Confidence: 0.81874716

00:10:48.046 --> 00:10:48.722 infusion embolization,

NOTE Confidence: 0.81874716

00:10:48.722 --> 00:10:49.060 chemoembolization,

NOTE Confidence: 0.81874716

00:10:49.060 --> 00:10:52.030 as well as radio embolization.

NOTE Confidence: 0.81874716

00:10:52.030 --> 00:10:55.120 So just to bring up local

NOTE Confidence: 0.81874716

00:10:55.120 --> 00:10:56.665 oblated therapies first.

NOTE Confidence: 0.81874716

00:10:56.670 --> 00:11:00.394 The goal here is to percutaneously eradicate

NOTE Confidence: 0.81874716

00:11:00.394 --> 00:11:03.549 all viable malignant cells while sparing

NOTE Confidence: 0.81874716

00:11:03.549 --> 00:11:06.986 as much normal liver tissue as possible.

NOTE Confidence: 0.81874716

00:11:06.990 --> 00:11:09.570 We can treat tumors with

NOTE Confidence: 0.81874716

00:11:09.570 --> 00:11:11.634 unfavorable locations or patterns,

NOTE Confidence: 0.81874716

00:11:11.640 --> 00:11:14.220 patterns of distribution for resection,

NOTE Confidence: 0.81874716

00:11:14.220 --> 00:11:17.178 or patients that have multiple comorbidities

NOTE Confidence: 0.81874716

00:11:17.178 --> 00:11:19.890 that probably cannot tolerate resection,

NOTE Confidence: 0.81874716

00:11:19.890 --> 00:11:22.600 but maybe have resectable disease.

NOTE Confidence: 0.81874716

00:11:22.600 --> 00:11:24.820 It's these are most often used

NOTE Confidence: 0.81874716

00:11:24.820 --> 00:11:27.230 in patients that have what we

NOTE Confidence: 0.81874716

00:11:27.230 --> 00:11:28.938 consider low volume disease.

NOTE Confidence: 0.81874716

00:11:28.940 --> 00:11:31.226 It can be used for debulking

NOTE Confidence: 0.81874716

00:11:31.226 --> 00:11:33.290 an nowadays in recent years.

NOTE Confidence: 0.81874716

00:11:33.290 --> 00:11:36.008 I guess we can also use it to incite

NOTE Confidence: 0.81874716

00:11:36.008 --> 00:11:38.438 antigen stimulation for immunotherapy,

NOTE Confidence: 0.81874716

00:11:38.440 --> 00:11:40.415 and these are typically done

NOTE Confidence: 0.81874716

00:11:40.415 --> 00:11:41.995 as outpatient and repeatable.

NOTE Confidence: 0.81874716

00:11:42.000 --> 00:11:45.141 So the way we can do tumor treatment with

NOTE Confidence: 0.81874716

00:11:45.141 --> 00:11:47.939 local oblated therapies is by cooking,

NOTE Confidence: 0.81874716

00:11:47.940 --> 00:11:50.316 and that's what we would consider

NOTE Confidence: 0.81874716

00:11:50.316 --> 00:11:51.108 radiofrequency ablation.

NOTE Confidence: 0.81874716

00:11:51.110 --> 00:11:52.762 We can boil them.

NOTE Confidence: 0.81874716

00:11:52.762 --> 00:11:54.827 Which would be microwave ablation?

NOTE Confidence: 0.81874716

00:11:54.830 --> 00:11:56.162 We can freeze them,

NOTE Confidence: 0.81874716

00:11:56.162 --> 00:11:58.160 which can obviously be cryo ablation

NOTE Confidence: 0.81874716

00:11:58.220 --> 00:12:00.038 or we can electrocute them and

NOTE Confidence: 0.81874716

00:12:00.038 --> 00:12:01.687 that would be called irreversible

NOTE Confidence: 0.81874716

00:12:01.687 --> 00:12:03.931 electroporation and will go into a

NOTE Confidence: 0.81874716

00:12:03.931 --> 00:12:08.068 little bit more detail in a second.

NOTE Confidence: 0.81874716

00:12:08.070 --> 00:12:11.574 So this is a case of radiofrequency ablation.

NOTE Confidence: 0.81874716

00:12:11.580 --> 00:12:14.868 This is a 61 year old female with

NOTE Confidence: 0.81874716

00:12:14.868 --> 00:12:17.161 colorectal cancer and an isolated

NOTE Confidence: 0.81874716

00:12:17.161 --> 00:12:19.476 metastatic tumor in segment 6.

NOTE Confidence: 0.81874716

00:12:19.480 --> 00:12:22.560 Here we see a 2.2 centimeter tumor.

NOTE Confidence: 0.81874716

00:12:22.560 --> 00:12:24.750 Here there is an axle,

NOTE Confidence: 0.81874716

00:12:24.750 --> 00:12:27.390 the avid lesion in segment six,

NOTE Confidence: 0.81874716

00:12:27.390 --> 00:12:30.018 we place the needle proteins ablation,

NOTE Confidence: 0.81874716

00:12:30.020 --> 00:12:35.079 and here is one year. Follow up OK.

NOTE Confidence: 0.81874716

00:12:35.080 --> 00:12:37.210 Each major frequency ablation works is

NOTE Confidence: 0.81874716

00:12:37.210 --> 00:12:39.095 that you have oscillating electrical

NOTE Confidence: 0.81874716

00:12:39.095 --> 00:12:41.130 currents via electrodes to tumor,

NOTE Confidence: 0.81874716

00:12:41.130 --> 00:12:43.015 which results in a resistive

NOTE Confidence: 0.81874716

00:12:43.015 --> 00:12:44.523 heating and tissue hyperthermia.

NOTE Confidence: 0.81874716

00:12:44.530 --> 00:12:46.415 The tissue nearest the electrode

NOTE Confidence: 0.81874716

00:12:46.415 --> 00:12:47.923 is heated most effectively,

NOTE Confidence: 0.81874716

00:12:47.930 --> 00:12:50.254 and the side of toxicity of course

NOTE Confidence: 0.81874716

00:12:50.254 --> 00:12:52.470 depends on the tissue impedance.

NOTE Confidence: 0.81874716

00:12:52.470 --> 00:12:54.689 Now one of the reasons why I

NOTE Confidence: 0.81874716

00:12:54.689 --> 00:12:57.293 bring this up in the setting of

NOTE Confidence: 0.81874716

00:12:57.293 --> 00:12:59.651 colorectal cancer is with the next

NOTE Confidence: 0.81874716

00:12:59.729 --> 00:13:02.297 therapy that I'm going to discuss.

NOTE Confidence: 0.81874716

00:13:02.300 --> 00:13:03.608 Radiofrequency ablation is

NOTE Confidence: 0.81874716

00:13:03.608 --> 00:13:05.788 becoming less and less performed.

NOTE Confidence: 0.81874716

00:13:05.790 --> 00:13:07.089 And in fact,

NOTE Confidence: 0.81874716

00:13:07.089 --> 00:13:09.254 I haven't performed a radiofrequency

NOTE Confidence: 0.81874716

00:13:09.254 --> 00:13:11.747 ablation since my days at MD Anderson,

NOTE Confidence: 0.81874716

00:13:11.750 --> 00:13:14.270 now more than 10 years ago in

NOTE Confidence: 0.81874716

00:13:14.270 --> 00:13:16.110 terms of microwave ablation,

NOTE Confidence: 0.81874716

00:13:16.110 --> 00:13:18.378 this is a patient 60 year old

NOTE Confidence: 0.81874716

00:13:18.378 --> 00:13:20.253 female with HPV induced cirrhosis

NOTE Confidence: 0.81874716

00:13:20.253 --> 00:13:23.130 and a 2 centimeter HCC in segment

NOTE Confidence: 0.81874716

00:13:23.130 --> 00:13:25.638 seven who was awaiting transplant.

NOTE Confidence: 0.81874716

00:13:25.640 --> 00:13:28.016 Here we see the lesion here,

NOTE Confidence: 0.81874716

00:13:28.020 --> 00:13:30.414 which was simply done with microwave

NOTE Confidence: 0.81874716

00:13:30.414 --> 00:13:33.179 ablation and a 2.7 year follow up.

NOTE Confidence: 0.80502

00:13:33.180 --> 00:13:35.604 There's no residual tumor so the

NOTE Confidence: 0.80502

00:13:35.604 --> 00:13:37.220 way microwave ablation works.

NOTE Confidence: 0.80502

00:13:37.220 --> 00:13:39.794 Is that you can propagate microwave

NOTE Confidence: 0.80502

00:13:39.794 --> 00:13:41.980 energy via an electromagnetic field,

NOTE Confidence: 0.80502

00:13:41.980 --> 00:13:43.712 and this induces tissue

NOTE Confidence: 0.80502

00:13:43.712 --> 00:13:45.444 hyperthermia via dielectric height,

NOTE Confidence: 0.80502

00:13:45.450 --> 00:13:48.348 historist hysteresis with that also means

NOTE Confidence: 0.80502

00:13:48.348 --> 00:13:51.091 is basically you dehydrogenated the tumor

NOTE Confidence: 0.80502

00:13:51.091 --> 00:13:53.667 and actually cause it to rapidly shrink.

NOTE Confidence: 0.80502

00:13:53.670 --> 00:13:56.523 This actually is done in a way where you

NOTE Confidence: 0.80502

00:13:56.523 --> 00:13:58.906 get higher ablation efficiency because

NOTE Confidence: 0.80502

00:13:58.906 --> 00:14:01.888 you can actually get higher tissue

NOTE Confidence: 0.80502

00:14:01.969 --> 00:14:04.783 temperatures and therefore you can get

NOTE Confidence: 0.80502

00:14:04.783 --> 00:14:07.432 larger ablation zones with shorter times.

NOTE Confidence: 0.80502

00:14:07.432 --> 00:14:09.748 And with this kind of treatment,

NOTE Confidence: 0.80502

00:14:09.750 --> 00:14:11.460 it readily penetrates through long

NOTE Confidence: 0.80502

00:14:11.460 --> 00:14:13.865 or chart issue where RFA is limited

NOTE Confidence: 0.80502

00:14:13.865 --> 00:14:16.091 and it's not influenced by heat sink

NOTE Confidence: 0.80502

00:14:16.091 --> 00:14:17.808 effects in the same way RFA is.

NOTE Confidence: 0.80502

00:14:17.810 --> 00:14:20.176 What that means is that if you

NOTE Confidence: 0.80502

00:14:20.176 --> 00:14:22.746 have a tumor that's sitting on a

NOTE Confidence: 0.80502

00:14:22.746 --> 00:14:25.427 portal vein or some kind of vessel

NOTE Confidence: 0.80502

00:14:25.427 --> 00:14:28.108 that can draw heat away from it.

NOTE Confidence: 0.80502

00:14:28.110 --> 00:14:30.210 With microwave ablation,

NOTE Confidence: 0.80502

00:14:30.210 --> 00:14:33.010 it's actually less common.

NOTE Confidence: 0.80502

00:14:33.010 --> 00:14:35.466 And this is just a study that just

NOTE Confidence: 0.80502

00:14:35.466 --> 00:14:37.524 shows that there similar overall

NOTE Confidence: 0.80502

00:14:37.524 --> 00:14:39.809 and recurrence free survival when

NOTE Confidence: 0.80502

00:14:39.809 --> 00:14:42.368 you compare microwave ablation RFA.

NOTE Confidence: 0.80502

00:14:42.370 --> 00:14:44.812 There was no difference in local

NOTE Confidence: 0.80502

00:14:44.812 --> 00:14:45.626 tumor progression.

NOTE Confidence: 0.80502

00:14:45.630 --> 00:14:47.665 The technical effectiveness as well

NOTE Confidence: 0.80502

00:14:47.665 --> 00:14:49.700 as the major complication rates.

NOTE Confidence: 0.80502

00:14:49.700 --> 00:14:53.400 So now that we know that RFA is all it

NOTE Confidence: 0.80502

00:14:53.506 --> 00:14:57.018 can be used as a first line therapy.

NOTE Confidence: 0.80502

00:14:57.020 --> 00:14:59.308 So can microwave ablation.

NOTE Confidence: 0.80502

00:14:59.308 --> 00:15:01.596 In terms of cryoablation,

NOTE Confidence: 0.80502

00:15:01.600 --> 00:15:04.799 the goal here is to achieve temperatures

NOTE Confidence: 0.80502

00:15:04.799 --> 00:15:07.619 less than 190 degrees Celsius.

NOTE Confidence: 0.80502

00:15:07.620 --> 00:15:10.620 It results in direct cellular injury,

NOTE Confidence: 0.80502

00:15:10.620 --> 00:15:11.836 vascular injury,

NOTE Confidence: 0.80502

00:15:11.836 --> 00:15:14.268 and even immunological injury.

NOTE Confidence: 0.80502

00:15:14.270 --> 00:15:16.862 What's interesting here is that you

NOTE Confidence: 0.80502

00:15:16.862 --> 00:15:19.110 can place multiple simultaneous probes.

NOTE Confidence: 0.80502

00:15:19.110 --> 00:15:21.774 You actually get in a natural

NOTE Confidence: 0.80502

00:15:21.774 --> 00:15:23.950 anesthetic effect from the ice,

NOTE Confidence: 0.80502

00:15:23.950 --> 00:15:28.670 and as you can see from this example.

NOTE Confidence: 0.80502

00:15:28.670 --> 00:15:30.818 Here we see the ice ball,

NOTE Confidence: 0.80502

00:15:30.820 --> 00:15:32.256 which is easily seen,

NOTE Confidence: 0.80502

00:15:32.256 --> 00:15:34.410 so you can actually sculpt the

NOTE Confidence: 0.80502

00:15:34.479 --> 00:15:36.549 lesion that you want to treat.

NOTE Confidence: 0.80502

00:15:36.550 --> 00:15:39.672 And because of this you actually can

NOTE Confidence: 0.80502

00:15:39.672 --> 00:15:42.429 get very predictable and reproducible.

NOTE Confidence: 0.80502

00:15:42.430 --> 00:15:45.950 The treatments in terms the

NOTE Confidence: 0.80502

00:15:45.950 --> 00:15:49.470 disadvantages because there's so many.

NOTE Confidence: 0.80502

00:15:49.470 --> 00:15:51.920 Needle probes are there that are used.

NOTE Confidence: 0.80502

00:15:51.920 --> 00:15:54.020 You can have longer procedure times.

NOTE Confidence: 0.80502

00:15:54.020 --> 00:15:55.800 There's a theoretical bleeding risk

NOTE Confidence: 0.80502

00:15:55.800 --> 00:15:58.219 and you can actually crack the liver,

NOTE Confidence: 0.80502

00:15:58.220 --> 00:15:59.970 and patients could actually result

NOTE Confidence: 0.80502

00:15:59.970 --> 00:16:01.020 in cryo shock,

NOTE Confidence: 0.80502

00:16:01.020 --> 00:16:03.820 which is a form of tumor lysis syndrome.

NOTE Confidence: 0.80502

00:16:03.820 --> 00:16:06.292 Now this is 1 case that I got

NOTE Confidence: 0.80502

00:16:06.292 --> 00:16:08.370 from a paper from 2007,

NOTE Confidence: 0.80502

00:16:08.370 --> 00:16:10.344 and the reason why I'm showing

NOTE Confidence: 0.80502

00:16:10.344 --> 00:16:12.824 this like that is that I've never

NOTE Confidence: 0.80502

00:16:12.824 --> 00:16:15.014 used cryo ablation in the liver,

NOTE Confidence: 0.80502

00:16:15.020 --> 00:16:18.068 so I just want to show you that

NOTE Confidence: 0.80502

00:16:18.068 --> 00:16:20.518 the example that we can do it.

NOTE Confidence: 0.80502

00:16:20.520 --> 00:16:22.566 It is being used in other

NOTE Confidence: 0.80502

00:16:22.566 --> 00:16:24.510 institutions or be it rarely.

NOTE Confidence: 0.80502

00:16:24.510 --> 00:16:27.312 And then the last one is

NOTE Confidence: 0.80502

00:16:27.312 --> 00:16:28.246 irreversible electroporation,

NOTE Confidence: 0.80502

00:16:28.250 --> 00:16:29.814 so irreversible electroporation is

NOTE Confidence: 0.80502

00:16:29.814 --> 00:16:32.738 a way that you can alter membrane

NOTE Confidence: 0.80502

00:16:32.738 --> 00:16:34.778 ionic potentials and therefore

NOTE Confidence: 0.80502

00:16:34.778 --> 00:16:36.308 induce irreversible disruption

NOTE Confidence: 0.80502

00:16:36.308 --> 00:16:38.989 of the cell membrane integrity.

NOTE Confidence: 0.80502

00:16:38.990 --> 00:16:41.516 The thought here is that this

NOTE Confidence: 0.80502

00:16:41.516 --> 00:16:44.120 is a non thermal ablation.

NOTE Confidence: 0.80502

00:16:44.120 --> 00:16:47.330 However there are studies now.

NOTE Confidence: 0.80502

00:16:47.330 --> 00:16:48.810 They have been published,

NOTE Confidence: 0.80502

00:16:48.810 --> 00:16:50.660 which actually does show a

NOTE Confidence: 0.80502

00:16:50.660 --> 00:16:52.660 mild thermal component to it.

NOTE Confidence: 0.80502

00:16:52.660 --> 00:16:55.540 So here we see a patient with cirrhosis

NOTE Confidence: 0.80502

00:16:55.540 --> 00:16:58.332 and had a very challenging tumor where

NOTE Confidence: 0.80502

00:16:58.332 --> 00:17:01.512 you see it right here in segment 4B

NOTE Confidence: 0.80502

00:17:01.512 --> 00:17:04.088 and it's sitting right on the bile

NOTE Confidence: 0.84893936

00:17:04.090 --> 00:17:08.034 duct and right near the portal vein so.

NOTE Confidence: 0.84893936

00:17:08.040 --> 00:17:10.362 So we thought that thermal ablation

NOTE Confidence: 0.84893936

00:17:10.362 --> 00:17:13.150 with heat may be very difficult and

NOTE Confidence: 0.84893936

00:17:13.150 --> 00:17:16.273 may result in some kind of injury to

NOTE Confidence: 0.84893936

00:17:16.273 --> 00:17:18.618 the bile duct or the portal vein.

NOTE Confidence: 0.84893936

00:17:18.620 --> 00:17:20.888 So here we see the electroporation

NOTE Confidence: 0.84893936

00:17:20.888 --> 00:17:21.644 needles placed.

NOTE Confidence: 0.84893936

00:17:21.650 --> 00:17:24.114 Now these need to be very symmetrical

NOTE Confidence: 0.84893936

00:17:24.114 --> 00:17:27.282 with so that you get very good electrical

NOTE Confidence: 0.84893936

00:17:27.282 --> 00:17:30.116 potentials across and here we see the

NOTE Confidence: 0.84893936

00:17:30.116 --> 00:17:32.629 tumor well treated and then at seven

NOTE Confidence: 0.84893936

00:17:32.629 --> 00:17:35.258 months follow-up there's no tumor at all,

NOTE Confidence: 0.84893936

00:17:35.260 --> 00:17:38.046 and that's a great result that's exactly.

NOTE Confidence: 0.84893936

00:17:38.050 --> 00:17:39.820 What we wanted to happen.

NOTE Confidence: 0.84893936

00:17:39.820 --> 00:17:41.842 In terms of ablation versus surgery

NOTE Confidence: 0.84893936

00:17:41.842 --> 00:17:43.800 in these early stage patients,

NOTE Confidence: 0.84893936

00:17:43.800 --> 00:17:46.229 we can see that there's survival and

NOTE Confidence: 0.84893936

00:17:46.229 --> 00:17:48.125 recurrence recurrence free survival and

NOTE Confidence: 0.84893936

00:17:48.125 --> 00:17:50.110 overall survival are not statistically

NOTE Confidence: 0.84893936

00:17:50.110 --> 00:17:52.129 significant in terms of all comers.

NOTE Confidence: 0.84893936

00:17:52.130 --> 00:17:53.578 However, when looking at

NOTE Confidence: 0.84893936

00:17:53.578 --> 00:17:55.388 those tumors that are central,

NOTE Confidence: 0.84893936

00:17:55.390 --> 00:17:57.918 that means that if a patient was to

NOTE Confidence: 0.84893936

00:17:57.918 --> 00:18:00.818 have a reception of a central tumor,

NOTE Confidence: 0.84893936

00:18:00.820 --> 00:18:03.130 it would be a very large and

NOTE Confidence: 0.84893936

00:18:03.130 --> 00:18:04.586 difficult reception that rate

NOTE Confidence: 0.84893936

00:18:04.586 --> 00:18:06.606 that ablation actually is favored,

NOTE Confidence: 0.84893936

00:18:06.610 --> 00:18:07.762 and in fact,

NOTE Confidence: 0.84893936

00:18:07.762 --> 00:18:10.900 when you look at the major complication rate.

NOTE Confidence: 0.84893936

00:18:10.900 --> 00:18:13.435 The ablation group is statistically

NOTE Confidence: 0.84893936

00:18:13.435 --> 00:18:15.970 significantly better than the resection.

NOTE Confidence: 0.90414697

00:18:18.230 --> 00:18:18.970 And then.

NOTE Confidence: 0.88377416

00:18:22.740 --> 00:18:25.267 Free in terms of overall and disease,

NOTE Confidence: 0.88377416

00:18:25.270 --> 00:18:27.586 free survival, but it also looks

NOTE Confidence: 0.88377416

00:18:27.586 --> 00:18:29.978 at the overall quality of Life OK,

NOTE Confidence: 0.88377416

00:18:29.980 --> 00:18:32.262 So what they found is that there's

NOTE Confidence: 0.88377416

00:18:32.262 --> 00:18:34.079 really no difference in overall

NOTE Confidence: 0.88377416

00:18:34.079 --> 00:18:36.009 and disease free survival when

NOTE Confidence: 0.88377416

00:18:36.009 --> 00:18:37.939 comparing both ablation and surgery.

NOTE Confidence: 0.88377416

00:18:37.940 --> 00:18:40.238 However, there was a significant difference

NOTE Confidence: 0.88377416

00:18:40.238 --> 00:18:43.119 in the quality of life scores such that

NOTE Confidence: 0.88377416

00:18:43.119 --> 00:18:45.550 the surgery does get a little better,

NOTE Confidence: 0.88377416

00:18:45.550 --> 00:18:48.438 but never to the level of the ablation.

NOTE Confidence: 0.88377416

00:18:48.440 --> 00:18:51.590 So when we look at a lot of the

NOTE Confidence: 0.88377416

00:18:51.590 --> 00:18:53.688 interventional procedures that we do.

NOTE Confidence: 0.88377416

00:18:53.690 --> 00:18:55.345 We're always looking at quality

NOTE Confidence: 0.88377416

00:18:55.345 --> 00:18:57.415 of life initiatives and then of

NOTE Confidence: 0.88377416

00:18:57.415 --> 00:18:59.205 course in these particular patients,

NOTE Confidence: 0.88377416

00:18:59.210 --> 00:19:00.940 again with low volume disease,

NOTE Confidence: 0.88377416

00:19:00.940 --> 00:19:02.896 we're always looking to treat these

NOTE Confidence: 0.88377416

00:19:02.896 --> 00:19:05.080 patients as a bridge to transplant.

NOTE Confidence: 0.88377416

00:19:05.080 --> 00:19:07.504 So this just is a few studies that

NOTE Confidence: 0.88377416

00:19:07.504 --> 00:19:09.738 just shows how the results of

NOTE Confidence: 0.88377416

00:19:09.738 --> 00:19:11.688 keeping patients on the transplant

NOTE Confidence: 0.88377416

00:19:11.688 --> 00:19:13.696 list so they don't drop out.

NOTE Confidence: 0.8366912

00:19:16.000 --> 00:19:19.840 So in terms of transarterial therapies.

NOTE Confidence: 0.8366912

00:19:19.840 --> 00:19:22.186 The rationale is that most liver

NOTE Confidence: 0.8366912

00:19:22.186 --> 00:19:23.750 tumors receive blood supply

NOTE Confidence: 0.8366912

00:19:23.815 --> 00:19:25.639 largely from hepatic artery,

NOTE Confidence: 0.8366912

00:19:25.640 --> 00:19:28.112 that these liver tumors are often

NOTE Confidence: 0.8366912

00:19:28.112 --> 00:19:29.306 hypervascular, especially HCC,

NOTE Confidence: 0.8366912

00:19:29.306 --> 00:19:32.022 and that this new metastases are less

NOTE Confidence: 0.8366912

00:19:32.022 --> 00:19:34.736 common than in other epithelial neoplasms.

NOTE Confidence: 0.8366912

00:19:34.740 --> 00:19:38.060 This has been initiated over 40 years ago.

NOTE Confidence: 0.8366912

00:19:38.060 --> 00:19:40.292 Some of the techniques we still

NOTE Confidence: 0.8366912

00:19:40.292 --> 00:19:43.228 use today when I talk to patients

NOTE Confidence: 0.8366912

00:19:43.228 --> 00:19:45.503 about some of these therapies,

NOTE Confidence: 0.8366912

00:19:45.510 --> 00:19:48.598 I do tell them that some of this

NOTE Confidence: 0.8366912

00:19:48.598 --> 00:19:51.387 therapy has been done for decades.

NOTE Confidence: 0.8366912

00:19:51.390 --> 00:19:53.598 However, it still is not the same therapy

NOTE Confidence: 0.8366912

00:19:53.598 --> 00:19:55.816 and I'll get into that a little later.

NOTE Confidence: 0.8366912

00:19:55.820 --> 00:19:58.522 So the goal here is to selectively

NOTE Confidence: 0.8366912

00:19:58.522 --> 00:20:00.180 and locally deliver these.

NOTE Confidence: 0.8366912

00:20:00.180 --> 00:20:03.456 Intra arterial therapeutics to the tumor bed

NOTE Confidence: 0.8366912

00:20:03.456 --> 00:20:05.559 thereby effectively targeting the tumor,

NOTE Confidence: 0.8366912

00:20:05.560 --> 00:20:07.800 sparing the surrounding hepatic parenchyma

NOTE Confidence: 0.8366912

00:20:07.800 --> 00:20:10.040 and minimizing complications in toxicities.

NOTE Confidence: 0.8366912

00:20:10.040 --> 00:20:12.280 But again, as we discussed,

NOTE Confidence: 0.8366912

00:20:12.280 --> 00:20:14.515 we really need to understand

NOTE Confidence: 0.8366912

00:20:14.515 --> 00:20:16.303 what the term tases,

NOTE Confidence: 0.8366912

00:20:16.310 --> 00:20:17.216 because again,

NOTE Confidence: 0.8366912

00:20:17.216 --> 00:20:20.387 there's a lot of difficulty within the

NOTE Confidence: 0.8366912

00:20:20.387 --> 00:20:23.507 literature and within just our own tumor

NOTE Confidence: 0.8366912

00:20:23.507 --> 00:20:25.750 boards and reporting structures that

NOTE Confidence: 0.8366912

00:20:25.750 --> 00:20:28.844 that seem to use these terms interchangeably.

NOTE Confidence: 0.8366912

00:20:28.850 --> 00:20:31.090 Now, all utilized selective catheterization

NOTE Confidence: 0.8366912

00:20:31.090 --> 00:20:33.755 of the paddock artery branches, but.

NOTE Confidence: 0.8366912

00:20:33.755 --> 00:20:35.030 Once that's done,

NOTE Confidence: 0.8366912

00:20:35.030 --> 00:20:37.155 the procedures are actually very,

NOTE Confidence: 0.8366912

00:20:37.160 --> 00:20:39.000 very different.

NOTE Confidence: 0.8366912

00:20:39.000 --> 00:20:41.210 So what is bland embolization?

NOTE Confidence: 0.8366912

00:20:41.210 --> 00:20:42.530 Bland embolization is

NOTE Confidence: 0.8366912

00:20:42.530 --> 00:20:43.850 embolization without chemotherapy,

NOTE Confidence: 0.8366912

00:20:43.850 --> 00:20:46.060 only using the embolic agent.

NOTE Confidence: 0.8366912

00:20:46.060 --> 00:20:48.562 The goal here is to completely

NOTE Confidence: 0.8366912

00:20:48.562 --> 00:20:50.910 occlude the tumor feeding vessels,

NOTE Confidence: 0.8366912

00:20:50.910 --> 00:20:53.990 which then can cause ischaemia and process.

NOTE Confidence: 0.8366912

00:20:53.990 --> 00:20:55.710 Now, because of this,

NOTE Confidence: 0.8366912

00:20:55.710 --> 00:20:57.860 the paint the procedures can

NOTE Confidence: 0.8366912

00:20:57.860 --> 00:21:00.319 be sometimes quite painful.

NOTE Confidence: 0.8366912

00:21:00.320 --> 00:21:02.872 So because of the way that we do

NOTE Confidence: 0.8366912

00:21:02.872 --> 00:21:05.270 it with very small particles,

NOTE Confidence: 0.8366912

00:21:05.270 --> 00:21:08.318 that actually leads to this kind of pain,

NOTE Confidence: 0.8366912

00:21:08.320 --> 00:21:10.606 it may have very different effects

NOTE Confidence: 0.8366912

00:21:10.606 --> 00:21:11.749 on the vasculature.

NOTE Confidence: 0.8366912

00:21:11.750 --> 00:21:14.417 There's been a lot of extensive research,

NOTE Confidence: 0.8366912

00:21:14.420 --> 00:21:16.586 but the precise effect on the

NOTE Confidence: 0.8366912

00:21:16.586 --> 00:21:18.610 tumor cells largely remain unknown,

NOTE Confidence: 0.8366912

00:21:18.610 --> 00:21:21.658 and because this is done through a scheme,

NOTE Confidence: 0.8366912

00:21:21.660 --> 00:21:22.037 yeah,

NOTE Confidence: 0.8366912

00:21:22.037 --> 00:21:23.922 be hypoxic events may actually

NOTE Confidence: 0.8366912

00:21:23.922 --> 00:21:25.850 cause activation of several genes,

NOTE Confidence: 0.8366912

00:21:25.850 --> 00:21:26.993 including veg F,

NOTE Confidence: 0.8366912

00:21:26.993 --> 00:21:29.279 which can then lead to compens,

NOTE Confidence: 0.8366912

00:21:29.280 --> 00:21:31.686 atory, angiogenesis, and tumor growth so.

NOTE Confidence: 0.8366912

00:21:31.690 --> 00:21:32.551 Like I said,

NOTE Confidence: 0.8366912

00:21:32.551 --> 00:21:34.560 the most common techniques that are used

NOTE Confidence: 0.8366912

00:21:34.615 --> 00:21:36.463 are these very very small particles

NOTE Confidence: 0.8366912

00:21:36.463 --> 00:21:38.570 which get very distal into the tumor.

NOTE Confidence: 0.8366912

00:21:38.570 --> 00:21:39.762 They don't actually make

NOTE Confidence: 0.8366912

00:21:39.762 --> 00:21:41.252 it to the capillary level,

NOTE Confidence: 0.8366912

00:21:41.260 --> 00:21:42.750 which may be an issue,

NOTE Confidence: 0.8366912

00:21:42.750 --> 00:21:44.400 but the goal was always really

NOTE Confidence: 0.8366912

00:21:44.400 --> 00:21:46.688 to get to near stasis or stasis

NOTE Confidence: 0.8366912

00:21:46.688 --> 00:21:48.926 while preserving flow to the larger

NOTE Confidence: 0.8366912

00:21:48.926 --> 00:21:49.920 arterial branches.

NOTE Confidence: 0.8366912

00:21:49.920 --> 00:21:52.521 This is just a case of a 61 year

NOTE Confidence: 0.8366912

00:21:52.521 --> 00:21:55.106 old female with HCV cirrhosis who

NOTE Confidence: 0.8366912

00:21:55.106 --> 00:21:57.316 had a 4.8 centimeter HCC.

NOTE Confidence: 0.8366912

00:21:57.320 --> 00:21:59.567 The goal here was to embolize her

NOTE Confidence: 0.8366912

00:21:59.567 --> 00:22:02.501 to get her as a bridge to transplant

NOTE Confidence: 0.8366912

00:22:02.501 --> 00:22:05.265 because she was very close to being

NOTE Confidence: 0.8366912

00:22:05.265 --> 00:22:07.629 over the five centimeters that would

NOTE Confidence: 0.8366912

00:22:07.629 --> 00:22:09.972 keep her within the Milan criteria.

NOTE Confidence: 0.8366912

00:22:09.972 --> 00:22:12.711 We did this very quickly and we

NOTE Confidence: 0.8366912

00:22:12.711 --> 00:22:14.709 were able to treat this tumor.

NOTE Confidence: 0.8366912

00:22:14.710 --> 00:22:17.970 As you can see here.

NOTE Confidence: 0.8366912

00:22:17.970 --> 00:22:20.646 Totally included and then one month

NOTE Confidence: 0.8366912

00:22:20.646 --> 00:22:23.202 later totally necrotic and now is

NOTE Confidence: 0.8366912

00:22:23.202 --> 00:22:24.240 at 4 centimeters,

NOTE Confidence: 0.8366912

00:22:24.240 --> 00:22:26.520 so she ultimately underwent a

NOTE Confidence: 0.8366912

00:22:26.520 --> 00:22:28.800 transplant that few months after

NOTE Confidence: 0.8366912

00:22:28.878 --> 00:22:30.130 the embolization.

NOTE Confidence: 0.8366912

00:22:30.130 --> 00:22:32.790 This is a patient that in a

NOTE Confidence: 0.8366912

00:22:32.790 --> 00:22:33.550 different location,

NOTE Confidence: 0.8366912

00:22:33.550 --> 00:22:36.100 probably would have gotten oblated.

NOTE Confidence: 0.8366912

00:22:36.100 --> 00:22:39.208 So here we see a very small

NOTE Confidence: 0.8366912

00:22:39.208 --> 00:22:40.540 lesion in segment

NOTE Confidence: 0.8375181

00:22:40.643 --> 00:22:43.270 8. That's a solitaire E lesion that's

NOTE Confidence: 0.8375181

00:22:43.270 --> 00:22:46.440 very close to a budding the heart.

NOTE Confidence: 0.8375181

00:22:46.440 --> 00:22:49.936 So I thought that this would be a

NOTE Confidence: 0.8375181

00:22:49.936 --> 00:22:52.480 very challenging lesion to a blade,

NOTE Confidence: 0.8375181

00:22:52.480 --> 00:22:54.630 and I opted for embolization.

NOTE Confidence: 0.8375181

00:22:54.630 --> 00:22:56.846 We see the Hypervascular

NOTE Confidence: 0.8375181

00:22:56.846 --> 00:22:59.616 territory within the artery here.

NOTE Confidence: 0.8375181

00:22:59.620 --> 00:23:01.438 At the end of the procedure,

NOTE Confidence: 0.8375181

00:23:01.440 --> 00:23:02.950 there's no more tumor blush,

NOTE Confidence: 0.8375181

00:23:02.950 --> 00:23:05.064 and now on the post embolization MRI,

NOTE Confidence: 0.8375181

00:23:05.070 --> 00:23:07.340 no contrast enhancement is seen.

NOTE Confidence: 0.8375181

00:23:07.340 --> 00:23:09.706 And this is another case where this

NOTE Confidence: 0.8375181

00:23:09.706 --> 00:23:12.415 was a patient that was going to

NOTE Confidence: 0.8375181

00:23:12.415 --> 00:23:14.445 have a combined bland embolization,

NOTE Confidence: 0.8375181

00:23:14.450 --> 00:23:16.688 followed by portal embolization in order

NOTE Confidence: 0.8375181

00:23:16.688 --> 00:23:18.929 to increase hypertrophy prior to resection.

NOTE Confidence: 0.8375181

00:23:18.930 --> 00:23:21.174 So here we see the tumor

NOTE Confidence: 0.8375181

00:23:21.174 --> 00:23:22.670 we have replaced right?

NOTE Confidence: 0.8375181

00:23:22.670 --> 00:23:24.540 Hepatic artery from the smam.

NOTE Confidence: 0.8375181

00:23:24.540 --> 00:23:26.415 The patient was embolized with

NOTE Confidence: 0.8375181

00:23:26.415 --> 00:23:27.915 100 Micron microspheres and

NOTE Confidence: 0.8375181

00:23:27.915 --> 00:23:29.779 then a tolling aquatic tumor.

NOTE Confidence: 0.8375181

00:23:29.780 --> 00:23:32.482 But in this case we actually saw

NOTE Confidence: 0.8375181

00:23:32.482 --> 00:23:34.066 significant regeneration to the

NOTE Confidence: 0.8375181

00:23:34.066 --> 00:23:35.866 point where the patient never

NOTE Confidence: 0.8375181

00:23:35.866 --> 00:23:37.760 actually needed to get there.

NOTE Confidence: 0.8375181

00:23:37.760 --> 00:23:39.875 Pve and and ultimately underwent

NOTE Confidence: 0.8375181

00:23:39.875 --> 00:23:41.144 a successful resection,

NOTE Confidence: 0.8375181

00:23:41.150 --> 00:23:44.486 and this is just some data that I

NOTE Confidence: 0.8375181

00:23:44.486 --> 00:23:47.938 wanted to to show where we see some,

NOTE Confidence: 0.8375181

00:23:47.940 --> 00:23:50.060 you know, 33% median survival.

NOTE Confidence: 0.8375181

00:23:50.060 --> 00:23:52.598 21 months, you know three years.

NOTE Confidence: 0.8375181

00:23:52.600 --> 00:23:54.862 We also see some patients that

NOTE Confidence: 0.8375181

00:23:54.862 --> 00:23:56.947 have very good response rates

NOTE Confidence: 0.8375181

00:23:56.947 --> 00:23:58.959 and reasonable survival rates.

NOTE Confidence: 0.8375181

00:23:58.960 --> 00:24:01.504 And then when you have post

NOTE Confidence: 0.8375181

00:24:01.504 --> 00:24:02.776 op recurrence meeting,

NOTE Confidence: 0.8375181

00:24:02.780 --> 00:24:07.820 survival can be as high as 46 months.

NOTE Confidence: 0.8375181

00:24:07.820 --> 00:24:10.988 So what is conventional taste or see taste?

NOTE Confidence: 0.8375181

00:24:10.990 --> 00:24:13.000 So conventional taste is an infusion

NOTE Confidence: 0.8375181

00:24:13.000 --> 00:24:14.960 of a mixture of chemotherapeutic

NOTE Confidence: 0.8375181

00:24:14.960 --> 00:24:17.700 agents with iodized oil followed

NOTE Confidence: 0.8375181

00:24:17.700 --> 00:24:19.892 by embolization with microparticles

NOTE Confidence: 0.8375181

00:24:19.965 --> 00:24:22.285 and what the oil does act as in

NOTE Confidence: 0.8375181

00:24:22.285 --> 00:24:24.366 emulsion that functions as a vector.

NOTE Confidence: 0.8375181

00:24:24.366 --> 00:24:26.236 To carry these cytotoxic toxic

NOTE Confidence: 0.8375181

00:24:26.236 --> 00:24:28.220 agents to the panic sinusoids

NOTE Confidence: 0.8375181

00:24:28.220 --> 00:24:30.150 where drugs gradually are released

NOTE Confidence: 0.8375181

00:24:30.150 --> 00:24:31.978 from this unstable mixture.

NOTE Confidence: 0.8375181

00:24:31.980 --> 00:24:33.560 So like I said,

NOTE Confidence: 0.8375181

00:24:33.560 --> 00:24:35.930 these procedures have been done now

NOTE Confidence: 0.8375181

00:24:36.016 --> 00:24:38.809 for like for more than four decades.

NOTE Confidence: 0.8375181

00:24:38.810 --> 00:24:41.925 But when I consent or consult patients.

NOTE Confidence: 0.8375181

00:24:41.930 --> 00:24:43.073 For these procedures,

NOTE Confidence: 0.8375181

00:24:43.073 --> 00:24:45.359 I tell him that it's not.

NOTE Confidence: 0.8375181

00:24:45.360 --> 00:24:46.154 You know,

NOTE Confidence: 0.8375181

00:24:46.154 --> 00:24:46.948 the same.

NOTE Confidence: 0.8375181

00:24:46.948 --> 00:24:50.103 We don't do it the same way as

NOTE Confidence: 0.8375181

00:24:50.103 --> 00:24:51.455 we did in 1977,

NOTE Confidence: 0.8375181

00:24:51.460 --> 00:24:53.360 and based on the global

NOTE Confidence: 0.8375181

00:24:53.360 --> 00:24:54.880 utilization of this technique,

NOTE Confidence: 0.8375181

00:24:54.880 --> 00:24:56.320 the Society of Interventional

NOTE Confidence: 0.8375181

00:24:56.320 --> 00:24:58.919 Radiology has called in the first line

NOTE Confidence: 0.8375181

00:24:58.919 --> 00:25:00.804 therapy for inoperable HCC patients

NOTE Confidence: 0.8375181

00:25:00.804 --> 00:25:02.890 with well preserved liver function.

NOTE Confidence: 0.8375181

00:25:02.890 --> 00:25:03.592 So unfortunately,

NOTE Confidence: 0.8375181

00:25:03.592 --> 00:25:05.347 at this time conventional taste

NOTE Confidence: 0.8375181

00:25:05.347 --> 00:25:07.460 is kind of non standardized.

NOTE Confidence: 0.8375181

00:25:07.460 --> 00:25:10.796 The trend over the years has gone from

NOTE Confidence: 0.8375181

00:25:10.796 --> 00:25:13.717 whole liver to low bar to selective.

NOTE Confidence: 0.8375181

00:25:13.720 --> 00:25:16.762 And also from occlusive to not

NOTE Confidence: 0.8375181

00:25:16.762 --> 00:25:18.283 necessarily occlusive again,

NOTE Confidence: 0.8375181

00:25:18.290 --> 00:25:22.256 the hypoxic insult may lead to

NOTE Confidence: 0.8375181

00:25:22.256 --> 00:25:24.900 actually stimulation of growth

NOTE Confidence: 0.8375181

00:25:25.017 --> 00:25:28.377 factors that may lead to tumor.

NOTE Confidence: 0.8375181

00:25:28.380 --> 00:25:30.068 To more tumor growth,

NOTE Confidence: 0.8375181

00:25:30.068 --> 00:25:31.334 there's various chemotherapeutic

NOTE Confidence: 0.8375181

00:25:31.334 --> 00:25:33.540 regimens and actually in 2019

NOTE Confidence: 0.8375181

00:25:33.540 --> 00:25:35.292 in the Journal cardiovascular

NOTE Confidence: 0.8375181

00:25:35.292 --> 00:25:36.168 Interventional Radiology,

NOTE Confidence: 0.8375181

00:25:36.170 --> 00:25:38.996 there was a global survey which

NOTE Confidence: 0.8375181

00:25:38.996 --> 00:25:41.334 basically showed that there's lots

NOTE Confidence: 0.8375181

00:25:41.334 --> 00:25:43.966 of different ways you can do this,

NOTE Confidence: 0.8375181

00:25:43.970 --> 00:25:47.036 But the most common embolic agents that

NOTE Confidence: 0.8375181

00:25:47.036 --> 00:25:50.457 we use these days are again our LOPI,

NOTE Confidence: 0.8375181

00:25:50.460 --> 00:25:52.630 Dolores Idol, PVA gel foam,

NOTE Confidence: 0.8375181

00:25:52.630 --> 00:25:55.348 and some others.

NOTE Confidence: 0.8375181

00:25:55.350 --> 00:25:59.542 So this is one of the two landmark

NOTE Confidence: 0.8375181

00:25:59.542 --> 00:26:01.390 randomized control trials,

NOTE Confidence: 0.8375181

00:26:01.390 --> 00:26:05.180 first showing the benefit of.

NOTE Confidence: 0.8375181

00:26:05.180 --> 00:26:06.440 Embolization it's interesting

NOTE Confidence: 0.8375181

00:26:06.440 --> 00:26:08.540 that the procedure was performed

NOTE Confidence: 0.8375181

00:26:08.540 --> 00:26:10.824 for 25 years before we actually

NOTE Confidence: 0.8375181

00:26:10.824 --> 00:26:12.549 were able to show benefit.

NOTE Confidence: 0.8375181

00:26:12.550 --> 00:26:14.866 This was a study that was

NOTE Confidence: 0.8375181

00:26:14.866 --> 00:26:16.410 performed from the Barcelona

NOTE Confidence: 0.84367865

00:26:16.486 --> 00:26:19.630 Cancer Center and it showed largely that it

NOTE Confidence: 0.84367865

00:26:19.630 --> 00:26:22.635 was working in a select group of patients.

NOTE Confidence: 0.84367865

00:26:22.640 --> 00:26:25.736 112 out of 903 that had well encapsulated,

NOTE Confidence: 0.84367865

00:26:25.740 --> 00:26:28.246 smaller sized tumors in patients with good

NOTE Confidence: 0.84367865

00:26:28.246 --> 00:26:30.788 liver function and good performance status.

NOTE Confidence: 0.84367865

00:26:30.790 --> 00:26:33.814 So that was one way that we were

NOTE Confidence: 0.84367865

00:26:33.814 --> 00:26:36.467 able to justify the use of.

NOTE Confidence: 0.84367865

00:26:36.470 --> 00:26:39.459 Conventional taste and this was another study

NOTE Confidence: 0.84367865

00:26:39.459 --> 00:26:42.349 that was performed in an Asian population,

NOTE Confidence: 0.84367865

00:26:42.350 --> 00:26:44.870 mostly with HPV that also had

NOTE Confidence: 0.84367865

00:26:44.870 --> 00:26:46.970 taste on demand. I'm sorry.

NOTE Confidence: 0.84367865

00:26:46.970 --> 00:26:49.490 Taste monthly or every two months,

NOTE Confidence: 0.84367865

00:26:49.490 --> 00:26:52.418 so they had a scheduled time where they

NOTE Confidence: 0.84367865

00:26:52.418 --> 00:26:56.738 had it and as you can see there is a

NOTE Confidence: 0.84367865

00:26:56.738 --> 00:26:58.265 statistically significant difference

NOTE Confidence: 0.84367865

00:26:58.265 --> 00:27:01.115 in taste versus supportive care.

NOTE Confidence: 0.84367865

00:27:01.120 --> 00:27:03.050 So how does this work?

NOTE Confidence: 0.84367865

00:27:03.050 --> 00:27:04.304 Well, basically aside,

NOTE Confidence: 0.84367865

00:27:04.304 --> 00:27:07.995 all Orlopp Idol is a poppy seed oil and

NOTE Confidence: 0.84367865

00:27:07.995 --> 00:27:11.181 it acts as a drug carrier that seeks out

NOTE Confidence: 0.84367865

00:27:11.181 --> 00:27:14.592 the tumors and also acts as an embolic agent.

NOTE Confidence: 0.84367865

00:27:14.600 --> 00:27:17.240 And we know that we can do this with the

NOTE Confidence: 0.84367865

00:27:17.306 --> 00:27:19.681 understanding that there's very complex

NOTE Confidence: 0.84367865

00:27:19.681 --> 00:27:22.526 sinusoidal anatomy and such that the

NOTE Confidence: 0.84367865

00:27:22.526 --> 00:27:25.340 hepatic artery and the portal vein are

NOTE Confidence: 0.84367865

00:27:25.340 --> 00:27:27.806 actually connected in this time besides.

NOTE Confidence: 0.84367865

00:27:27.806 --> 00:27:30.735 And the reason why that's important is

NOTE Confidence: 0.84367865

00:27:30.735 --> 00:27:33.276 that you can get in paddock arterial

NOTE Confidence: 0.84367865

00:27:33.276 --> 00:27:35.508 and portal venous occlusion such that

NOTE Confidence: 0.84367865

00:27:35.508 --> 00:27:38.358 the oil ends up in the tumors crosses

NOTE Confidence: 0.84367865

00:27:38.358 --> 00:27:40.836 from the artery into the portal vein

NOTE Confidence: 0.84367865

00:27:40.836 --> 00:27:43.293 and then kind of sits there and then

NOTE Confidence: 0.84367865

00:27:43.293 --> 00:27:45.879 you block up with particles because the

NOTE Confidence: 0.84367865

00:27:45.879 --> 00:27:48.351 forward flow is the arterial pressure

NOTE Confidence: 0.84367865

00:27:48.360 --> 00:27:50.957 is still pushing the oil across into

NOTE Confidence: 0.84367865

00:27:50.957 --> 00:27:53.786 the portal vein so you block it up

NOTE Confidence: 0.84367865

00:27:53.786 --> 00:27:55.860 with particles to stop that flow.

NOTE Confidence: 0.84367865

00:27:55.860 --> 00:27:58.464 This is just a case of a.

NOTE Confidence: 0.84367865

00:27:58.470 --> 00:28:00.474 53 year old man with multifocal

NOTE Confidence: 0.84367865

00:28:00.474 --> 00:28:02.687 HCC with chronic HCV and elevated

NOTE Confidence: 0.84367865

00:28:02.687 --> 00:28:04.707 AFP who has multifocal disease.

NOTE Confidence: 0.84367865

00:28:04.710 --> 00:28:07.419 This large tumor in segments in savings

NOTE Confidence: 0.84367865

00:28:07.419 --> 00:28:09.849 for taking some eight and four a.

NOTE Confidence: 0.84367865

00:28:09.850 --> 00:28:12.778 Here we see it on the CAT scan.

NOTE Confidence: 0.84367865

00:28:12.780 --> 00:28:13.950 Here's the tumor.

NOTE Confidence: 0.84367865

00:28:13.950 --> 00:28:17.066 The Lipiodol has iodine in it so you

NOTE Confidence: 0.84367865

00:28:17.066 --> 00:28:19.802 actually can see it on an X Ray and

NOTE Confidence: 0.84367865

00:28:19.886 --> 00:28:23.006 here you can see after the procedure is

NOTE Confidence: 0.84367865

00:28:23.006 --> 00:28:25.250 over where the lipiodol is staining.

NOTE Confidence: 0.84367865

00:28:25.250 --> 00:28:28.679 The reason why I brought up in the beginning.

NOTE Confidence: 0.84367865

00:28:28.680 --> 00:28:31.606 About the fact that it's really important

NOTE Confidence: 0.84367865

00:28:31.606 --> 00:28:34.302 to know what that this is lipiodol

NOTE Confidence: 0.84367865

00:28:34.302 --> 00:28:37.613 is that I had a report recently of a

NOTE Confidence: 0.84367865

00:28:37.613 --> 00:28:40.378 patient that I treated with this that

NOTE Confidence: 0.84367865

00:28:40.380 --> 00:28:43.548 kind of called the Lipiodol Council

NOTE Confidence: 0.84367865

00:28:43.548 --> 00:28:45.660 vacations of uncertain etiology.

NOTE Confidence: 0.84367865

00:28:45.660 --> 00:28:48.033 A whole plethora of why you know

NOTE Confidence: 0.84367865

00:28:48.033 --> 00:28:49.660 what what's going on here.

NOTE Confidence: 0.84367865

00:28:49.660 --> 00:28:52.316 But when we simply just apply it all,

NOTE Confidence: 0.84367865

00:28:52.320 --> 00:28:53.548 so like I said,

NOTE Confidence: 0.84367865

00:28:53.548 --> 00:28:54.776 there's arterial portal communication

NOTE Confidence: 0.84367865

00:28:54.776 --> 00:28:56.648 is very important to understand,

NOTE Confidence: 0.84367865

00:28:56.650 --> 00:28:59.266 and the more you get into the portal

NOTE Confidence: 0.84367865

00:28:59.266 --> 00:29:01.640 vein that apply at all in motion,

NOTE Confidence: 0.84367865

00:29:01.640 --> 00:29:03.305 the better results you actually

NOTE Confidence: 0.84367865

00:29:03.305 --> 00:29:04.970 get is born out here.

NOTE Confidence: 0.84367865

00:29:04.970 --> 00:29:07.733 Now we do see in our tumor boards that

NOTE Confidence: 0.84367865

00:29:07.733 --> 00:29:09.966 sometimes patients do have some portal,

NOTE Confidence: 0.84367865

00:29:09.970 --> 00:29:10.918 vein, bland thrombus,

NOTE Confidence: 0.84367865

00:29:10.918 --> 00:29:13.559 and that may be a reason why their

NOTE Confidence: 0.84367865

00:29:13.559 --> 00:29:15.725 outcomes for at least their tumor.

NOTE Confidence: 0.84367865

00:29:15.730 --> 00:29:18.064 Is really well because you're actually

NOTE Confidence: 0.84367865

00:29:18.064 --> 00:29:20.460 doing an arterial importal embolization.

NOTE Confidence: 0.84367865

00:29:20.460 --> 00:29:22.700 So I want to show a few cases.

NOTE Confidence: 0.84367865

00:29:22.700 --> 00:29:24.272 This is a patient.

NOTE Confidence: 0.84367865

00:29:24.272 --> 00:29:26.630 You see the tumor up here

NOTE Confidence: 0.81704414

00:29:26.727 --> 00:29:30.020 in segment 8. And.

NOTE Confidence: 0.81704414

00:29:30.020 --> 00:29:32.108 Again, we see the tumor here.

NOTE Confidence: 0.81704414

00:29:32.110 --> 00:29:34.084 You see, the lipiodol staining the

NOTE Confidence: 0.81704414

00:29:34.084 --> 00:29:36.630 tumor on the single flora scopic image,

NOTE Confidence: 0.81704414

00:29:36.630 --> 00:29:38.838 and you can actually see the

NOTE Confidence: 0.81704414

00:29:38.838 --> 00:29:41.018 portal vein here next to the

NOTE Confidence: 0.81704414

00:29:41.018 --> 00:29:42.896 tumor as well as down here.

NOTE Confidence: 0.81704414

00:29:42.900 --> 00:29:44.923 So at the end of the at

NOTE Confidence: 0.81704414

00:29:44.923 --> 00:29:47.069 the end of the procedure,

NOTE Confidence: 0.81704414

00:29:47.070 --> 00:29:50.994 we can see that there is a complete filling

NOTE Confidence: 0.81704414

00:29:50.994 --> 00:29:54.847 of two of tumor with dilipbhai at all.

NOTE Confidence: 0.81704414

00:29:54.850 --> 00:29:57.928 And then this is the before.

NOTE Confidence: 0.81704414

00:29:57.930 --> 00:30:00.926 And then this is one month after.

NOTE Confidence: 0.81704414

00:30:00.930 --> 00:30:04.026 We see a basically a whole.

NOTE Confidence: 0.81704414

00:30:04.030 --> 00:30:04.932 And ultimately,

NOTE Confidence: 0.81704414

00:30:04.932 --> 00:30:07.187 the patient had complete necrosis,

NOTE Confidence: 0.81704414

00:30:07.190 --> 00:30:09.440 an now at nine months.

NOTE Confidence: 0.81704414

00:30:09.440 --> 00:30:12.640 Follow-up has no residual disease.

NOTE Confidence: 0.81704414

00:30:12.640 --> 00:30:14.544 So one of the things that I

NOTE Confidence: 0.81704414

00:30:14.544 --> 00:30:16.107 think is really important and

NOTE Confidence: 0.81704414

00:30:16.107 --> 00:30:18.494 we can discuss this in all the

NOTE Confidence: 0.81704414

00:30:18.494 --> 00:30:20.299 different types of embolization.

NOTE Confidence: 0.81704414

00:30:20.300 --> 00:30:22.112 But because of applied all being

NOTE Confidence: 0.81704414

00:30:22.112 --> 00:30:24.464 radiopaque we can see I'm using this

NOTE Confidence: 0.81704414

00:30:24.464 --> 00:30:26.630 opportunity to talk about advanced imaging,

NOTE Confidence: 0.81704414

00:30:26.630 --> 00:30:28.744 so it's very important to get high

NOTE Confidence: 0.81704414

00:30:28.744 --> 00:30:30.290 quality imaging during procedures,

NOTE Confidence: 0.81704414

00:30:30.290 --> 00:30:32.456 which I believe is critical to

NOTE Confidence: 0.81704414

00:30:32.456 --> 00:30:33.900 optimize tumor targeting and

NOTE Confidence: 0.81704414

00:30:33.967 --> 00:30:36.151 this can be done with the 3D

NOTE Confidence: 0.81704414

00:30:36.151 --> 00:30:37.948 angiography combing or cone beam CT,

NOTE Confidence: 0.81704414

00:30:37.950 --> 00:30:40.099 which is some of what I showed

NOTE Confidence: 0.81704414

00:30:40.099 --> 00:30:41.712 or combining a multidetector

NOTE Confidence: 0.81704414

00:30:41.712 --> 00:30:43.557 CT angiography system.

NOTE Confidence: 0.81704414

00:30:43.560 --> 00:30:46.199 In your interventional suite and we know

NOTE Confidence: 0.81704414

00:30:46.199 --> 00:30:48.499 that from studies as early as 2007,

NOTE Confidence: 0.81704414

00:30:48.500 --> 00:30:51.524 of which I was involved in one from

NOTE Confidence: 0.81704414

00:30:51.524 --> 00:30:54.487 MD Anderson that you do see a lot

NOTE Confidence: 0.81704414

00:30:54.487 --> 00:30:56.790 of information that is important.

NOTE Confidence: 0.81704414

00:30:56.790 --> 00:30:58.278 Over standard digital subtraction

NOTE Confidence: 0.81704414

00:30:58.278 --> 00:30:59.766 angiography and back then,

NOTE Confidence: 0.81704414

00:30:59.770 --> 00:31:02.754 when we had very poor cone beam CT,

NOTE Confidence: 0.81704414

00:31:02.760 --> 00:31:05.904 it showed that we were able to impact

NOTE Confidence: 0.81704414

00:31:05.904 --> 00:31:08.190 the procedure in 19% of the cases.

NOTE Confidence: 0.81704414

00:31:08.190 --> 00:31:10.110 There's also now new software that

NOTE Confidence: 0.81704414

00:31:10.110 --> 00:31:12.459 helps precisely identify tumor feeders,

NOTE Confidence: 0.81704414

00:31:12.460 --> 00:31:14.692 so we're not just relying on

NOTE Confidence: 0.81704414

00:31:14.692 --> 00:31:15.808 standard DSA alone.

NOTE Confidence: 0.81704414

00:31:15.810 --> 00:31:19.167 And then we also with the pie at all,

NOTE Confidence: 0.81704414

00:31:19.170 --> 00:31:21.162 which isn't the same as with

NOTE Confidence: 0.81704414

00:31:21.162 --> 00:31:23.270 the other kinds of therapies.

NOTE Confidence: 0.81704414

00:31:23.270 --> 00:31:25.622 We can actually use this to immediately

NOTE Confidence: 0.81704414

00:31:25.622 --> 00:31:27.860 look at post procedure imaging.

NOTE Confidence: 0.81704414

00:31:27.860 --> 00:31:29.981 To show the benefit of the of

NOTE Confidence: 0.81704414

00:31:29.981 --> 00:31:32.126 the tumor targeting as well as

NOTE Confidence: 0.81704414

00:31:32.126 --> 00:31:33.686 having confirmation that you

NOTE Confidence: 0.81704414

00:31:33.686 --> 00:31:35.290 effectively treated the tumor.

NOTE Confidence: 0.8223492

00:31:37.440 --> 00:31:40.860 So here you see a tumor in. I said,

NOTE Confidence: 0.8223492

00:31:40.860 --> 00:31:43.900 once you fast here, let me go back.

NOTE Confidence: 0.80394745

00:31:46.940 --> 00:31:51.566 So in this case we have two HCC's in

NOTE Confidence: 0.80394745

00:31:51.566 --> 00:31:55.150 segments for a in segment 7 and what

NOTE Confidence: 0.80394745

00:31:55.150 --> 00:31:59.278 I want to show is a tumor sitting.

NOTE Confidence: 0.80394745

00:31:59.280 --> 00:32:00.540 Here. And here OK.

NOTE Confidence: 0.80394745

00:32:00.540 --> 00:32:03.361 And when you do the angio it's very

NOTE Confidence: 0.80394745

00:32:03.361 --> 00:32:05.935 unclear where these tumor feeders are.

NOTE Confidence: 0.80394745

00:32:05.940 --> 00:32:07.116 So you have one.

NOTE Confidence: 0.80394745

00:32:07.116 --> 00:32:08.586 It's definitely in the right,

NOTE Confidence: 0.80394745

00:32:08.590 --> 00:32:10.070 but you have one here,

NOTE Confidence: 0.80394745

00:32:10.070 --> 00:32:11.540 which is unclear if it's

NOTE Confidence: 0.80394745

00:32:11.540 --> 00:32:12.716 coming from the left,

NOTE Confidence: 0.80394745

00:32:12.720 --> 00:32:15.220 so you can so you can do a cone beam

NOTE Confidence: 0.80394745

00:32:15.298 --> 00:32:18.026 CT from the left and see no tumor

NOTE Confidence: 0.80394745

00:32:18.026 --> 00:32:20.173 vascularity and then you do it from

NOTE Confidence: 0.80394745

00:32:20.173 --> 00:32:22.455 the right and we can see a tumor

NOTE Confidence: 0.80394745

00:32:22.455 --> 00:32:24.225 there and then the tumor there.

NOTE Confidence: 0.80394745

00:32:24.230 --> 00:32:28.290 And now we know that we're in the right lobe.

NOTE Confidence: 0.80394745

00:32:28.290 --> 00:32:30.456 So after the procedure is over,

NOTE Confidence: 0.80394745

00:32:30.460 --> 00:32:32.672 we can see on a plane image

NOTE Confidence: 0.80394745

00:32:32.672 --> 00:32:34.790 or a flora scopic image.

NOTE Confidence: 0.80394745

00:32:34.790 --> 00:32:36.998 One tumor treated here one tumor

NOTE Confidence: 0.80394745

00:32:36.998 --> 00:32:39.478 treated here an on cone beam CT.

NOTE Confidence: 0.80394745

00:32:39.480 --> 00:32:42.490 You can see tumor here.

NOTE Confidence: 0.80394745

00:32:42.490 --> 00:32:43.039 In tumor here.

NOTE Confidence: 0.80394745

00:32:43.039 --> 00:32:44.137 So now we know that it

NOTE Confidence: 0.80394745

00:32:44.137 --> 00:32:45.269 was effectively treated.

NOTE Confidence: 0.8568363

00:32:47.780 --> 00:32:49.976 So this is a case that I did just

NOTE Confidence: 0.8568363

00:32:49.976 --> 00:32:52.214 last week and I thought it would

NOTE Confidence: 0.8568363

00:32:52.214 --> 00:32:54.783 be interesting to show 74 year old

NOTE Confidence: 0.8568363

00:32:54.783 --> 00:32:56.403 patient with alcoholic cirrhosis

NOTE Confidence: 0.8568363

00:32:56.403 --> 00:32:58.784 5.8 centimeter HCC in segment 7.

NOTE Confidence: 0.8568363

00:32:58.784 --> 00:33:01.500 This is the CT scan right here.

NOTE Confidence: 0.8568363

00:33:01.500 --> 00:33:04.548 This is a previous treatment area.

NOTE Confidence: 0.8568363

00:33:04.550 --> 00:33:06.038 We did the angiogram.

NOTE Confidence: 0.8568363

00:33:06.038 --> 00:33:08.270 We see the tumor up here.

NOTE Confidence: 0.79313654

00:33:10.760 --> 00:33:12.594 We then see I'm selective image here.

NOTE Confidence: 0.79313654

00:33:12.600 --> 00:33:14.895 So when we do the cone beam CT thinking

NOTE Confidence: 0.79313654

00:33:14.895 --> 00:33:17.067 that we may have had the whole thing,

NOTE Confidence: 0.79313654

00:33:17.070 --> 00:33:20.350 we're missing half the tumor.

NOTE Confidence: 0.79313654

00:33:20.350 --> 00:33:24.718 OK, so we treated the patient.

NOTE Confidence: 0.79313654

00:33:24.720 --> 00:33:26.785 And we see a basically a Half

NOTE Confidence: 0.79313654

00:33:26.785 --> 00:33:28.790 Moon where half of it's missing.

NOTE Confidence: 0.79313654

00:33:28.790 --> 00:33:32.734 So we even got into the other branch.

NOTE Confidence: 0.79313654

00:33:32.740 --> 00:33:35.340 C. Feeling of the tumor.

NOTE Confidence: 0.79313654

00:33:35.340 --> 00:33:38.156 And at the end we can see that

NOTE Confidence: 0.79313654

00:33:38.156 --> 00:33:40.357 the tumor is completely treated

NOTE Confidence: 0.79313654

00:33:40.357 --> 00:33:43.626 and then on final cone beam CT.

NOTE Confidence: 0.79313654

00:33:43.630 --> 00:33:46.384 There is complete embolization with lipiodol

NOTE Confidence: 0.79313654

00:33:46.384 --> 00:33:50.088 so you can see this is very important.

NOTE Confidence: 0.79313654

00:33:50.090 --> 00:33:52.421 And I just wanted to show that we have

NOTE Confidence: 0.79313654

00:33:52.421 --> 00:33:54.692 also imaging software that we can use

NOTE Confidence: 0.79313654

00:33:54.692 --> 00:33:56.779 to track these tumors very nicely.

NOTE Confidence: 0.79313654

00:33:56.780 --> 00:33:58.908 I don't want to get all details,

NOTE Confidence: 0.79313654

00:33:58.910 --> 00:34:00.846 but you can see that we have a

NOTE Confidence: 0.79313654

00:34:00.846 --> 00:34:02.635 road map simply goes straight to

NOTE Confidence: 0.79313654

00:34:02.635 --> 00:34:04.926 the tumor and that I think results

NOTE Confidence: 0.79313654

00:34:04.926 --> 00:34:07.104 in a much more effective therapy.

NOTE Confidence: 0.79313654

00:34:07.110 --> 00:34:11.169 And we published on this back in a 2019.

NOTE Confidence: 0.79313654

00:34:11.170 --> 00:34:14.660 When we look at treating

NOTE Confidence: 0.79313654

00:34:14.660 --> 00:34:16.056 with chemoembolization.

NOTE Confidence: 0.79313654

00:34:16.060 --> 00:34:19.244 We can see that you get much better

NOTE Confidence: 0.79313654

00:34:19.244 --> 00:34:21.744 local tumor progression and overall

NOTE Confidence: 0.79313654

00:34:21.744 --> 00:34:24.966 survival when combing CT is used.

NOTE Confidence: 0.79313654

00:34:24.970 --> 00:34:27.896 And then we look at adverse events.

NOTE Confidence: 0.79313654

00:34:27.900 --> 00:34:30.252 We always tell patients that this

NOTE Confidence: 0.79313654

00:34:30.252 --> 00:34:32.490 is a liver directed therapy.

NOTE Confidence: 0.79313654

00:34:32.490 --> 00:34:32.865 However,

NOTE Confidence: 0.79313654

00:34:32.865 --> 00:34:35.490 their study that came out of Johns

NOTE Confidence: 0.79313654

00:34:35.490 --> 00:34:38.083 Hopkins back in 2008 showed that you

NOTE Confidence: 0.79313654

00:34:38.083 --> 00:34:40.528 can get systemic effects from the

NOTE Confidence: 0.79313654

00:34:40.528 --> 00:34:42.936 chemoembolization or conventional tastes,

NOTE Confidence: 0.79313654

00:34:42.940 --> 00:34:46.284 and this is what led to the institution

NOTE Confidence: 0.79313654

00:34:46.284 --> 00:34:49.207 or development of drug eluting be tastes.

NOTE Confidence: 0.79313654

00:34:49.210 --> 00:34:50.690 So the idea here?

NOTE Confidence: 0.79313654

00:34:50.690 --> 00:34:52.910 Is that the chemotherapy is then

NOTE Confidence: 0.79313654

00:34:52.987 --> 00:34:55.519 loaded into beads and added to

NOTE Confidence: 0.79313654

00:34:55.519 --> 00:34:58.006 water soluble contrast and can act

NOTE Confidence: 0.79313654

00:34:58.006 --> 00:35:00.540 as a vector for drug delivery and

NOTE Confidence: 0.79313654

00:35:00.540 --> 00:35:02.806 embolic agent to block arterial

NOTE Confidence: 0.79313654

00:35:02.806 --> 00:35:06.310 blood flow or supply to the tumor?

NOTE Confidence: 0.79313654

00:35:06.310 --> 00:35:08.548 As we discussed.

NOTE Confidence: 0.79313654

00:35:08.550 --> 00:35:10.385 The actually just you're aware

NOTE Confidence: 0.79313654

00:35:10.385 --> 00:35:12.220 that Luppino has some limitations

NOTE Confidence: 0.79313654

00:35:12.286 --> 00:35:14.236 where their attention is variable,

NOTE Confidence: 0.79313654

00:35:14.240 --> 00:35:16.620 and it could wash out quite rapidly

NOTE Confidence: 0.79313654

00:35:16.620 --> 00:35:19.159 if we don't use those particles.

NOTE Confidence: 0.79313654

00:35:19.160 --> 00:35:21.440 And then, like I just showed,

NOTE Confidence: 0.79313654

00:35:21.440 --> 00:35:23.708 there could be some systemic toxicity.

NOTE Confidence: 0.79313654

00:35:23.710 --> 00:35:26.405 So with drug alluding beads you can

NOTE Confidence: 0.79313654

00:35:26.405 --> 00:35:28.718 get predictable retention and this can

NOTE Confidence: 0.79313654

00:35:28.718 --> 00:35:30.902 lead to overall less systemic toxicity,

NOTE Confidence: 0.79313654

00:35:30.910 --> 00:35:34.090 and this is just a case that I did awhile

NOTE Confidence: 0.79313654

00:35:34.169 --> 00:35:37.347 back showing a force .6 centimeter tumor,

NOTE Confidence: 0.79313654

00:35:37.350 --> 00:35:40.059 which we did with drug eluting beads.

NOTE Confidence: 0.79313654

00:35:40.060 --> 00:35:40.344 However,

NOTE Confidence: 0.79313654

00:35:40.344 --> 00:35:42.616 you can't see at the end of the

NOTE Confidence: 0.79313654

00:35:42.616 --> 00:35:44.498 procedure that the tumor was treated,

NOTE Confidence: 0.79313654

00:35:44.500 --> 00:35:46.252 because there is no iodine in

NOTE Confidence: 0.79313654

00:35:46.252 --> 00:35:48.061 these particles and then this is

NOTE Confidence: 0.79313654

00:35:48.061 --> 00:35:49.526 what it looks like afterwards.

NOTE Confidence: 0.79313654

00:35:49.530 --> 00:35:51.595 So this is just a couple of.

NOTE Confidence: 0.79313654

00:35:51.600 --> 00:35:54.060 I have a couple of studies

NOTE Confidence: 0.79313654

00:35:54.060 --> 00:35:56.040 which show the benefit of.

NOTE Confidence: 0.79313654

00:35:56.040 --> 00:35:57.320 Of drug eluting beads.

NOTE Confidence: 0.79313654

00:35:57.320 --> 00:36:00.399 I don't want to get into all the details,

NOTE Confidence: 0.79313654

00:36:00.400 --> 00:36:02.075 but just show that there

NOTE Confidence: 0.79313654

00:36:02.075 --> 00:36:03.080 are promising results,

NOTE Confidence: 0.79313654

00:36:03.080 --> 00:36:05.264 but in my personal opinion I am much

NOTE Confidence: 0.79313654

00:36:05.264 --> 00:36:07.327 more a fan of using conventional

NOTE Confidence: 0.79313654

00:36:07.327 --> 00:36:09.499 rather than dip tastes and then

NOTE Confidence: 0.79313654

00:36:09.568 --> 00:36:11.704 this is just a recent study

NOTE Confidence: 0.79313654

00:36:11.704 --> 00:36:13.766 published in radiology which is a

NOTE Confidence: 0.79313654

00:36:13.766 --> 00:36:15.356 prospective single arm study which

NOTE Confidence: 0.79313654

00:36:15.356 --> 00:36:17.544 also shows the benefit of idarubicin

NOTE Confidence: 0.79313654

00:36:17.544 --> 00:36:19.878 alluding beads for the treatment of

NOTE Confidence: 0.79313654

00:36:19.878 --> 00:36:21.688 patients with unreflectively CC.

NOTE Confidence: 0.79313654

00:36:21.690 --> 00:36:23.760 So there's been a lot of

NOTE Confidence: 0.79313654

00:36:23.760 --> 00:36:25.140 interest in recent years

NOTE Confidence: 0.8352394

00:36:25.218 --> 00:36:26.769 in radio embolization.

NOTE Confidence: 0.8352394

00:36:26.770 --> 00:36:29.308 Here we have an implanted radiation

NOTE Confidence: 0.8352394

00:36:29.308 --> 00:36:31.404 source that's directly sent to

NOTE Confidence: 0.8352394

00:36:31.404 --> 00:36:33.414 the tumors via the attic artery.

NOTE Confidence: 0.8352394

00:36:33.420 --> 00:36:35.766 Use Yttrium 90 as the source,

NOTE Confidence: 0.8352394

00:36:35.770 --> 00:36:38.619 which is a beta emitter which penetrates

NOTE Confidence: 0.8352394

00:36:38.619 --> 00:36:40.850 only 2.5 millimeters in the tissue.

NOTE Confidence: 0.8352394

00:36:40.850 --> 00:36:42.805 There are glass and resin

NOTE Confidence: 0.8352394

00:36:42.805 --> 00:36:43.587 microspheres available.

NOTE Confidence: 0.8352394

00:36:43.590 --> 00:36:46.320 These are thera spheres or Sir spheres,

NOTE Confidence: 0.8352394

00:36:46.320 --> 00:36:49.434 but I just wanted to make sure you're all

NOTE Confidence: 0.8352394

00:36:49.434 --> 00:36:52.439 aware that these are not interchangeable.

NOTE Confidence: 0.8352394

00:36:52.440 --> 00:36:54.824 They're very different products

NOTE Confidence: 0.8352394

00:36:54.824 --> 00:36:57.804 and they have very different.

NOTE Confidence: 0.8352394

00:36:57.810 --> 00:37:00.120 Characteristics the main idea, I guess,

NOTE Confidence: 0.8352394

00:37:00.120 --> 00:37:02.612 is that the glass beads are have

NOTE Confidence: 0.8352394

00:37:02.612 --> 00:37:05.129 a much smaller number of spheres,

NOTE Confidence: 0.8352394

00:37:05.130 --> 00:37:07.818 so each year themselves is much hotter.

NOTE Confidence: 0.8352394

00:37:07.820 --> 00:37:11.670 So if you want to treat a much larger area,

NOTE Confidence: 0.8352394

00:37:11.670 --> 00:37:13.788 you may need to use something

NOTE Confidence: 0.8352394

00:37:13.788 --> 00:37:16.110 which is much more embolic than

NOTE Confidence: 0.8352394

00:37:16.110 --> 00:37:18.594 than than these very small ones.

NOTE Confidence: 0.8352394

00:37:18.600 --> 00:37:19.370 But again,

NOTE Confidence: 0.8352394

00:37:19.370 --> 00:37:22.065 these have much less activity per sphere,

NOTE Confidence: 0.8352394

00:37:22.070 --> 00:37:25.526 but here you get a much more minimal embolic,

NOTE Confidence: 0.8352394

00:37:25.530 --> 00:37:27.590 which is much more like

NOTE Confidence: 0.8352394

00:37:27.590 --> 00:37:28.826 real radiation therapy.

NOTE Confidence: 0.8352394

00:37:28.830 --> 00:37:31.955 Whereas the Sir spheres are

NOTE Confidence: 0.8352394

00:37:31.955 --> 00:37:33.830 more like embolization.

NOTE Confidence: 0.8352394

00:37:33.830 --> 00:37:36.071 So this is just a case of a 92

NOTE Confidence: 0.8352394

00:37:36.071 --> 00:37:38.348 year old female with multifocal HCC

NOTE Confidence: 0.8352394

00:37:38.348 --> 00:37:40.950 who actually had a tumor rupture.

NOTE Confidence: 0.8352394

00:37:40.950 --> 00:37:43.782 Um, here in in segment 8 with the

NOTE Confidence: 0.8352394

00:37:43.782 --> 00:37:45.149 satellite tumor as well,

NOTE Confidence: 0.8352394

00:37:45.150 --> 00:37:46.550 and as we know,

NOTE Confidence: 0.8352394

00:37:46.550 --> 00:37:48.300 when patients have tumor rupture,

NOTE Confidence: 0.8352394

00:37:48.300 --> 00:37:50.400 they have a very dismal prognosis.

NOTE Confidence: 0.8352394

00:37:50.400 --> 00:37:51.492 So like I said,

NOTE Confidence: 0.8352394

00:37:51.492 --> 00:37:54.399 this is a 92 year old female an because

NOTE Confidence: 0.8352394

00:37:54.399 --> 00:37:57.185 I did this with with therasphere for

NOTE Confidence: 0.8352394

00:37:57.266 --> 00:37:59.849 example it was a micro embolic Ann.

NOTE Confidence: 0.8352394

00:37:59.850 --> 00:38:01.950 I treated her as an outpatient.

NOTE Confidence: 0.8352394

00:38:01.950 --> 00:38:04.050 OK, so here is the tumor.

NOTE Confidence: 0.8352394

00:38:04.050 --> 00:38:05.800 We do a mapping study,

NOTE Confidence: 0.8352394

00:38:05.800 --> 00:38:07.550 so this is the difference.

NOTE Confidence: 0.8352394

00:38:07.550 --> 00:38:09.300 When you do the other

NOTE Confidence: 0.8352394

00:38:09.300 --> 00:38:10.350 kinds of chemoembolization,

NOTE Confidence: 0.8352394

00:38:10.350 --> 00:38:13.278 you basically take the product off the shelf.

NOTE Confidence: 0.8352394

00:38:13.280 --> 00:38:15.470 At the time of the procedure,

NOTE Confidence: 0.8352394

00:38:15.470 --> 00:38:15.768 however,

NOTE Confidence: 0.8352394

00:38:15.768 --> 00:38:16.364 with 190,

NOTE Confidence: 0.8352394

00:38:16.364 --> 00:38:18.925 you really have to map out the patients

NOTE Confidence: 0.8352394

00:38:18.925 --> 00:38:21.816 to make sure that you're not getting

NOTE Confidence: 0.8352394

00:38:21.816 --> 00:38:23.453 nontarget embolization to other

NOTE Confidence: 0.8352394

00:38:23.453 --> 00:38:25.685 areas which include extra product sites,

NOTE Confidence: 0.8352394

00:38:25.690 --> 00:38:27.880 and you also have to calculate

NOTE Confidence: 0.8352394

00:38:27.880 --> 00:38:29.340 a lunch on fraction,

NOTE Confidence: 0.8352394

00:38:29.340 --> 00:38:31.965 which is how much of the material

NOTE Confidence: 0.8352394

00:38:31.965 --> 00:38:35.150 gets to the lungs because there exist

NOTE Confidence: 0.8352394

00:38:35.150 --> 00:38:38.102 you heard earlier there are very.

NOTE Confidence: 0.8352394

00:38:38.110 --> 00:38:40.168 Small communication between artery and veins,

NOTE Confidence: 0.8352394

00:38:40.170 --> 00:38:43.257 and therefore if you give too high a dose,

NOTE Confidence: 0.8352394

00:38:43.260 --> 00:38:45.306 you can actually get pulmonary fibrosis.

NOTE Confidence: 0.8352394

00:38:45.310 --> 00:38:47.396 So in this patient we were able

NOTE Confidence: 0.8352394

00:38:47.396 --> 00:38:49.502 to see that the radiation went

NOTE Confidence: 0.8352394

00:38:49.502 --> 00:38:52.169 exactly to where we wanted to tumor.

NOTE Confidence: 0.8352394

00:38:52.170 --> 00:38:54.914 Here we see the patient for years later,

NOTE Confidence: 0.8352394

00:38:54.920 --> 00:38:57.146 so this patient lived to 98 years

NOTE Confidence: 0.8352394

00:38:57.146 --> 00:38:59.620 old and this again is the fact that

NOTE Confidence: 0.8352394

00:38:59.620 --> 00:39:02.041 I treated a 92 year old patient

NOTE Confidence: 0.8352394

00:39:02.041 --> 00:39:03.837 with an outpatient therapy.

NOTE Confidence: 0.8352394

00:39:03.840 --> 00:39:06.906 I kind of thought was pretty amazed.

NOTE Confidence: 0.8352394

00:39:06.910 --> 00:39:09.304 These are the toxicities that can

NOTE Confidence: 0.8352394

00:39:09.304 --> 00:39:12.327 occur by doing very good cone beam CT.

NOTE Confidence: 0.8352394

00:39:12.330 --> 00:39:13.678 This actually highlights the

NOTE Confidence: 0.8352394

00:39:13.678 --> 00:39:16.193 reason for it that we can reduce

NOTE Confidence: 0.8352394

00:39:16.193 --> 00:39:18.773 the toxicities by doing all these

NOTE Confidence: 0.8352394

00:39:18.773 --> 00:39:20.063 advanced imaging techniques.

NOTE Confidence: 0.8352394

00:39:20.070 --> 00:39:22.000 This was just the case.

NOTE Confidence: 0.8352394

00:39:22.000 --> 00:39:24.984 I want to show it with the utilization

NOTE Confidence: 0.8352394

00:39:24.984 --> 00:39:27.712 of cone beam CT where on cone beam

NOTE Confidence: 0.8352394

00:39:27.712 --> 00:39:30.879 CT we see in this patient a retro

NOTE Confidence: 0.8352394

00:39:30.879 --> 00:39:33.603 portal artery that on mapping study

NOTE Confidence: 0.8352394

00:39:33.610 --> 00:39:37.355 we can see some technetium 99 M.

NOTE Confidence: 0.8365445

00:39:37.360 --> 00:39:39.496 Maa actually getting into the duodenum.

NOTE Confidence: 0.8365445

00:39:39.500 --> 00:39:42.028 So if you were not care if you

NOTE Confidence: 0.8365445

00:39:42.028 --> 00:39:44.498 were if you were not careful,

NOTE Confidence: 0.8365445

00:39:44.500 --> 00:39:46.774 you would actually send radioactivity down

NOTE Confidence: 0.8365445

00:39:46.774 --> 00:39:49.499 there and that would result in an ulcer.

NOTE Confidence: 0.8365445

00:39:49.500 --> 00:39:52.908 So what I want to also highlight here.

NOTE Confidence: 0.8365445

00:39:52.910 --> 00:39:55.997 Is that? Now a recent article came

NOTE Confidence: 0.8365445

00:39:55.997 --> 00:39:58.770 out talking about recommendations.

NOTE Confidence: 0.8365445

00:39:58.770 --> 00:40:00.252 A standardized recommend.

NOTE Confidence: 0.8365445

00:40:00.252 --> 00:40:02.728 Nations 4Y-90, in this case,

NOTE Confidence: 0.8365445

00:40:02.728 --> 00:40:05.704 resin microspheres and what they say

NOTE Confidence: 0.8365445

00:40:05.704 --> 00:40:09.387 is that if you do not use cone beam,

NOTE Confidence: 0.8365445

00:40:09.390 --> 00:40:12.288 CT or advanced imaging techniques that

NOTE Confidence: 0.8365445

00:40:12.288 --> 00:40:15.248 that companies or vendors that are

NOTE Confidence: 0.8365445

00:40:15.248 --> 00:40:17.623 supporting clinical trials won't actually

NOTE Confidence: 0.8365445

00:40:17.623 --> 00:40:21.165 want them as part of one of their sites.

NOTE Confidence: 0.8365445

00:40:21.170 --> 00:40:24.682 OK, this just shows some data from Europe

NOTE Confidence: 0.8365445

00:40:24.682 --> 00:40:27.848 on those patients that are all within

NOTE Confidence: 0.8365445

00:40:27.848 --> 00:40:31.189 all across all the PC else stages.

NOTE Confidence: 0.8365445

00:40:31.190 --> 00:40:33.190 I'm in this particular study.

NOTE Confidence: 0.8365445

00:40:33.190 --> 00:40:36.040 You can see the median overall

NOTE Confidence: 0.8365445

00:40:36.040 --> 00:40:38.610 Survival's in a PCL CAB&C.

NOTE Confidence: 0.8365445

00:40:38.610 --> 00:40:40.182 Residents, although common,

NOTE Confidence: 0.8365445

00:40:40.182 --> 00:40:43.678 are fatigue, nausea, vomiting and fever.

NOTE Confidence: 0.8365445

00:40:43.678 --> 00:40:48.043 There's the GI ulcers are very uncommon

NOTE Confidence: 0.8365445

00:40:48.043 --> 00:40:52.110 and as well as grade three biliary.

NOTE Confidence: 0.8365445

00:40:52.110 --> 00:40:53.590 Issues.

NOTE Confidence: 0.8365445

00:40:53.590 --> 00:40:56.649 And you know one of the most

NOTE Confidence: 0.8365445

00:40:56.649 --> 00:40:58.540 prolific users of Y-90.

NOTE Confidence: 0.8365445

00:40:58.540 --> 00:41:00.790 This is North data from

NOTE Confidence: 0.8365445

00:41:00.790 --> 00:41:01.690 Northwestern University,

NOTE Confidence: 0.8365445

00:41:01.690 --> 00:41:04.384 where they looked at their first

NOTE Confidence: 0.8365445

00:41:04.384 --> 00:41:07.540 1000 patients over a 15 year period,

NOTE Confidence: 0.8365445

00:41:07.540 --> 00:41:10.240 and you can see all the

NOTE Confidence: 0.8365445

00:41:10.240 --> 00:41:11.590 classification systems, child,

NOTE Confidence: 0.8365445

00:41:11.590 --> 00:41:12.490 child, Pugh,

NOTE Confidence: 0.8365445

00:41:12.490 --> 00:41:14.740 AB&C where you see BCLCAB&C,

NOTE Confidence: 0.8365445

00:41:14.740 --> 00:41:16.945 and they've even treated patients

NOTE Confidence: 0.8365445

00:41:16.945 --> 00:41:20.140 with PC LCD and then with those

NOTE Confidence: 0.8365445

00:41:20.140 --> 00:41:22.840 patients that had child Pugh A&B.

NOTE Confidence: 0.8365445

00:41:22.840 --> 00:41:26.428 These are the overall survival rates.

NOTE Confidence: 0.8365445

00:41:26.430 --> 00:41:28.824 And you can see they have

NOTE Confidence: 0.8365445

00:41:28.824 --> 00:41:30.420 very low adverse events.

NOTE Confidence: 0.8365445

00:41:30.420 --> 00:41:32.365 So based on their experience

NOTE Confidence: 0.8365445

00:41:32.365 --> 00:41:34.810 with 1000 patients over 15 years,

NOTE Confidence: 0.8365445

00:41:34.810 --> 00:41:36.895 they use radio embolization as

NOTE Confidence: 0.8365445

00:41:36.895 --> 00:41:38.563 their primary treatment option

NOTE Confidence: 0.8365445

00:41:38.563 --> 00:41:40.399 and then this just shows.

NOTE Confidence: 0.8365445

00:41:40.400 --> 00:41:42.764 And this is something that I

NOTE Confidence: 0.8365445

00:41:42.764 --> 00:41:44.816 think we basically treat probably

NOTE Confidence: 0.8365445

00:41:44.816 --> 00:41:47.174 less than I think we should.

NOTE Confidence: 0.8365445

00:41:47.180 --> 00:41:49.394 We start tumor board is patients

NOTE Confidence: 0.8365445

00:41:49.394 --> 00:41:51.970 that have portal vein tumor thrombus.

NOTE Confidence: 0.8365445

00:41:51.970 --> 00:41:54.448 This just shows the overall benefit

NOTE Confidence: 0.8365445

00:41:54.448 --> 00:41:56.889 of those patients that with Y-90.

NOTE Confidence: 0.8365445

00:41:56.890 --> 00:41:58.735 And I also believe conventional

NOTE Confidence: 0.8365445

00:41:58.735 --> 00:42:00.580 tastes do a good job,

NOTE Confidence: 0.8365445

00:42:00.580 --> 00:42:03.905 at least getting into the tumor vasculature

NOTE Confidence: 0.8365445

00:42:03.905 --> 00:42:07.018 of these portal vein tumor thrombus.

NOTE Confidence: 0.8365445

00:42:07.020 --> 00:42:08.732 They're having some advanced

NOTE Confidence: 0.8365445

00:42:08.732 --> 00:42:10.444 radio with embolization concepts.

NOTE Confidence: 0.8365445

00:42:10.450 --> 00:42:12.170 When we first started

NOTE Confidence: 0.8365445

00:42:12.170 --> 00:42:13.460 doing radio embolization,

NOTE Confidence: 0.8365445

00:42:13.460 --> 00:42:15.600 patients got whole liver infusions.

NOTE Confidence: 0.8365445

00:42:15.600 --> 00:42:16.017 However,

NOTE Confidence: 0.8365445

00:42:16.017 --> 00:42:17.685 overtime with patients getting

NOTE Confidence: 0.8365445

00:42:17.685 --> 00:42:19.770 going into liver failure and

NOTE Confidence: 0.8365445

00:42:19.832 --> 00:42:21.608 having really severe fatigue,

NOTE Confidence: 0.8365445

00:42:21.610 --> 00:42:24.606 it's turned into a originally low bar.

NOTE Confidence: 0.8365445

00:42:24.610 --> 00:42:25.394 Infusions OK,

NOTE Confidence: 0.8365445

00:42:25.394 --> 00:42:27.746 which you so from here to

NOTE Confidence: 0.8365445

00:42:27.746 --> 00:42:29.760 here and then overtime.

NOTE Confidence: 0.8365445

00:42:29.760 --> 00:42:33.008 The idea was that we can maybe get

NOTE Confidence: 0.8365445

00:42:33.008 --> 00:42:35.272 segmental infusions and then ultimately

NOTE Confidence: 0.8365445

00:42:35.272 --> 00:42:38.026 get the infusion directly into the.

NOTE Confidence: 0.8365445

00:42:38.030 --> 00:42:39.458 Into the tumor,

NOTE Confidence: 0.8365445

00:42:39.458 --> 00:42:42.314 provided that there is a single

NOTE Confidence: 0.8365445

00:42:42.314 --> 00:42:45.467 or maybe two feeding arteries.

NOTE Confidence: 0.8365445

00:42:45.470 --> 00:42:48.270 So here we talk about radio radiation,

NOTE Confidence: 0.8365445

00:42:48.270 --> 00:42:48.888 lobectomy OK,

NOTE Confidence: 0.8365445

00:42:48.888 --> 00:42:51.360 and this is a way that we can

NOTE Confidence: 0.8365445

00:42:51.433 --> 00:42:53.445 hypertrophied the liver prior

NOTE Confidence: 0.8365445

00:42:53.445 --> 00:42:55.960 to resection while still keeping

NOTE Confidence: 0.8365445

00:42:55.960 --> 00:42:57.469 control of the tumor.

NOTE Confidence: 0.8365445

00:42:57.470 --> 00:42:59.950 So the idea here is that we can

NOTE Confidence: 0.8365445

00:42:59.950 --> 00:43:01.713 generate future liver remnant

NOTE Confidence: 0.8365445

00:43:01.713 --> 00:43:03.865 hypertrophie that permit resection,

NOTE Confidence: 0.8365445

00:43:03.870 --> 00:43:06.670 allowing for a biological test of time.

NOTE Confidence: 0.8365445

00:43:06.670 --> 00:43:09.470 And as you may have seen from

NOTE Confidence: 0.8365445

00:43:09.470 --> 00:43:10.670 the previous patient,

NOTE Confidence: 0.8365445

00:43:10.670 --> 00:43:13.112 the previous slide we can permit

NOTE Confidence: 0.8365445

00:43:13.112 --> 00:43:15.212 patients with portal vein tumor

NOTE Confidence: 0.8365445

00:43:15.212 --> 00:43:17.977 thrombus to maybe be converted to even.

NOTE Confidence: 0.8337787

00:43:17.980 --> 00:43:19.688 Being resectable the pathophysiology

NOTE Confidence: 0.8337787

00:43:19.688 --> 00:43:22.715 of this is that you are getting

NOTE Confidence: 0.8337787

00:43:22.715 --> 00:43:25.025 some scarring and fibrosis of the

NOTE Confidence: 0.8337787

00:43:25.025 --> 00:43:27.819 liver in the side that was treated,

NOTE Confidence: 0.8337787

00:43:27.820 --> 00:43:30.208 and therefore you're getting compared to

NOTE Confidence: 0.8337787

00:43:30.208 --> 00:43:32.740 Tori hypertrophy of the untreated low.

NOTE Confidence: 0.8337787

00:43:32.740 --> 00:43:35.560 That being said, the treatment changes

NOTE Confidence: 0.8337787

00:43:35.560 --> 00:43:38.269 are comparable to portal vein EMBO.

NOTE Confidence: 0.8337787

00:43:38.270 --> 00:43:41.158 I'll beat it. Invite at a slightly lower,

NOTE Confidence: 0.8337787

00:43:41.160 --> 00:43:43.170 slower way, but it does have

NOTE Confidence: 0.8337787

00:43:43.170 --> 00:43:45.130 the benefit of tumor control,

NOTE Confidence: 0.8337787

00:43:45.130 --> 00:43:46.358 which portal embolization doesn't,

NOTE Confidence: 0.8337787

00:43:46.358 --> 00:43:48.200 and then we can talk about

NOTE Confidence: 0.8337787

00:43:48.252 --> 00:43:49.460 radiation segmentectomy,

NOTE Confidence: 0.8337787

00:43:49.460 --> 00:43:51.326 which is directly getting which is

NOTE Confidence: 0.8337787

00:43:51.326 --> 00:43:53.789 supposed to be a curative treatment,

NOTE Confidence: 0.8337787

00:43:53.790 --> 00:43:54.858 similar to ablation,

NOTE Confidence: 0.8337787

00:43:54.858 --> 00:43:57.350 where you treat up to two panic

NOTE Confidence: 0.8337787

00:43:57.426 --> 00:43:59.206 segments with a low bardo.

NOTE Confidence: 0.8337787

00:43:59.210 --> 00:44:01.418 So you're basically taking this large

NOTE Confidence: 0.8337787

00:44:01.418 --> 00:44:04.259 dose that you do for the whole lobe,

NOTE Confidence: 0.8337787

00:44:04.260 --> 00:44:07.908 and putting it into one or two segments.

NOTE Confidence: 0.8337787

00:44:07.910 --> 00:44:10.680 OK, you get much higher.

NOTE Confidence: 0.8509198

00:44:13.140 --> 00:44:15.135 Active activity to each of those areas

NOTE Confidence: 0.8509198

00:44:15.135 --> 00:44:17.568 and in some cases it's been adopted

NOTE Confidence: 0.8509198

00:44:17.568 --> 00:44:19.468 as first line transarterial therapy.

NOTE Confidence: 0.8509198

00:44:19.470 --> 00:44:22.158 So the idea here that is that it

NOTE Confidence: 0.8509198

00:44:22.158 --> 00:44:24.129 really needs to. In my opinion,

NOTE Confidence: 0.8509198

00:44:24.129 --> 00:44:26.460 it really needs to be more validated,

NOTE Confidence: 0.8509198

00:44:26.460 --> 00:44:29.421 but you can see from this case that you're

NOTE Confidence: 0.8509198

00:44:29.421 --> 00:44:32.120 placing the catheter right up to the tumor.

NOTE Confidence: 0.8509198

00:44:32.120 --> 00:44:34.292 The tumor here is completely hot

NOTE Confidence: 0.8509198

00:44:34.292 --> 00:44:37.022 and then after six weeks later you

NOTE Confidence: 0.8509198

00:44:37.022 --> 00:44:39.434 see complete necrosis of the tumor.

NOTE Confidence: 0.8509198

00:44:39.440 --> 00:44:41.967 So I also wanted to focus on

NOTE Confidence: 0.8509198

00:44:41.967 --> 00:44:43.050 portal vein embolization.

NOTE Confidence: 0.8509198

00:44:43.050 --> 00:44:45.216 This is a transvenous therapy supportively,

NOTE Confidence: 0.8509198

00:44:45.220 --> 00:44:47.900 and embolization is is that it's a way

NOTE Confidence: 0.8509198

00:44:47.900 --> 00:44:50.285 of redirecting portal blood flow to the

NOTE Confidence: 0.8509198

00:44:50.285 --> 00:44:52.807 future liver remnant and by doing so

NOTE Confidence: 0.8509198

00:44:52.807 --> 00:44:55.237 could initiate hypertrophy of the non

NOTE Confidence: 0.8509198

00:44:55.237 --> 00:44:57.486 embolize segments and by doing that

NOTE Confidence: 0.8509198

00:44:57.486 --> 00:44:58.922 can reduce perioperative complications

NOTE Confidence: 0.8509198

00:44:58.922 --> 00:45:01.406 such that we can increase the number

NOTE Confidence: 0.8509198

00:45:01.406 --> 00:45:03.116 of potential surgical candidates who

NOTE Confidence: 0.8509198

00:45:03.179 --> 00:45:05.399 have what we call marginal anticipated

NOTE Confidence: 0.8509198

00:45:05.399 --> 00:45:06.879 future liver remnant volumes.

NOTE Confidence: 0.8509198

00:45:06.880 --> 00:45:09.456 We can also achieve looks like similar.

NOTE Confidence: 0.8509198

00:45:09.460 --> 00:45:10.312 Survival rates surgical

NOTE Confidence: 0.8509198

00:45:10.312 --> 00:45:11.448 patients not requiring PV.

NOTE Confidence: 0.8509198

00:45:11.450 --> 00:45:12.582 Now Kevin Billingslea spoke

NOTE Confidence: 0.8509198

00:45:12.582 --> 00:45:13.997 about this a month ago,

NOTE Confidence: 0.8509198

00:45:14.000 --> 00:45:16.840 so I didn't want to focus too much on it.

NOTE Confidence: 0.8509198

00:45:16.840 --> 00:45:19.441 But this is just a case of a patient

NOTE Confidence: 0.8509198

00:45:19.441 --> 00:45:22.268 with HTC 10 centimeter solitaire E mass.

NOTE Confidence: 0.8509198

00:45:22.270 --> 00:45:24.974 But you can see here we perform volumetry

NOTE Confidence: 0.8509198

00:45:24.974 --> 00:45:27.000 in patients that have cirrhosis,

NOTE Confidence: 0.8509198

00:45:27.000 --> 00:45:28.820 but normal underlying liver function.

NOTE Confidence: 0.8509198

00:45:28.820 --> 00:45:31.732 We need about 40% of the remaining liver

NOTE Confidence: 0.8509198

00:45:31.732 --> 00:45:34.280 after surgery, so this patient had 33%.

NOTE Confidence: 0.8509198

00:45:34.280 --> 00:45:36.848 I don't want to get into all the

NOTE Confidence: 0.8509198

00:45:36.848 --> 00:45:39.379 like how you measure it exactly.

NOTE Confidence: 0.8509198

00:45:39.380 --> 00:45:41.928 It's kind of beyond the scope here,

NOTE Confidence: 0.8509198

00:45:41.930 --> 00:45:43.745 but basically this patient did

NOTE Confidence: 0.8509198

00:45:43.745 --> 00:45:45.197 not have sufficient liver.

NOTE Confidence: 0.8509198

00:45:45.200 --> 00:45:46.660 A sufficient anticipated future

NOTE Confidence: 0.8509198

00:45:46.660 --> 00:45:47.390 liver remnant.

NOTE Confidence: 0.8509198

00:45:47.390 --> 00:45:49.210 So this patient was considered

NOTE Confidence: 0.8509198

00:45:49.210 --> 00:45:51.030 a candidate for right Pve.

NOTE Confidence: 0.8509198

00:45:51.030 --> 00:45:52.598 We do write PVE,

NOTE Confidence: 0.8509198

00:45:52.598 --> 00:45:53.774 we do Pve.

NOTE Confidence: 0.8509198

00:45:53.780 --> 00:45:55.405 Cricket Aneus Lee where you

NOTE Confidence: 0.8509198

00:45:55.405 --> 00:45:57.030 puncture into the right portal

NOTE Confidence: 0.8509198

00:45:57.095 --> 00:45:58.779 vein and ipsilateral approach.

NOTE Confidence: 0.8509198

00:45:58.780 --> 00:46:01.034 We infuse particles and coils and we

NOTE Confidence: 0.8509198

00:46:01.034 --> 00:46:03.212 can see that there's complete diversion

NOTE Confidence: 0.8509198

00:46:03.212 --> 00:46:06.280 of flow from the right into the left.

NOTE Confidence: 0.8509198

00:46:06.280 --> 00:46:08.422 We do the volumes and this

NOTE Confidence: 0.8509198

00:46:08.422 --> 00:46:09.850 patient increased their size,

NOTE Confidence: 0.8509198

00:46:09.850 --> 00:46:12.546 their liver and 18% so this patient was

NOTE Confidence: 0.8509198

00:46:12.546 --> 00:46:14.837 considered a candidate for right hip.

NOTE Confidence: 0.8509198

00:46:14.840 --> 00:46:17.339 Protect me and this is how the

NOTE Confidence: 0.8509198

00:46:17.339 --> 00:46:18.410 liberal looks intra,

NOTE Confidence: 0.8509198

00:46:18.410 --> 00:46:19.670 procedurally or interactions

NOTE Confidence: 0.8509198

00:46:19.670 --> 00:46:21.770 intraoperatively where you see a

NOTE Confidence: 0.8509198

00:46:21.770 --> 00:46:23.910 very atrophic right lobe and a very.

NOTE Confidence: 0.8509198

00:46:23.910 --> 00:46:28.179 Hypertrophic very pinkish.

NOTE Confidence: 0.8509198

00:46:28.180 --> 00:46:30.862 Left lobe so this patient underwent

NOTE Confidence: 0.8509198

00:46:30.862 --> 00:46:33.230 a very uneventful hospital course

NOTE Confidence: 0.8509198

00:46:33.230 --> 00:46:34.240 after surgery,

NOTE Confidence: 0.8509198

00:46:34.240 --> 00:46:37.030 but developed recurrence at five years,

NOTE Confidence: 0.8509198

00:46:37.030 --> 00:46:39.382 but then underwent

NOTE Confidence: 0.8509198

00:46:39.382 --> 00:46:40.950 successful transplantation.

NOTE Confidence: 0.8509198

00:46:40.950 --> 00:46:42.539 A little bit of data on this.

NOTE Confidence: 0.7872134

00:46:44.610 --> 00:46:46.570 This is the only prospective

NOTE Confidence: 0.7872134

00:46:46.570 --> 00:46:48.951 clinical trial looking at PVE and

NOTE Confidence: 0.7872134

00:46:48.951 --> 00:46:51.039 in the setting of injured liver.

NOTE Confidence: 0.7872134

00:46:51.040 --> 00:46:53.866 It's the only clinical trial that

NOTE Confidence: 0.7872134

00:46:53.866 --> 00:46:57.059 will be done because there's those.

NOTE Confidence: 0.7872134

00:46:57.060 --> 00:46:58.748 Surgeons and interventional radiologist

NOTE Confidence: 0.7872134

00:46:58.748 --> 00:47:01.677 who believe that it's unethical to submit

NOTE Confidence: 0.7872134

00:47:01.677 --> 00:47:03.693 to subjective patient to a procedure

NOTE Confidence: 0.7872134

00:47:03.693 --> 00:47:05.679 that they think or I should say,

NOTE Confidence: 0.7872134

00:47:05.680 --> 00:47:08.352 not subject to patients to a procedure that

NOTE Confidence: 0.7872134

00:47:08.352 --> 00:47:10.700 those surgeons and radiologists think work.

NOTE Confidence: 0.7872134

00:47:10.700 --> 00:47:13.010 And then if a patient dies because

NOTE Confidence: 0.7872134

00:47:13.010 --> 00:47:15.009 they went into liver failure,

NOTE Confidence: 0.7872134

00:47:15.010 --> 00:47:16.810 that will be a problem.

NOTE Confidence: 0.7872134

00:47:16.810 --> 00:47:19.834 So this just shows how using

NOTE Confidence: 0.7872134

00:47:19.834 --> 00:47:21.346 Portal vein embolization.

NOTE Confidence: 0.7872134

00:47:21.350 --> 00:47:22.610 Actually improves patients

NOTE Confidence: 0.7872134

00:47:22.610 --> 00:47:23.450 postoperative course.

NOTE Confidence: 0.7872134

00:47:23.450 --> 00:47:26.996 This was a study that we did at MD

NOTE Confidence: 0.7872134

00:47:26.996 --> 00:47:29.905 Anderson where we see that all of

NOTE Confidence: 0.7872134

00:47:29.905 --> 00:47:32.496 the deaths occur in those patients

NOTE Confidence: 0.7872134

00:47:32.496 --> 00:47:35.576 that did not have Pve and then

NOTE Confidence: 0.7872134

00:47:35.576 --> 00:47:38.204 in terms of survival outcomes.

NOTE Confidence: 0.7872134

00:47:38.204 --> 00:47:39.296 We have,

NOTE Confidence: 0.7872134

00:47:39.300 --> 00:47:41.743 you can see that there are pretty

NOTE Confidence: 0.7872134

00:47:41.743 --> 00:47:43.945 similar those patients to those patients

NOTE Confidence: 0.7872134

00:47:43.945 --> 00:47:46.479 that have deviated to those that didn't.

NOTE Confidence: 0.7872134

00:47:46.480 --> 00:47:48.490 Now what we need to understand

NOTE Confidence: 0.7872134

00:47:48.490 --> 00:47:50.548 is that those patients that did

NOTE Confidence: 0.7872134

00:47:50.548 --> 00:47:52.486 not I should say that received

NOTE Confidence: 0.7872134

00:47:52.486 --> 00:47:54.020 portal vein embolization.

NOTE Confidence: 0.7872134

00:47:54.020 --> 00:47:55.452 Those patients typically would

NOTE Confidence: 0.7872134

00:47:55.452 --> 00:47:58.015 not have been a certain would not

NOTE Confidence: 0.7872134

00:47:58.015 --> 00:47:59.755 have been a surgical candidate,

NOTE Confidence: 0.7872134

00:47:59.760 --> 00:48:01.192 would have probably undergone

NOTE Confidence: 0.7872134

00:48:01.192 --> 00:48:02.266 a transarterial therapy,

NOTE Confidence: 0.7872134

00:48:02.270 --> 00:48:04.784 and the numbers show that those

NOTE Confidence: 0.7872134

00:48:04.784 --> 00:48:06.916 patients would probably have a 20

NOTE Confidence: 0.7872134

00:48:06.916 --> 00:48:08.572 to 30% three year overall survival.

NOTE Confidence: 0.7872134

00:48:08.572 --> 00:48:10.890 So just by doing the Pve and

NOTE Confidence: 0.7872134

00:48:10.890 --> 00:48:12.640 getting the patient to surgery,

NOTE Confidence: 0.7872134

00:48:12.640 --> 00:48:14.789 the patient had a much better outcome.

NOTE Confidence: 0.7872134

00:48:14.790 --> 00:48:16.533 So when we look at the staging

NOTE Confidence: 0.7872134

00:48:16.533 --> 00:48:18.670 system which I discussed in the very

NOTE Confidence: 0.7872134

00:48:18.670 --> 00:48:20.330 beginning and by understanding all

NOTE Confidence: 0.7872134

00:48:20.330 --> 00:48:22.362 the different procedures that we can

NOTE Confidence: 0.7872134

00:48:22.362 --> 00:48:24.302 offer at all the different stages,

NOTE Confidence: 0.7872134

00:48:24.302 --> 00:48:26.114 we now see that those patients

NOTE Confidence: 0.7872134

00:48:26.114 --> 00:48:27.997 that have very early or early

NOTE Confidence: 0.7872134

00:48:27.997 --> 00:48:29.527 stage disease can result in.

NOTE Confidence: 0.8070893

00:48:33.280 --> 00:48:35.660 Major stage be can have a greater

NOTE Confidence: 0.8070893

00:48:35.660 --> 00:48:38.500 than 2.5 year survival and then those.

NOTE Confidence: 0.8070893

00:48:38.500 --> 00:48:41.349 Of course that have advanced in terminal

NOTE Confidence: 0.8070893

00:48:41.349 --> 00:48:43.350 stages obviously don't do as well,

NOTE Confidence: 0.8070893

00:48:43.350 --> 00:48:45.588 but this just shows a recent.

NOTE Confidence: 0.8070893

00:48:45.590 --> 00:48:48.574 This is from a recent Journal of Hepatology

NOTE Confidence: 0.8070893

00:48:48.574 --> 00:48:50.479 Clinical Practice guidelines from Easel

NOTE Confidence: 0.8070893

00:48:50.479 --> 00:48:53.041 that there is really the newest thing.

NOTE Confidence: 0.8070893

00:48:53.050 --> 00:48:55.738 So I just wanted to pretty much finish

NOTE Confidence: 0.8070893

00:48:55.738 --> 00:48:59.020 up by some things that we're doing now.

NOTE Confidence: 0.8070893

00:48:59.020 --> 00:49:01.964 Some new therapeutic approaches and I want to

NOTE Confidence: 0.8070893

00:49:01.964 --> 00:49:03.969 discuss immunotherapy and interventional on.

NOTE Confidence: 0.8070893

00:49:03.970 --> 00:49:06.718 And how it interacts with interventional

NOTE Confidence: 0.8070893

00:49:06.718 --> 00:49:09.660 oncology so we all know that

NOTE Confidence: 0.8070893

00:49:09.660 --> 00:49:11.712 immunotherapy plays an important

NOTE Confidence: 0.8070893

00:49:11.712 --> 00:49:14.620 role in malignant tumor treatment.

NOTE Confidence: 0.8070893

00:49:14.620 --> 00:49:15.792 In particular.

NOTE Confidence: 0.8070893

00:49:15.792 --> 00:49:18.136 Immune checkpoint inhibitors have

NOTE Confidence: 0.8070893

00:49:18.136 --> 00:49:21.008 promising clinical applications and we

NOTE Confidence: 0.8070893

00:49:21.008 --> 00:49:23.273 also understand that monotherapy only

NOTE Confidence: 0.8070893

00:49:23.273 --> 00:49:26.279 benefits a small portion of the patients.

NOTE Confidence: 0.8070893

00:49:26.280 --> 00:49:28.400 So for that reason,

NOTE Confidence: 0.8070893

00:49:28.400 --> 00:49:30.520 combination of different immune

NOTE Confidence: 0.8070893

00:49:30.520 --> 00:49:32.165 checkpoint inhibitors with

NOTE Confidence: 0.8070893

00:49:32.165 --> 00:49:34.197 different mechanism of action.

NOTE Confidence: 0.8070893

00:49:34.200 --> 00:49:35.817 Have been utilized.

NOTE Confidence: 0.8070893

00:49:35.817 --> 00:49:36.356 However,

NOTE Confidence: 0.8070893

00:49:36.356 --> 00:49:39.051 despite this there's been a

NOTE Confidence: 0.8070893

00:49:39.051 --> 00:49:42.298 increase in the incidence of immune

NOTE Confidence: 0.8070893

00:49:42.298 --> 00:49:44.398 related severe adverse events,

NOTE Confidence: 0.8070893

00:49:44.400 --> 00:49:48.264 so in some cases a lot of patients

NOTE Confidence: 0.8070893

00:49:48.264 --> 00:49:52.456 may not be really amenable to this.

NOTE Confidence: 0.8070893

00:49:52.460 --> 00:49:56.276 We know that our interventional oncology

NOTE Confidence: 0.8070893

00:49:56.276 --> 00:50:00.389 therapies do elicit systemic immune response.

NOTE Confidence: 0.8070893

00:50:00.390 --> 00:50:00.709 However,

NOTE Confidence: 0.8070893

00:50:00.709 --> 00:50:03.261 these responses may be too weak to prevent

NOTE Confidence: 0.8070893

00:50:03.261 --> 00:50:05.489 local recurrence in distant metastases,

NOTE Confidence: 0.8070893

00:50:05.490 --> 00:50:07.314 and it's really unclear how we

NOTE Confidence: 0.8070893

00:50:07.314 --> 00:50:09.058 can regulate the immune system

NOTE Confidence: 0.8070893

00:50:09.058 --> 00:50:10.946 through these different mechanisms,

NOTE Confidence: 0.8070893

00:50:10.950 --> 00:50:13.605 and this is a you know from a paper

NOTE Confidence: 0.8070893

00:50:13.605 --> 00:50:16.410 from current oncology reports in 2020,

NOTE Confidence: 0.8070893

00:50:16.410 --> 00:50:18.230 which shows a very complex.

NOTE Confidence: 0.8445389

00:50:20.460 --> 00:50:23.169 I used paradigm in how we know therapy can

NOTE Confidence: 0.8445389

00:50:23.169 --> 00:50:26.279 be used in the setting of chemoembolization,

NOTE Confidence: 0.8445389

00:50:26.280 --> 00:50:27.606 radioembolization, inflation etc.

NOTE Confidence: 0.8445389

00:50:27.606 --> 00:50:30.258 So there is an opportunity for

NOTE Confidence: 0.8445389

00:50:30.258 --> 00:50:31.966 potential synergy with these

NOTE Confidence: 0.8445389

00:50:31.966 --> 00:50:33.966 checkpoint inhibitors with some of

NOTE Confidence: 0.8445389

00:50:33.966 --> 00:50:35.909 the therapies that we can offer.

NOTE Confidence: 0.8445389

00:50:35.910 --> 00:50:38.598 And this just shows how taste and

NOTE Confidence: 0.8445389

00:50:38.598 --> 00:50:41.029 ablation and even breakey therapy,

NOTE Confidence: 0.8445389

00:50:41.030 --> 00:50:43.165 really can result in both

NOTE Confidence: 0.8445389

00:50:43.165 --> 00:50:44.873 immunostimulation an immune suppression.

NOTE Confidence: 0.8445389

00:50:44.880 --> 00:50:47.346 I don't want to get into

NOTE Confidence: 0.8445389

00:50:47.346 --> 00:50:49.570 all the details of this,

NOTE Confidence: 0.8445389

00:50:49.570 --> 00:50:52.156 but basically it's something where we

NOTE Confidence: 0.8445389

00:50:52.156 --> 00:50:54.308 can utilize the intervention oncology

NOTE Confidence: 0.8445389

00:50:54.308 --> 00:50:56.462 therapies in order to really delve

NOTE Confidence: 0.8445389

00:50:56.462 --> 00:50:59.569 into how we can treat patients much

NOTE Confidence: 0.8445389

00:50:59.569 --> 00:51:01.529 more effectively with immunotherapy.

NOTE Confidence: 0.8445389

00:51:01.530 --> 00:51:04.296 And then this just shows that

NOTE Confidence: 0.8445389

00:51:04.296 --> 00:51:06.890 there are numerous ongoing studies.

NOTE Confidence: 0.8445389

00:51:06.890 --> 00:51:10.316 Looking at the combination of immune

NOTE Confidence: 0.8445389

00:51:10.316 --> 00:51:13.024 therapy with locoregional therapy and

NOTE Confidence: 0.8445389

00:51:13.024 --> 00:51:16.030 this is a study I just wanted to show

NOTE Confidence: 0.8445389

00:51:16.121 --> 00:51:19.465 one that just got activated two days ago.

NOTE Confidence: 0.8445389

00:51:19.470 --> 00:51:21.078 At Yale Cancer Center,

NOTE Confidence: 0.8445389

00:51:21.078 --> 00:51:23.490 which probably need to discuss soon.

NOTE Confidence: 0.8445389

00:51:23.490 --> 00:51:26.274 If Mario allows me to at our upcoming

NOTE Confidence: 0.8445389

00:51:26.274 --> 00:51:29.118 one of our upcoming tumor boards,

NOTE Confidence: 0.8445389

00:51:29.120 --> 00:51:31.927 which is the Merkley 012 clinical trial,

NOTE Confidence: 0.8445389

00:51:31.930 --> 00:51:34.744 which is basically taste is the backbone,

NOTE Confidence: 0.8445389

00:51:34.750 --> 00:51:36.760 with or without, you know,

NOTE Confidence: 0.8445389

00:51:36.760 --> 00:51:37.142 therapy,

NOTE Confidence: 0.8445389

00:51:37.142 --> 00:51:40.198 which in this case is is pen bro

NOTE Confidence: 0.8445389

00:51:40.198 --> 00:51:42.297 plus at multi kinase inhibitor

NOTE Confidence: 0.8445389

00:51:42.297 --> 00:51:45.626 which is live at and if so each

NOTE Confidence: 0.8445389

00:51:45.626 --> 00:51:48.419 patient will get taste and then they

NOTE Confidence: 0.8445389

00:51:48.419 --> 00:51:50.900 may or may not be randomized.

NOTE Confidence: 0.8445389

00:51:50.900 --> 00:51:52.550 Those they get the systemic

NOTE Confidence: 0.8445389

00:51:52.550 --> 00:51:54.200 therapy and those that don't,

NOTE Confidence: 0.8445389

00:51:54.200 --> 00:51:56.840 but we can go into that another time.

NOTE Confidence: 0.8445389

00:51:56.840 --> 00:51:57.526 And Lastly,

NOTE Confidence: 0.8445389

00:51:57.526 --> 00:51:59.584 I just wanted to show that

NOTE Confidence: 0.8445389

00:51:59.584 --> 00:52:01.989 we do treat other patients.

NOTE Confidence: 0.8445389

00:52:01.990 --> 00:52:04.326 I just have a couple of cases to

NOTE Confidence: 0.8445389

00:52:04.326 --> 00:52:07.107 show that this is a patient with

NOTE Confidence: 0.8445389

00:52:07.107 --> 00:52:08.807 colorectal cancer that followed.

NOTE Confidence: 0.8445389

00:52:08.810 --> 00:52:09.884 They failed multiple

NOTE Confidence: 0.8445389

00:52:09.884 --> 00:52:11.316 chemotherapeutic Regimen's who was,

NOTE Confidence: 0.8445389

00:52:11.320 --> 00:52:12.652 as you can see,

NOTE Confidence: 0.8445389

00:52:12.652 --> 00:52:14.650 has innumerable tumors with with this

NOTE Confidence: 0.8445389

00:52:14.721 --> 00:52:16.796 colorectal cancer did have normal

NOTE Confidence: 0.8445389

00:52:16.796 --> 00:52:18.871 underlying liver function and we

NOTE Confidence: 0.8445389

00:52:18.941 --> 00:52:20.825 treated this patient with white 90

NOTE Confidence: 0.8445389

00:52:20.825 --> 00:52:23.658 and you can see that there's a clear

NOTE Confidence: 0.8445389

00:52:23.658 --> 00:52:26.405 impact on the tumor response and I

NOTE Confidence: 0.8445389

00:52:26.405 --> 00:52:29.267 don't want to go into all the surf locks,

NOTE Confidence: 0.8445389

00:52:29.270 --> 00:52:30.774 data and all that,

NOTE Confidence: 0.8445389

00:52:30.774 --> 00:52:32.654 but just be aware that.

NOTE Confidence: 0.8445389

00:52:32.660 --> 00:52:34.556 We can do it for this.

NOTE Confidence: 0.8445389

00:52:34.560 --> 00:52:37.413 This is a patient that was referred to me.

NOTE Confidence: 0.8445389

00:52:37.420 --> 00:52:37.736 Well,

NOTE Confidence: 0.8445389

00:52:37.736 --> 00:52:40.264 it was a Cornell from a radiation oncologist.

NOTE Confidence: 0.8445389

00:52:40.270 --> 00:52:42.489 Actually with chair who had breast cancer,

NOTE Confidence: 0.8445389

00:52:42.490 --> 00:52:42.821 liver,

NOTE Confidence: 0.8445389

00:52:42.821 --> 00:52:43.152 Mets.

NOTE Confidence: 0.8445389

00:52:43.152 --> 00:52:45.469 And as you can see it's really

NOTE Confidence: 0.8445389

00:52:45.469 --> 00:52:47.258 really overtaking the liver.

NOTE Confidence: 0.8445389

00:52:47.260 --> 00:52:49.897 I was asked to see if we can really

NOTE Confidence: 0.8445389

00:52:49.897 --> 00:52:52.451 do anything for this patient and we

NOTE Confidence: 0.8445389

00:52:52.451 --> 00:52:55.586 did why 90 the page and then this

NOTE Confidence: 0.8445389

00:52:55.586 --> 00:52:57.992 was a situation where the patient

NOTE Confidence: 0.8445389

00:52:58.000 --> 00:53:00.464 was able to see even though she

NOTE Confidence: 0.8445389

00:53:00.464 --> 00:53:02.650 did succumb not within a year,

NOTE Confidence: 0.8445389

00:53:02.650 --> 00:53:04.757 she was able to see her son's

NOTE Confidence: 0.8445389

00:53:04.757 --> 00:53:07.018 wedding and also spend their her

NOTE Confidence: 0.8445389

00:53:07.018 --> 00:53:08.738 last Thanksgiving with family.

NOTE Confidence: 0.8445389

00:53:08.740 --> 00:53:09.456 So again,

NOTE Confidence: 0.8445389

00:53:09.456 --> 00:53:12.320 this is where the palliative nature comes in.

NOTE Confidence: 0.8445389

00:53:12.320 --> 00:53:13.394 And then Lastly,

NOTE Confidence: 0.8445389

00:53:13.394 --> 00:53:15.900 this is a patient with pancreatic cancer,

NOTE Confidence: 0.8445389

00:53:15.900 --> 00:53:17.800 who we were able to.

NOTE Confidence: 0.8445389

00:53:17.800 --> 00:53:19.275 Treat with conventional tastes in

NOTE Confidence: 0.8445389

00:53:19.275 --> 00:53:22.130 a term that I call like just like

NOTE Confidence: 0.8445389

00:53:22.130 --> 00:53:23.882 radiation segmentectomy something I

NOTE Confidence: 0.8445389

00:53:23.882 --> 00:53:26.050 call now chemoembolization segmentectomy,

NOTE Confidence: 0.8445389

00:53:26.050 --> 00:53:28.408 where we can actually you know,

NOTE Confidence: 0.8445389

00:53:28.410 --> 00:53:29.577 in pancreatic cancer,

NOTE Confidence: 0.8445389

00:53:29.577 --> 00:53:32.300 we know these patients have very hypo

NOTE Confidence: 0.8445389

00:53:32.366 --> 00:53:34.934 vascular tumors in a very dismal

NOTE Confidence: 0.8445389

00:53:34.934 --> 00:53:36.646 plastic fibrotic tumor structure

NOTE Confidence: 0.80918545

00:53:36.717 --> 00:53:39.413 where if we can treat the entire segment,

NOTE Confidence: 0.80918545

00:53:39.420 --> 00:53:41.766 the tumors cannot live, so that's

NOTE Confidence: 0.80918545

00:53:41.766 --> 00:53:44.130 something that we're also looking at,

NOTE Confidence: 0.80918545

00:53:44.130 --> 00:53:47.775 so I wanted to make it clear that you

NOTE Confidence: 0.80918545

00:53:47.775 --> 00:53:51.369 know HCC is not the only thing we do.

NOTE Confidence: 0.80918545

00:53:51.370 --> 00:53:53.596 If you do have patients that have

NOTE Confidence: 0.80918545

00:53:53.596 --> 00:53:55.764 other types of tumors, we're actually

NOTE Confidence: 0.80918545

00:53:55.764 --> 00:53:58.123 able to really treat those as well,

NOTE Confidence: 0.80918545

00:53:58.130 --> 00:54:01.775 and we're happy to speak to you about them.

NOTE Confidence: 0.80918545

00:54:01.780 --> 00:54:04.426 So in conclusion, I hope I demonstrated

NOTE Confidence: 0.80918545

00:54:04.426 --> 00:54:06.691 their local regional therapies do play

NOTE Confidence: 0.80918545

00:54:06.691 --> 00:54:09.162 an important role in the management of

NOTE Confidence: 0.80918545

00:54:09.231 --> 00:54:11.817 both primary and metastatic liver cancer.

NOTE Confidence: 0.80918545

00:54:11.820 --> 00:54:14.130 They often provide benefit for survival,

NOTE Confidence: 0.80918545

00:54:14.130 --> 00:54:15.360 local tumor control,

NOTE Confidence: 0.80918545

00:54:15.360 --> 00:54:17.820 and improve quality of life compared

NOTE Confidence: 0.80918545

00:54:17.820 --> 00:54:20.258 to and in some cases, you know,

NOTE Confidence: 0.80918545

00:54:20.258 --> 00:54:22.053 compared to resection and compared

NOTE Confidence: 0.80918545

00:54:22.053 --> 00:54:23.780 to some systemic therapies,

NOTE Confidence: 0.80918545

00:54:23.780 --> 00:54:25.710 it may result in cure.

NOTE Confidence: 0.80918545

00:54:25.710 --> 00:54:26.928 In some patients,

NOTE Confidence: 0.80918545

00:54:26.928 --> 00:54:29.770 such as those that have solitaire E

NOTE Confidence: 0.80918545

00:54:29.848 --> 00:54:32.188 small HCC's and can enable patients

NOTE Confidence: 0.80918545

00:54:32.188 --> 00:54:34.830 to be bridge or down stage 2.

NOTE Confidence: 0.80918545

00:54:34.830 --> 00:54:37.500 Transplant or surgery?

NOTE Confidence: 0.80918545

00:54:37.500 --> 00:54:38.679 There's various sublative

NOTE Confidence: 0.80918545

00:54:38.679 --> 00:54:39.858 entrance arterial therapies,

NOTE Confidence: 0.80918545

00:54:39.860 --> 00:54:41.830 and they have very different

NOTE Confidence: 0.80918545

00:54:41.830 --> 00:54:43.406 mechanism of of actions,

NOTE Confidence: 0.80918545

00:54:43.410 --> 00:54:45.774 but I think when looking at

NOTE Confidence: 0.80918545

00:54:45.774 --> 00:54:47.350 these kinds of therapies,

NOTE Confidence: 0.80918545

00:54:47.350 --> 00:54:49.275 it's important to really understand

NOTE Confidence: 0.80918545

00:54:49.275 --> 00:54:52.065 the real true nuances of the therapies

NOTE Confidence: 0.80918545

00:54:52.065 --> 00:54:54.055 that you're either performing or

NOTE Confidence: 0.80918545

00:54:54.055 --> 00:54:56.856 requesting is a refer so that you

NOTE Confidence: 0.80918545

00:54:56.856 --> 00:54:58.781 really understand what we're talking

NOTE Confidence: 0.80918545

00:54:58.781 --> 00:55:01.612 about and how to read reports when

NOTE Confidence: 0.80918545

00:55:01.612 --> 00:55:03.846 they come out saying ablation

NOTE Confidence: 0.80918545

00:55:03.846 --> 00:55:05.910 or a key mobilization.

NOTE Confidence: 0.80918545

00:55:05.910 --> 00:55:08.374 I've also hope to have shown advanced

NOTE Confidence: 0.80918545

00:55:08.374 --> 00:55:10.270 that both advanced imaging an

NOTE Confidence: 0.80918545

00:55:10.270 --> 00:55:12.190 catheter based technology has been

NOTE Confidence: 0.80918545

00:55:12.190 --> 00:55:14.670 very helpful in treatment decisions.

NOTE Confidence: 0.80918545

00:55:14.670 --> 00:55:16.386 By providing intraprocedural guidance

NOTE Confidence: 0.80918545

00:55:16.386 --> 00:55:18.531 and therapeutic confirmation that we

NOTE Confidence: 0.80918545

00:55:18.531 --> 00:55:21.029 were able to effectively treat the tumors,

NOTE Confidence: 0.80918545

00:55:21.030 --> 00:55:23.179 and we're also now on the precipice

NOTE Confidence: 0.80918545

00:55:23.179 --> 00:55:25.302 of looking at combination therapies

NOTE Confidence: 0.80918545

00:55:25.302 --> 00:55:26.997 which appear promising,

NOTE Confidence: 0.80918545

00:55:27.000 --> 00:55:29.786 such as those found in immuno oncology.

NOTE Confidence: 0.80918545

00:55:29.790 --> 00:55:32.966 So with that I think I'll stop here.

NOTE Confidence: 0.83673346

00:55:35.820 --> 00:55:38.446 Think I was on time, but you know I'm

NOTE Confidence: 0.83673346

00:55:38.446 --> 00:55:40.760 sure we have some time for questions.

NOTE Confidence: 0.87695014

00:55:42.060 --> 00:55:43.128 Thank you very

NOTE Confidence: 0.87695014

00:55:43.130 --> 00:55:47.062 much, Sir David. For anybody has a

NOTE Confidence: 0.87695014

00:55:47.062 --> 00:55:49.612 question and type type it please in

NOTE Confidence: 0.87695014

00:55:49.612 --> 00:55:51.929 the chat and then we will respond.

NOTE Confidence: 0.87695014

00:55:51.930 --> 00:55:54.576 In the end I mean by what

NOTE Confidence: 0.87695014

00:55:54.576 --> 00:55:56.690 people may be thinking.

NOTE Confidence: 0.87695014

00:55:56.690 --> 00:56:00.154 I want to thank you for the these.

NOTE Confidence: 0.87695014

00:56:00.160 --> 00:56:03.619 Are this great review of all the possible.

NOTE Confidence: 0.75699204

00:56:05.740 --> 00:56:08.350 Approach is there.

NOTE Confidence: 0.75699204

00:56:08.350 --> 00:56:09.826 Interventional radiology can can

NOTE Confidence: 0.75699204

00:56:09.826 --> 00:56:12.040 provide for the treatment of primary,

NOTE Confidence: 0.75699204

00:56:12.040 --> 00:56:13.126 secondary liver tumor.

NOTE Confidence: 0.75699204

00:56:13.126 --> 00:56:16.435 I mean from my own point of view, I,

NOTE Confidence: 0.75699204

00:56:16.435 --> 00:56:19.115 I think you really showed the complexity of

NOTE Confidence: 0.75699204

00:56:19.115 --> 00:56:21.997 the dictation making that is behind this.

NOTE Confidence: 0.75699204

00:56:22.000 --> 00:56:25.312 It's you know, as you said at the beginning,

NOTE Confidence: 0.75699204

00:56:25.320 --> 00:56:27.910 we think in a very simplified way.

NOTE Confidence: 0.75699204

00:56:27.910 --> 00:56:31.095 Yeah, let's sub later if aid is.

NOTE Confidence: 0.75699204

00:56:31.100 --> 00:56:35.438 But in reality, you really do.

NOTE Confidence: 0.75699204

00:56:35.440 --> 00:56:38.618 Send the patient to centers that have

NOTE Confidence: 0.75699204

00:56:38.618 --> 00:56:41.048 all these possibilities, Anan abilities,

NOTE Confidence: 0.75699204

00:56:41.048 --> 00:56:43.718 and they can really tailor.

NOTE Confidence: 0.75699204

00:56:43.720 --> 00:56:46.730 The treatment of the patient to the.

NOTE Confidence: 0.73697114

00:56:49.160 --> 00:56:50.588 To amend personalized treatment

NOTE Confidence: 0.73697114

00:56:50.588 --> 00:56:53.110 to the patient, and. Great.

NOTE Confidence: 0.7393944

00:56:55.150 --> 00:56:58.158 So we have a question from even a

NOTE Confidence: 0.7393944

00:56:58.158 --> 00:57:00.990 rukundo great informative presentation.

NOTE Confidence: 0.7393944

00:57:00.990 --> 00:57:02.938 My questions and terminology,

NOTE Confidence: 0.7393944

00:57:02.938 --> 00:57:04.886 embolus therapy versus embolization.

NOTE Confidence: 0.7393944

00:57:04.890 --> 00:57:06.838 Is there any difference?

NOTE Confidence: 0.8381277

00:57:08.870 --> 00:57:10.960 Well, that's actually a very

NOTE Confidence: 0.8381277

00:57:10.960 --> 00:57:13.050 interesting question because I like

NOTE Confidence: 0.8381277

00:57:13.120 --> 00:57:15.538 to always call things emblow therapy.

NOTE Confidence: 0.8381277

00:57:15.540 --> 00:57:17.625 Now clearly there's really not

NOTE Confidence: 0.8381277

00:57:17.625 --> 00:57:19.293 a major difference between.

NOTE Confidence: 0.8381277

00:57:19.300 --> 00:57:21.790 Well, I guess the term embolization

NOTE Confidence: 0.8381277

00:57:21.790 --> 00:57:23.880 implies that similar to like,

NOTE Confidence: 0.8381277

00:57:23.880 --> 00:57:25.965 what a pulmonary embolism uses

NOTE Confidence: 0.8381277

00:57:25.965 --> 00:57:28.050 that you're taking a catheter,

NOTE Confidence: 0.8381277

00:57:28.050 --> 00:57:30.570 and your iatrogenic Lee moving one

NOTE Confidence: 0.8381277

00:57:30.570 --> 00:57:33.469 particle or or structure to another area.

NOTE Confidence: 0.8381277

00:57:33.470 --> 00:57:36.815 Now that could be with one particle, right?

NOTE Confidence: 0.8381277

00:57:36.815 --> 00:57:39.790 But that doesn't have to be with.

NOTE Confidence: 0.8381277

00:57:39.790 --> 00:57:42.555 The whole thing, so I guess emblow

NOTE Confidence: 0.8381277

00:57:42.555 --> 00:57:44.400 therapy is actually defined.

NOTE Confidence: 0.8381277

00:57:44.400 --> 00:57:47.065 Should be defined as the

NOTE Confidence: 0.8381277

00:57:47.065 --> 00:57:49.197 treatment of patients with.

NOTE Confidence: 0.8381277

00:57:49.200 --> 00:57:51.420 You know, using these transcatheter

NOTE Confidence: 0.8381277

00:57:51.420 --> 00:57:52.308 transarterial methods,

NOTE Confidence: 0.8381277

00:57:52.310 --> 00:57:54.860 but I guess embolization doesn't

NOTE Confidence: 0.8381277

00:57:54.860 --> 00:57:57.410 necessarily have to be therapeutic.

NOTE Confidence: 0.8381277

00:57:57.410 --> 00:57:59.318 So that's actually a great I

NOTE Confidence: 0.8381277

00:57:59.318 --> 00:58:01.250 think about that all the time.

NOTE Confidence: 0.8381277

00:58:01.250 --> 00:58:04.130 And you know when we talk about in reports,

NOTE Confidence: 0.8381277

00:58:04.130 --> 00:58:05.730 for example, embolization of that,

NOTE Confidence: 0.8381277

00:58:05.730 --> 00:58:08.169 would you know?

NOTE Confidence: 0.8381277

00:58:08.170 --> 00:58:10.036 And I think that's the actual.

NOTE Confidence: 0.8381277

00:58:10.040 --> 00:58:11.288 That's the actual difference.

NOTE Confidence: 0.42469427

00:58:14.410 --> 00:58:19.150 I come. Baby, do you have?

NOTE Confidence: 0.42469427

00:58:19.150 --> 00:58:22.340 Can you expand a little bit of

NOTE Confidence: 0.42469427

00:58:22.340 --> 00:58:24.609 the possible adverse effect of

NOTE Confidence: 0.42469427

00:58:24.610 --> 00:58:27.930 combination therapy with the. They

NOTE Confidence: 0.7514345

00:58:27.930 --> 00:58:30.950 send the email uncle immunotherapy.

NOTE Confidence: 0.84548587

00:58:32.750 --> 00:58:34.475 Well, basically we don't know

NOTE Confidence: 0.84548587

00:58:34.475 --> 00:58:36.205 that yet, right? I mean,

NOTE Confidence: 0.84548587

00:58:36.205 --> 00:58:37.930 that's why we're doing these.

NOTE Confidence: 0.84548587

00:58:37.930 --> 00:58:40.000 That's why we're doing these studies.

NOTE Confidence: 0.84548587

00:58:40.000 --> 00:58:41.029 I mean basically.

NOTE Confidence: 0.8167627

00:58:43.050 --> 00:58:47.018 We also we also don't know if you

NOTE Confidence: 0.8167627

00:58:47.018 --> 00:58:51.018 should do the if you should do the.

NOTE Confidence: 0.8167627

00:58:51.020 --> 00:58:53.708 There are which therapy used to 1st right?

NOTE Confidence: 0.8167627

00:58:53.710 --> 00:58:56.598 Like should you do the should you start

NOTE Confidence: 0.8167627

00:58:56.598 --> 00:58:59.774 with taste and and then follow it with

NOTE Confidence: 0.8167627

00:58:59.774 --> 00:59:02.186 immunotherapy or should you start with

NOTE Confidence: 0.8167627

00:59:02.186 --> 00:59:05.186 your therapy and then do the taste right?

NOTE Confidence: 0.8167627

00:59:05.190 --> 00:59:08.228 You know each. I guess trial is

NOTE Confidence: 0.8167627

00:59:08.228 --> 00:59:11.680 very different, right? And each.

NOTE Confidence: 0.8167627

00:59:11.680 --> 00:59:14.725 I guess therapy has its own company,

NOTE Confidence: 0.8167627

00:59:14.730 --> 00:59:18.380 has its own adverse events.

NOTE Confidence: 0.8167627

00:59:18.380 --> 00:59:21.776 The thought is that you would

NOTE Confidence: 0.8167627

00:59:21.776 --> 00:59:24.122 do the immunotherapy. You know,

NOTE Confidence: 0.8167627

00:59:24.122 --> 00:59:26.690 after the at least two weeks you would

NOTE Confidence: 0.8167627

00:59:26.759 --> 00:59:29.769 do the therapy immunotherapy after the taste.

NOTE Confidence: 0.8167627

00:59:29.770 --> 00:59:32.388 That by then the tastes adverse events

NOTE Confidence: 0.8167627

00:59:32.388 --> 00:59:35.316 should already be taken out of the equation.

NOTE Confidence: 0.8167627

00:59:35.320 --> 00:59:37.540 Because in the time that you're

NOTE Confidence: 0.8167627

00:59:37.540 --> 00:59:38.650 getting the immunotherapy,

NOTE Confidence: 0.8167627

00:59:38.650 --> 00:59:40.130 those patients would already

NOTE Confidence: 0.8167627

00:59:40.130 --> 00:59:41.610 be beyond that time.

NOTE Confidence: 0.8167627

00:59:41.610 --> 00:59:43.983 So in terms of the actual combination

NOTE Confidence: 0.8167627

00:59:43.983 --> 00:59:47.346 is kind of hard to understand. I mean,

NOTE Confidence: 0.8167627

00:59:47.346 --> 00:59:50.124 particularly in the Merck study where.

NOTE Confidence: 0.8167627

00:59:50.130 --> 00:59:51.950 Pizza getting taste first.

NOTE Confidence: 0.8167627

00:59:51.950 --> 00:59:54.500 So you know, we still don't know.

NOTE Confidence: 0.8167627

00:59:54.500 --> 00:59:55.090 I mean,

NOTE Confidence: 0.8167627

00:59:55.090 --> 00:59:57.727 we're still very early in in all of these,

NOTE Confidence: 0.8167627

00:59:57.730 --> 00:59:59.788 you know, in all of these studies.

NOTE Confidence: 0.8167627

00:59:59.790 --> 01:00:00.272 So I.

NOTE Confidence: 0.8167627

01:00:00.272 --> 01:00:02.200 I don't have a very good answer yet.

NOTE Confidence: 0.5690657

01:00:04.210 --> 01:00:07.205 Switch an ATC and different

NOTE Confidence: 0.5690657

01:00:07.205 --> 01:00:09.002 histopathology dash subtypes

NOTE Confidence: 0.5690657

01:00:09.002 --> 01:00:11.639 with different molecular bases.

NOTE Confidence: 0.5690657

01:00:11.640 --> 01:00:15.010 Do you predict?

NOTE Confidence: 0.5690657

01:00:15.010 --> 01:00:17.369 If there is a possibility that the

NOTE Confidence: 0.5690657

01:00:17.369 --> 01:00:19.655 different subtype of ACC can be

NOTE Confidence: 0.5690657

01:00:19.655 --> 01:00:21.271 treated differently by locoregional

NOTE Confidence: 0.5690657

01:00:21.271 --> 01:00:23.609 therapies and they, I would have

NOTE Confidence: 0.81619465

01:00:23.610 --> 01:00:25.860 to say the answer is yes.

NOTE Confidence: 0.81619465

01:00:25.860 --> 01:00:28.428 The reason why I think that is that

NOTE Confidence: 0.81619465

01:00:28.428 --> 01:00:30.932 there's a very big difference is as

NOTE Confidence: 0.81619465

01:00:30.932 --> 01:00:33.648 you know in colon cancer and right

NOTE Confidence: 0.81619465

01:00:33.648 --> 01:00:36.216 sided versus left sided colon cancer

NOTE Confidence: 0.81619465

01:00:36.216 --> 01:00:38.636 and actuality when there's been studies

NOTE Confidence: 0.81619465

01:00:38.636 --> 01:00:40.970 out there that with colon cancer

NOTE Confidence: 0.81619465

01:00:41.038 --> 01:00:43.090 that there's when patients get why

NOTE Confidence: 0.81619465

01:00:43.090 --> 01:00:45.798 90 to deliver in patients that have.

NOTE Confidence: 0.81619465

01:00:45.800 --> 01:00:47.910 Different types of colon cancer.

NOTE Confidence: 0.81619465

01:00:47.910 --> 01:00:51.150 They actually get different.

NOTE Confidence: 0.81619465

01:00:51.150 --> 01:00:53.140 Response rates.

NOTE Confidence: 0.81619465

01:00:53.140 --> 01:00:56.844 So that way you would actually be able

NOTE Confidence: 0.81619465

01:00:56.844 --> 01:01:00.959 to tailor it so I do believe that in time.

NOTE Confidence: 0.81619465

01:01:00.960 --> 01:01:02.630 You know, as I said,

NOTE Confidence: 0.81619465

01:01:02.630 --> 01:01:04.798 I mean right now we're only like 40

NOTE Confidence: 0.81619465

01:01:04.798 --> 01:01:06.907 years into really treating patients with

NOTE Confidence: 0.81619465

01:01:06.907 --> 01:01:09.640 these kinds of therapies for liver cancer.

NOTE Confidence: 0.81619465

01:01:09.640 --> 01:01:12.475 So which means to me that in 100 years

NOTE Confidence: 0.81619465

01:01:12.475 --> 01:01:15.067 we're going to be so far advanced that

NOTE Confidence: 0.81619465

01:01:15.067 --> 01:01:17.657 I don't see how you wouldn't have,

NOTE Confidence: 0.81619465

01:01:17.660 --> 01:01:19.712 you know, genetics involved into a

NOTE Confidence: 0.81619465

01:01:19.712 --> 01:01:20.738 personalized treatment algorithm

NOTE Confidence: 0.81619465

01:01:20.738 --> 01:01:22.338 for these kinds of therapies,

NOTE Confidence: 0.81619465

01:01:22.340 --> 01:01:24.664 so that's what we're here to do.

NOTE Confidence: 0.81619465

01:01:24.670 --> 01:01:27.008 That's why we're doing the research here,

NOTE Confidence: 0.81619465

01:01:27.010 --> 01:01:29.674 so I think that that's a great question,

NOTE Confidence: 0.81619465

01:01:29.680 --> 01:01:30.908 and I think that.

NOTE Confidence: 0.81619465

01:01:30.908 --> 01:01:31.829 Like I said,

NOTE Confidence: 0.81619465

01:01:31.830 --> 01:01:33.244 we're in the we're in the infancy.

NOTE Confidence: 0.7461756

01:01:34.220 --> 01:01:36.645 So the agency is acquisitively

NOTE Confidence: 0.7461756

01:01:36.645 --> 01:01:39.075 rather sensitive. How do you

NOTE Confidence: 0.7461756

01:01:39.075 --> 01:01:41.997 decide between taste and why? 90?

NOTE Confidence: 0.7461756

01:01:41.997 --> 01:01:44.482 Because in certain institution actually

NOTE Confidence: 0.7461756

01:01:44.482 --> 01:01:47.320 went 90 is preferably with days.

NOTE Confidence: 0.7461756

01:01:47.320 --> 01:01:50.230 Can you comment? So I thought

NOTE Confidence: 0.7461756

01:01:50.230 --> 01:01:55.080 I had a slide and an and where it went,

NOTE Confidence: 0.7461756

01:01:55.080 --> 01:01:59.190 which was a meta analysis of. And actually,

NOTE Confidence: 0.7461756

01:01:59.190 --> 01:02:01.045 the slide said how to decide now?

NOTE Confidence: 0.7461756

01:02:01.050 --> 01:02:02.098 Maybe I went through.

NOTE Confidence: 0.7461756

01:02:02.098 --> 01:02:03.980 Maybe I clicked the button too fast,

NOTE Confidence: 0.7461756

01:02:03.980 --> 01:02:07.644 but at the end of the the taste.

NOTE Confidence: 0.7461756

01:02:07.650 --> 01:02:10.986 Question I thought I had a meta analysis

NOTE Confidence: 0.7461756

01:02:10.986 --> 01:02:14.575 lie which basically shows that there's very

NOTE Confidence: 0.7461756

01:02:14.575 --> 01:02:18.079 similar outcomes in both taste and MY90,

NOTE Confidence: 0.7461756

01:02:18.080 --> 01:02:21.685 so you know the way that we've

NOTE Confidence: 0.7461756

01:02:21.685 --> 01:02:25.349 used to think about it is that.

NOTE Confidence: 0.7461756

01:02:25.350 --> 01:02:28.262 In in, in patients that were older patients

NOTE Confidence: 0.7461756

01:02:28.262 --> 01:02:31.580 that you know we want to do it as outpatient.

NOTE Confidence: 0.7461756

01:02:31.580 --> 01:02:32.964 You know, back then,

NOTE Confidence: 0.7461756

01:02:32.964 --> 01:02:34.348 those were all considered.

NOTE Confidence: 0.7461756

01:02:34.350 --> 01:02:36.080 You know why 90 patients?

NOTE Confidence: 0.7461756

01:02:36.080 --> 01:02:39.852 OK? Now we do taste all the

NOTE Confidence: 0.7461756

01:02:39.852 --> 01:02:41.680 time as outpatient as well.

NOTE Confidence: 0.7461756

01:02:41.680 --> 01:02:44.857 So when I'm looking at it I'm looking at,

NOTE Confidence: 0.7461756

01:02:44.860 --> 01:02:46.960 I guess the.

NOTE Confidence: 0.7461756

01:02:46.960 --> 01:02:50.340 The I guess you need to look at the patient.

NOTE Confidence: 0.7461756

01:02:50.340 --> 01:02:53.119 In general the performance status you need

NOTE Confidence: 0.7461756

01:02:53.119 --> 01:02:56.417 to look at is it low bar or BI lo bar.

NOTE Confidence: 0.7461756

01:02:56.420 --> 01:02:59.800 You have to look at how you're going to like.

NOTE Confidence: 0.7461756

01:02:59.800 --> 01:03:02.250 If tumors are all in different locations

NOTE Confidence: 0.7461756

01:03:02.250 --> 01:03:05.206 where you have to cherry pick each each one.

NOTE Confidence: 0.7461756

01:03:05.210 --> 01:03:07.234 Sometimes you opt for.

NOTE Confidence: 0.7461756

01:03:07.234 --> 01:03:09.258 Radioembolization or the other

NOTE Confidence: 0.7461756

01:03:09.258 --> 01:03:11.460 one so so basically.

NOTE Confidence: 0.7461756

01:03:11.460 --> 01:03:15.036 If you have if you have

NOTE Confidence: 0.7461756

01:03:15.036 --> 01:03:18.490 multiple tumors in in a lobe.

NOTE Confidence: 0.7461756

01:03:18.490 --> 01:03:21.210 And you're doing radio embolization.

NOTE Confidence: 0.7461756

01:03:21.210 --> 01:03:25.594 You either have to treat the whole lobe.

NOTE Confidence: 0.7461756

01:03:25.600 --> 01:03:25.931 OK,

NOTE Confidence: 0.7461756

01:03:25.931 --> 01:03:28.910 which is a very big low bar taste or

NOTE Confidence: 0.7461756

01:03:28.998 --> 01:03:32.046 you have to do all of this difficulty

NOTE Confidence: 0.7461756

01:03:32.046 --> 01:03:34.799 which is changing out catheters,

NOTE Confidence: 0.7461756

01:03:34.800 --> 01:03:35.616 splitting doses.

NOTE Confidence: 0.7461756

01:03:35.616 --> 01:03:37.656 You know it's very complex

NOTE Confidence: 0.7461756

01:03:37.656 --> 01:03:39.998 the way the anatomy is OK,

NOTE Confidence: 0.7461756

01:03:40.000 --> 01:03:42.728 so the other thing I said is that

NOTE Confidence: 0.7461756

01:03:42.728 --> 01:03:44.601 sometimes you have patients where

NOTE Confidence: 0.7461756

01:03:44.601 --> 01:03:47.745 you don't know what you want to do

NOTE Confidence: 0.7461756

01:03:47.745 --> 01:03:50.105 and chemoembolization or the other

NOTE Confidence: 0.7461756

01:03:50.105 --> 01:03:52.502 embolization is besides why 90.

NOTE Confidence: 0.7461756

01:03:52.502 --> 01:03:56.016 Are ones where you can get them.

NOTE Confidence: 0.7461756

01:03:56.020 --> 01:03:59.396 You can get the product off the shelf.

NOTE Confidence: 0.7461756

01:03:59.400 --> 01:03:59.753 OK,

NOTE Confidence: 0.7461756

01:03:59.753 --> 01:04:02.577 so instead of having to order it and

NOTE Confidence: 0.7461756

01:04:02.577 --> 01:04:05.232 and waiting and all that kind of

NOTE Confidence: 0.7461756

01:04:05.232 --> 01:04:09.006 stuff so you know there's a lot of

NOTE Confidence: 0.7461756

01:04:09.006 --> 01:04:11.214 different opportunities for treatment.

NOTE Confidence: 0.7461756

01:04:11.220 --> 01:04:14.880 Unfortunately, and this is where.

NOTE Confidence: 0.7461756

01:04:14.880 --> 01:04:16.404 You know, institutional.

NOTE Confidence: 0.7461756

01:04:16.404 --> 01:04:18.944 I guess expertise comes in

NOTE Confidence: 0.7461756

01:04:18.944 --> 01:04:21.688 is that there is no answer.

NOTE Confidence: 0.7461756

01:04:21.690 --> 01:04:24.504 OK, there really isn't, and you know,

NOTE Confidence: 0.7461756

01:04:24.510 --> 01:04:27.324 I, as we've discussed in the past,

NOTE Confidence: 0.7461756

01:04:27.330 --> 01:04:29.983 I personally believe taste is a great

NOTE Confidence: 0.7461756

01:04:29.983 --> 01:04:32.568 option for portal vein tumor thrombus,

NOTE Confidence: 0.7461756

01:04:32.570 --> 01:04:33.560 because you know,

NOTE Confidence: 0.7461756

01:04:33.560 --> 01:04:36.574 if you look at a lot of the

NOTE Confidence: 0.7461756

01:04:36.574 --> 01:04:37.810 Asian publications,

NOTE Confidence: 0.7461756

01:04:37.810 --> 01:04:40.120 you can see the actual apidel

NOTE Confidence: 0.7461756

01:04:40.120 --> 01:04:42.650 sitting in the portal vein codian.

NOTE Confidence: 0.7461756

01:04:42.650 --> 01:04:45.205 OK, where it's very difficult

NOTE Confidence: 0.7461756

01:04:45.205 --> 01:04:47.760 to see that with Y-90.

NOTE Confidence: 0.7461756

01:04:47.760 --> 01:04:50.912 So I know that why 90 right now

NOTE Confidence: 0.7461756

01:04:50.912 --> 01:04:53.580 seems to be the hot option.

NOTE Confidence: 0.7461756

01:04:53.580 --> 01:04:55.660 Technically I used in figuratively

NOTE Confidence: 0.7461756

01:04:55.660 --> 01:04:57.740 for portal vein tumor thrombus,

NOTE Confidence: 0.7461756

01:04:57.740 --> 01:05:00.659 but it's a very very delicate situation,

NOTE Confidence: 0.7461756

01:05:00.660 --> 01:05:02.840 I mean.

NOTE Confidence: 0.7461756

01:05:02.840 --> 01:05:04.996 I I don't really get too much

NOTE Confidence: 0.7461756

01:05:04.996 --> 01:05:06.440 into the expensive at all,

NOTE Confidence: 0.7461756

01:05:06.440 --> 01:05:08.540 which we haven't even discussed at all,

NOTE Confidence: 0.7461756

01:05:08.540 --> 01:05:09.960 but.

NOTE Confidence: 0.7461756

01:05:09.960 --> 01:05:11.922 A lot of it is just

NOTE Confidence: 0.7461756

01:05:11.922 --> 01:05:12.576 institutional northwestern.

NOTE Confidence: 0.7461756

01:05:12.580 --> 01:05:14.458 I guess you would most likely

NOTE Confidence: 0.7461756

01:05:14.458 --> 01:05:16.635 get away 90 even though I do

NOTE Confidence: 0.7461756

01:05:16.635 --> 01:05:18.630 know they do taste so you know

NOTE Confidence: 0.7461756

01:05:18.707 --> 01:05:20.747 it's very difficult to choose.

NOTE Confidence: 0.8266201

01:05:21.500 --> 01:05:25.110 Alright, so if there are no no other

NOTE Confidence: 0.8266201

01:05:25.110 --> 01:05:27.810 questions, I think we need we.

NOTE Confidence: 0.8266201

01:05:27.810 --> 01:05:31.418 We need to thank David Matter for this.

NOTE Confidence: 0.8266201

01:05:31.420 --> 01:05:34.350 Very nice, informative in broad

NOTE Confidence: 0.8266201

01:05:34.350 --> 01:05:38.314 lecture an and keep that in mind

NOTE Confidence: 0.8266201

01:05:38.314 --> 01:05:41.569 when we have a patient with the.

NOTE Confidence: 0.8266201

01:05:41.570 --> 01:05:43.670 Metastatic of primary liver cancer.

NOTE Confidence: 0.8266201

01:05:43.670 --> 01:05:46.190 Thank you very much to all

NOTE Confidence: 0.8266201

01:05:46.190 --> 01:05:48.290 and have a good evening.

NOTE Confidence: 0.7994688

01:05:48.290 --> 01:05:52.210 Thanks Mary for the invitation.