00:00:00.000 --> 00:00:01.692 Welcome everybody.

00:00:01.692 --> 00:00:06.408 This is the first ground round

00:00:06.408 --> 00:00:10.800 of 2022 and I am very glad to

00:00:10.800 --> 00:00:13.311 hoster with Doctor Jessica Davis.

00:00:13.311 --> 00:00:15.896 That is an incredible uprising.

00:00:15.900 --> 00:00:18.875 Star pediatric pathology and in

00:00:18.875 --> 00:00:22.322 bone and soft tissue I will give

00:00:22.322 --> 00:00:24.800 you a brief review of our career.

00:00:24.800 --> 00:00:26.417 Doctor Jessica Davis.

00:00:26.417 --> 00:00:30.190 Ryan now is a pathologist at Oregon.

00:00:30.190 --> 00:00:33.316 At the Science University in Portland,

00:00:33.320 --> 00:00:36.702 OR where since 2019,

00:00:36.702 --> 00:00:40.554 she also redirector of surgical pathology.

00:00:40.560 --> 00:00:43.092 She gotta do it actually from

00:00:43.092 --> 00:00:45.600 the same university in Portland.

00:00:45.600 --> 00:00:49.696 And then she did a monatomic AP and

00:00:49.696 --> 00:00:53.233 CP Fellowship in a University of

00:00:53.233 --> 00:00:57.384 California in San Francisco and did

00:00:57.384 --> 00:01:01.269 also a short fellowship which started

00:01:01.269 --> 00:01:04.230 coughing and you can see that from

00:01:04.303 --> 00:01:07.244 the beginning of her career she was

00:01:07.244 --> 00:01:10.256 interested not only in pediatric pathology,

00:01:10.260 --> 00:01:11.853 but in bone.

00:01:11.853 --> 00:01:17.615 And so for a tissue she did Ben,

00:01:17.615 --> 00:01:21.755 a pediatric pathology fellowship

00:01:21.755 --> 00:01:25.260 in Seattle Children Hospital

00:01:25.260 --> 00:01:28.835 over Seattle and she's board

00:01:28.835 --> 00:01:32.130 certified in pediatric pathology.

00:01:32.130 --> 00:01:33.196 Jumping ahead,

NOTE Confidence: 0.535734651666667

00:01:33.196 --> 00:01:36.394 I want to mention that in

NOTE Confidence: 0.589781010769231

00:01:38.510 --> 00:01:42.899 2020 she was nominated by our Society

NOTE Confidence: 0.589781010769231

00:01:42.899 --> 00:01:46.148 of Pediatric Pathology for the lot.

NOTE Confidence: 0.589781010769231

00:01:46.150 --> 00:01:51.267 Strauss Award visa is an award that

NOTE Confidence: 0.589781010769231

00:01:51.267 --> 00:01:56.109 recognizes the best paper published by one of

NOTE Confidence: 0.589781010769231

00:01:56.109 --> 00:02:01.298 our members in a reputable journal and the.

NOTE Confidence: 0.589781010769231

00:02:01.300 --> 00:02:04.328 And then the presenter has

NOTE Confidence: 0.589781010769231

00:02:04.328 --> 00:02:07.240 to be under 40 years of age.

NOTE Confidence: 0.589781010769231

00:02:07.240 --> 00:02:10.660 So she is young and the paper that point,

NOTE Confidence: 0.589781010769231

00:02:10.660 --> 00:02:14.488 which is actually the main focus of air

NOTE Confidence: 0.589781010769231

00:02:14.488 --> 00:02:17.960 of strongest focus of our career area,

NOTE Confidence: 0.589781010769231

00:02:17.960 --> 00:02:19.780 was responding with spectrum

NOTE Confidence: 0.589781010769231

00:02:19.780 --> 00:02:21.600 of pediatric ENT tracker,

NOTE Confidence: 0.589781010769231

00:02:21.600 --> 00:02:25.088 arranging missing comma tumor.

NOTE Confidence: 0.589781010769231

00:02:25.090 --> 00:02:29.690 So coming back, she has been very productive.

NOTE Confidence: 0.589781010769231

3

00:02:29.690 --> 00:02:34.058 She is being the Co author of more

00:02:34.058 --> 00:02:38.010 than 40 peer reviews article.

00:02:38.010 --> 00:02:41.574 She obviously has participated in a

00:02:41.574 --> 00:02:45.295 huge number of abstract and she is

00:02:45.295 --> 00:02:48.590 a very author of two books and Co.

00:02:48.590 --> 00:02:50.678 Author of numerous chapters,

00:02:50.678 --> 00:02:55.140 particularly as she has a five chapter in VW.

00:02:55.140 --> 00:02:58.050 In the recent every 5th edition of A WHO.

00:03:00.220 --> 00:03:04.216 Book The Blue Book for a soft tissue sarcoma.

00:03:04.220 --> 00:03:06.284 Also entering about obviously

00:03:06.284 --> 00:03:10.168 soft tissue of the pediatric age.

00:03:10.168 --> 00:03:13.728 She is more than anything,

00:03:13.730 --> 00:03:16.520 a very sought after speaker.

00:03:16.520 --> 00:03:18.512 She started with a couple of

00:03:18.512 --> 00:03:20.274 international talk at the beginning

00:03:20.274 --> 00:03:22.119 of his career over career,

00:03:22.120 --> 00:03:25.438 but now she is talking about at

00:03:25.438 --> 00:03:27.654 least five international talk.

00:03:27.654 --> 00:03:31.446 In the in the recent year,

00:03:31.450 --> 00:03:33.016 international class,

00:03:33.016 --> 00:03:36.148 regional and local talk.

00:03:36.150 --> 00:03:41.029 She is some grant funding and some

00:03:41.029 --> 00:03:43.669 collaboration with pharmaceutical society

00:03:43.669 --> 00:03:46.414 is pharmaceutical company which she

00:03:46.414 --> 00:03:49.648 will disclose in relation to her work.

00:03:49.650 --> 00:03:53.474 She is is doing and in addition she

00:03:53.474 --> 00:03:56.974 does enormous amount of work as a

00:03:56.974 --> 00:04:00.200 central pathology review for a number.

00:04:00.200 --> 00:04:01.336 Over protocol,

00:04:01.336 --> 00:04:04.176 either inside the way Children,

00:04:04.180 --> 00:04:09.101 Oncology society and some Phase 1B and

00:04:09.101 --> 00:04:13.810 another trial again for the children.

NOTE Confidence: 0.604750868888889

00:04:13.810 --> 00:04:19.580 Oncology society she is.

NOTE Confidence: 0.604750868888889

00:04:19.580 --> 00:04:22.922 Part of a research Society of

NOTE Confidence: 0.604750868888889

00:04:22.922 --> 00:04:25.150 pediatric pathology research group

NOTE Confidence: 0.604750868888889

00:04:25.241 --> 00:04:28.713 interest and she is very busy because

NOTE Confidence: 0.604750868888889

00:04:28.713 --> 00:04:31.250 she's very director over large.

NOTE Confidence: 0.67951371

00:04:33.630 --> 00:04:36.360 I theology department,

NOTE Confidence: 0.67951371

00:04:36.360 --> 00:04:39.056 I am sure I haven't not cover everything

NOTE Confidence: 0.67951371

00:04:39.056 --> 00:04:41.226 in addition to she is very active.

NOTE Confidence: 0.67951371

00:04:41.230 --> 00:04:43.939 She is energetic person during a young

NOTE Confidence: 0.67951371

00:04:43.939 --> 00:04:46.847 year she was in Africa in Tanzania,

NOTE Confidence: 0.67951371

00:04:46.850 --> 00:04:50.690 working in a center that was

NOTE Confidence: 0.67951371

00:04:50.690 --> 00:04:53.954 covered in medicine in Tanzania.

NOTE Confidence: 0.67951371

00:04:53.954 --> 00:04:58.314 But besides that she is splendid speaker.

NOTE Confidence: 0.67951371

00:04:58.314 --> 00:05:00.240 So welcome Jessica and

NOTE Confidence: 0.67951371

00:05:00.240 --> 00:05:02.490 I give the floor to you.

NOTE Confidence: 0.945911412857143

00:05:03.360 --> 00:05:05.019 Thank you so much for that very,

NOTE Confidence: 0.945911412857143

00:05:05.020 --> 00:05:06.052 very kind introduction.

NOTE Confidence: 0.945911412857143

00:05:06.052 --> 00:05:07.772 It's really my pleasure to

NOTE Confidence: 0.945911412857143

00:05:07.772 --> 00:05:09.518 speak to all of you today.

NOTE Confidence: 0.945911412857143

00:05:09.520 --> 00:05:13.088 I really hope you guys enjoy this talk.

NOTE Confidence: 0.896538693333333

00:05:17.190 --> 00:05:18.528 Hopefully you can see my screen.

NOTE Confidence: 0.896538693333333

00:05:18.530 --> 00:05:20.082 Please let me know if you have any

NOTE Confidence: 0.896538693333333

00:05:20.082 --> 00:05:21.440 problems with viewing the PowerPoint.

NOTE Confidence: 0.925540041111111

00:05:23.660 --> 00:05:27.440 This slide shows you my university as I was

NOTE Confidence: 0.925540041111111

00:05:27.440 --> 00:05:29.510 talking to Raphaela earlier this morning.

NOTE Confidence: 0.925540041111111

00:05:29.510 --> 00:05:31.099 My hospital is situated up on a

NOTE Confidence: 0.925540041111111

00:05:31.099 --> 00:05:32.680 hillside which is not the most

NOTE Confidence: 0.925540041111111

00:05:32.680 --> 00:05:34.100 strategic planning for our hospital,

NOTE Confidence: 0.925540041111111

00:05:34.100 --> 00:05:36.074 but it does give us the unique

NOTE Confidence: 0.925540041111111

00:05:36.074 --> 00:05:38.320 opportunity for me to commute to work

NOTE Confidence: 0.925540041111111

00:05:38.320 --> 00:05:40.324 sometimes via the Portland aerial tram.

NOTE Confidence: 0.925540041111111

00:05:40.330 --> 00:05:42.689 So if you have not visited Portland,

NOTE Confidence: 0.925540041111111

00:05:42.690 --> 00:05:44.524 please, I welcome you to come visit.

NOTE Confidence: 0.925540041111111

00:05:44.530 --> 00:05:46.726 I'm always happy to take guests

NOTE Confidence: 0.925540041111111

00:05:46.730 --> 00:05:49.070 and provide tours of our hospital.

NOTE Confidence: 0.925540041111111

00:05:49.070 --> 00:05:51.016 You can commute between our two campuses

NOTE Confidence: 0.925540041111111

00:05:51.016 --> 00:05:52.814 via the Portland Aerial tram, which.

NOTE Confidence: 0.925540041111111

00:05:52.814 --> 00:05:55.730 The main campus is up on this hillside and

NOTE Confidence: 0.925540041111111

00:05:55.800 --> 00:05:58.579 our other campuses down at the waterfront.

NOTE Confidence: 0.925540041111111

00:05:58.580 --> 00:05:59.768 Without further ado,

NOTE Confidence: 0.925540041111111

00:05:59.768 --> 00:06:02.144 I will go into our talk,

NOTE Confidence: 0.925540041111111

00:06:02.150 --> 00:06:03.620 which today I've been titled,

NOTE Confidence: 0.925540041111111

00:06:03.620 --> 00:06:05.879 What's in a name as we Kind of delve

NOTE Confidence: 0.925540041111111

00:06:05.879 --> 00:06:08.147 into the somewhat controversial topic

NOTE Confidence: 0.925540041111111

00:06:08.150 --> 00:06:10.730 with lots of recent discoveries talking

NOTE Confidence: 0.925540041111111

00:06:10.730 --> 00:06:12.450 about our current understanding

NOTE Confidence: 0.925540041111111

00:06:12.514 --> 00:06:14.089 of infantile fibrosarcoma,

NOTE Confidence: 0.925540041111111

00:06:14.090 --> 00:06:16.092 which I've spent a lot of my

NOTE Confidence: 0.925540041111111

00:06:16.092 --> 00:06:16.950 career focusing on,

NOTE Confidence: 0.925540041111111

00:06:16.950 --> 00:06:19.570 and this newer provisional category,

NOTE Confidence: 0.925540041111111

00:06:19.570 --> 00:06:20.490 called Entracque,

NOTE Confidence: 0.925540041111111

00:06:20.490 --> 00:06:22.330 rearranged spindle cell neoplasms,

NOTE Confidence: 0.925540041111111

00:06:22.330 --> 00:06:23.860 which was a new entity.

NOTE Confidence: 0.925540041111111

00:06:23.860 --> 00:06:25.900 In the recent edition of the

NOTE Confidence: 0.925540041111111

00:06:25.900 --> 00:06:28.130 5th edition of the 2020 bonus,

NOTE Confidence: 0.925540041111111

00:06:28.130 --> 00:06:31.379 soft tissue WHO.

NOTE Confidence: 0.925540041111111

00:06:31.380 --> 00:06:31.995 As alluded to,

NOTE Confidence: 0.925540041111111

00:06:31.995 --> 00:06:34.293 I do need to disclose that I serve as a

NOTE Confidence: 0.925540041111111

00:06:34.293 --> 00:06:35.913 consultant for the conglomerate of Bear,

NOTE Confidence: 0.925540041111111

00:06:35.920 --> 00:06:38.878 Laakso and Illy Eli Lilly Pharmaceuticals.

NOTE Confidence: 0.925540041111111

00:06:38.880 --> 00:06:42.270 This has to do with the work

NOTE Confidence: 0.925540041111111

00:06:42.270 --> 00:06:45.490 within tyrosine kinase inhibitors.

NOTE Confidence: 0.925540041111111

00:06:45.490 --> 00:06:45.793 So,

NOTE Confidence: 0.925540041111111

00:06:45.793 --> 00:06:47.914 as a pathologist I like to start

NOTE Confidence: 0.925540041111111

00:06:47.914 --> 00:06:48.930 with the case.

NOTE Confidence: 0.925540041111111

00:06:48.930 --> 00:06:51.210 I think it's very Lester Tieve

NOTE Confidence: 0.925540041111111

00:06:51.210 --> 00:06:53.689 as we get through this topic.

NOTE Confidence: 0.925540041111111

00:06:53.690 --> 00:06:57.089 So this is a case that I first became

NOTE Confidence: 0.925540041111111

00:06:57.089 --> 00:06:59.104 interested in and track tumors.

NOTE Confidence: 0.925540041111111

00:06:59.110 --> 00:07:02.890 So this patient initially presented in 2011.

NOTE Confidence: 0.925540041111111

00:07:02.890 --> 00:07:06.110 This was an infant boy who presented

NOTE Confidence: 0.925540041111111

00:07:06.110 --> 00:07:09.098 at birth with somewhat of an ambiguous

NOTE Confidence: 0.925540041111111

00:07:09.098 --> 00:07:11.510 mass or asymmetry of his foot,

NOTE Confidence: 0.925540041111111

00:07:11.510 --> 00:07:13.010 and there was a biopsy performed

NOTE Confidence: 0.925540041111111

00:07:13.010 --> 00:07:15.017 at 9 days of age and that was.

NOTE Confidence: 0.925540041111111

00:07:15.020 --> 00:07:16.912 Subsequently followed by resection.

NOTE Confidence: 0.925540041111111

00:07:16.912 --> 00:07:19.750 This is a photomicrograph of that

NOTE Confidence: 0.925540041111111

00:07:19.823 --> 00:07:22.480 resection and you can kind of see

NOTE Confidence: 0.925540041111111

00:07:22.480 --> 00:07:24.572 the spectrum of morphology seen at

NOTE Confidence: 0.925540041111111

00:07:24.572 --> 00:07:27.066 this low power image. On the right.

NOTE Confidence: 0.925540041111111

00:07:27.066 --> 00:07:29.418 You can see these somewhat monotonous

NOTE Confidence: 0.925540041111111

00:07:29.418 --> 00:07:31.565 land spindle cells infiltrating

NOTE Confidence: 0.925540041111111

00:07:31.565 --> 00:07:33.245 into skeletal muscle.

NOTE Confidence: 0.925540041111111

00:07:33.250 --> 00:07:35.133 Over here on the right you can

NOTE Confidence: 0.925540041111111

00:07:35.133 --> 00:07:36.534 see them infiltrating into fiber

NOTE Confidence: 0.925540041111111

00:07:36.534 --> 00:07:38.148 adipose tissue in the center of

NOTE Confidence: 0.925540041111111

00:07:38.148 --> 00:07:39.764 the photo micrograph and more

NOTE Confidence: 0.925540041111111

00:07:39.764 --> 00:07:41.469 cellular confluence of sheets of

NOTE Confidence: 0.925540041111111

00:07:41.469 --> 00:07:42.970 spindle cells on the left.

NOTE Confidence: 0.86661655125

00:07:45.850 --> 00:07:47.875 This is the same tumor

NOTE Confidence: 0.86661655125

00:07:47.875 --> 00:07:49.090 at higher magnification.

NOTE Confidence: 0.86661655125

00:07:49.090 --> 00:07:51.862 Again, looking at the end of the

NOTE Confidence: 0.86661655125

00:07:51.862 --> 00:07:53.950 individual cell cyto morphology,

NOTE Confidence: 0.86661655125

00:07:53.950 --> 00:07:57.743 the tumor cells are bland within this tumor,

NOTE Confidence: 0.86661655125

00:07:57.743 --> 00:08:00.269 that mitotic rate was quite low.

NOTE Confidence: 0.86661655125

00:08:00.270 --> 00:08:02.321 At highest you could get to about

NOTE Confidence: 0.86661655125

00:08:02.321 --> 00:08:04.770 2 mites and 10 higher power fields,

NOTE Confidence: 0.86661655125

00:08:04.770 --> 00:08:06.650 but cells are ovoid,

NOTE Confidence: 0.86661655125

00:08:06.650 --> 00:08:07.590 somewhat primitive,

NOTE Confidence: 0.86661655125

00:08:07.590 --> 00:08:09.228 looking in a collagenase to mix

NOTE Confidence: 0.86661655125

00:08:09.228 --> 00:08:10.811 with drama but quite infiltrative

NOTE Confidence: 0.86661655125

00:08:10.811 --> 00:08:12.555 infiltrating between the individual

NOTE Confidence: 0.86661655125

00:08:12.555 --> 00:08:14.735 skeletal muscle fibers or reaching

NOTE Confidence: 0.86661655125

00:08:14.790 --> 00:08:16.438 in somewhat fibrous septae

NOTE Confidence: 0.86661655125

00:08:16.438 --> 00:08:17.674 between fibroadipose tissue.

NOTE Confidence: 0.86661655125

00:08:17.680 --> 00:08:19.444 But other areas were more cellular

NOTE Confidence: 0.86661655125

00:08:19.444 --> 00:08:21.289 in confluent sheets of tumor cells.

NOTE Confidence: 0.821990636363636

00:08:23.800 --> 00:08:25.704 So the initial biopsy in the resection

NOTE Confidence: 0.821990636363636

00:08:25.704 --> 00:08:26.930 specimen looked quite similar,

NOTE Confidence: 0.821990636363636

00:08:26.930 --> 00:08:29.440 both histologically and by immunophenotype,

NOTE Confidence: 0.821990636363636

00:08:29.440 --> 00:08:33.688 that IHC profile was fairly nonspecific,

NOTE Confidence: 0.821990636363636

00:08:33.690 --> 00:08:39.290 with patchy expression of SMAD CD34

NOTE Confidence: 0.821990636363636

00:08:39.290 --> 00:08:41.340 and beta catenin were negative.

NOTE Confidence: 0.821990636363636

00:08:41.340 --> 00:08:43.260 Classic curious type was performed.

NOTE Confidence: 0.821990636363636

00:08:43.260 --> 00:08:44.688 I'm not sure if you still

NOTE Confidence: 0.821990636363636

00:08:44.688 --> 00:08:46.400 do this at your institution.

NOTE Confidence: 0.821990636363636

00:08:46.400 --> 00:08:49.256 I think that this is largely going away,

NOTE Confidence: 0.821990636363636

00:08:49.260 --> 00:08:50.964 although I would argue

NOTE Confidence: 0.821990636363636

00:08:50.964 --> 00:08:52.668 there's still some utility.

NOTE Confidence: 0.821990636363636

00:08:52.670 --> 00:08:55.393 And trisomy eight was present in classic

NOTE Confidence: 0.821990636363636

00:08:55.393 --> 00:08:57.505 karyotype and ATV 6 fluorescence

NOTE Confidence: 0.821990636363636

00:08:57.505 --> 00:08:59.685 inside 2 hybridization or fish

NOTE Confidence: 0.821990636363636

00:08:59.685 --> 00:09:01.939 was performed which was negative.

NOTE Confidence: 0.821990636363636

00:09:01.940 --> 00:09:04.946 So at the time of this biopsy and resection,

NOTE Confidence: 0.821990636363636

00:09:04.950 --> 00:09:07.250 a descriptive diagnosis was rendered

NOTE Confidence: 0.821990636363636

00:09:07.250 --> 00:09:10.099 of low grade spindle cell neoplasm

NOTE Confidence: 0.821990636363636

00:09:10.099 --> 00:09:12.943 with a fairly robust comment written

NOTE Confidence: 0.821990636363636

00:09:12.943 --> 00:09:15.536 and a differential diagnosis of

NOTE Confidence: 0.821990636363636

00:09:15.536 --> 00:09:18.824 infantile fibrosarcoma as a diagnostic,

NOTE Confidence: 0.821990636363636

00:09:18.824 --> 00:09:21.350 possibility or some sort of fibromatosis

NOTE Confidence: 0.821990636363636

00:09:21.350 --> 00:09:23.860 and if this were some sort of.

NOTE Confidence: 0.821990636363636

00:09:23.860 --> 00:09:26.120 Fibromatosis really the question is,

NOTE Confidence: 0.821990636363636

00:09:26.120 --> 00:09:27.503 well, what type?

NOTE Confidence: 0.821990636363636

00:09:27.503 --> 00:09:29.347 This wasn't classic morphology

NOTE Confidence: 0.821990636363636

00:09:29.347 --> 00:09:31.845 for a desmoid type fibromatosis

NOTE Confidence: 0.821990636363636

00:09:31.845 --> 00:09:34.435 and beta catenin was negative.

NOTE Confidence: 0.821990636363636

00:09:34.440 --> 00:09:35.268 I'll be it.

NOTE Confidence: 0.821990636363636

00:09:35.268 --> 00:09:35.820 We know.

NOTE Confidence: 0.821990636363636

00:09:35.820 --> 00:09:38.970 Particularly in infantile forms of desmoid,

NOTE Confidence: 0.821990636363636

00:09:38.970 --> 00:09:41.028 often beta catenin could be negative and

NOTE Confidence: 0.821990636363636

00:09:41.028 --> 00:09:43.500 upward of 25% of cases, although again,

NOTE Confidence: 0.821990636363636

00:09:43.500 --> 00:09:46.516 the morphology was not classic for for this.

NOTE Confidence: 0.821990636363636

00:09:46.520 --> 00:09:49.224 Could this be some sort of Lipo fibromatosis?

NOTE Confidence: 0.821990636363636

00:09:49.230 --> 00:09:49.518 Again,

NOTE Confidence: 0.821990636363636

00:09:49.518 --> 00:09:51.534 the morphology is not classic for this.

NOTE Confidence: 0.821990636363636

00:09:51.540 --> 00:09:54.288 There were cellular areas and so.

NOTE Confidence: 0.821990636363636

00:09:54.290 --> 00:09:56.317 I said this was rendered a

NOTE Confidence: 0.821990636363636

00:09:56.317 --> 00:09:57.785 descriptive diagnosis was rendered

NOTE Confidence: 0.821990636363636

00:09:57.785 --> 00:09:59.253 with a differential diagnosis.

NOTE Confidence: 0.94753440625

00:10:01.810 --> 00:10:03.700 So I think it's important for us

NOTE Confidence: 0.94753440625

00:10:03.700 --> 00:10:06.301 to kind of delve into the past to

NOTE Confidence: 0.94753440625

00:10:06.301 --> 00:10:08.615 understand our where we are today

NOTE Confidence: 0.94753440625

00:10:08.615 --> 00:10:10.580 with our understanding of infantile

NOTE Confidence: 0.94753440625

00:10:10.657 --> 00:10:13.165 fibrosarcoma as well as other tumors.

NOTE Confidence: 0.94753440625

00:10:13.170 --> 00:10:16.131 And so you know, where did this

NOTE Confidence: 0.94753440625

00:10:16.131 --> 00:10:17.910 term infantile fibrosarcoma begin?

NOTE Confidence: 0.94753440625

00:10:17.910 --> 00:10:20.776 So this term was first coined in 1976.

NOTE Confidence: 0.94753440625

00:10:20.776 --> 00:10:23.544 In this paper written by Chung and Denzinger.

NOTE Confidence: 0.94753440625

00:10:23.550 --> 00:10:25.290 Prior to this point in time,

NOTE Confidence: 0.94753440625

00:10:25.290 --> 00:10:26.800 other terms were used to

NOTE Confidence: 0.94753440625

00:10:26.800 --> 00:10:28.310 obviously describe the same tumor.

NOTE Confidence: 0.94753440625

00:10:28.310 --> 00:10:30.278 The tumor existed before this paper.

NOTE Confidence: 0.94753440625

00:10:30.280 --> 00:10:32.020 Terms such as just fibrosarcoma,

NOTE Confidence: 0.94753440625

00:10:32.020 --> 00:10:33.324 juvenile fibrosarcoma,

NOTE Confidence: 0.94753440625

00:10:33.324 --> 00:10:36.768 etc were used in this paper,

NOTE Confidence: 0.94753440625

00:10:36.768 --> 00:10:39.380 which was a study out of the FIP,

NOTE Confidence: 0.94753440625

00:10:39.380 --> 00:10:42.056 the Armed Forces Institute of Pathology.

NOTE Confidence: 0.94753440625

00:10:42.060 --> 00:10:44.646 These two authors looked specifically at

NOTE Confidence: 0.94753440625

00:10:44.646 --> 00:10:47.790 tumors only in young pediatric patients,

NOTE Confidence: 0.94753440625

00:10:47.790 --> 00:10:49.750 so it's not that these tumors didn't

00:10:49.750 --> 00:10:51.907 exist in older patients and or adults,

00:10:51.910 --> 00:10:54.232 but they only looked at cases

00:10:54.232 --> 00:10:56.980 in children 5 and under.

00:10:56.980 --> 00:11:01.204 They found 53 cases that they thought

00:11:01.204 --> 00:11:04.596 had recurrent morphologic features and

00:11:04.596 --> 00:11:07.220 some similar clinical demographics.

00:11:07.220 --> 00:11:09.170 This included ultimately children from

00:11:09.170 --> 00:11:12.340 birth to four years of age with a median.

00:11:12.340 --> 00:11:13.720 Age of three months.

00:11:13.720 --> 00:11:16.703 The locations are what we now kind of

00:11:16.703 --> 00:11:19.235 except for infantile fibrosarcoma or IFC,

00:11:19.240 --> 00:11:21.140 including locations in the extremities,

00:11:21.140 --> 00:11:22.060 back trunk, head and neck,

00:11:22.060 --> 00:11:23.012 and retroperitoneum.

00:11:23.012 --> 00:11:26.344 They were able to kind of define

00:11:26.344 --> 00:11:28.669 the recurrent morphology.

NOTE Confidence: 0.94753440625

00:11:28.670 --> 00:11:33.010 I'll be it they note in this manuscript

NOTE Confidence: 0.94753440625

00:11:33.010 --> 00:11:35.630 the morphology was quite heterogeneous

NOTE Confidence: 0.94753440625

00:11:35.630 --> 00:11:37.916 with the most common morphologies that

NOTE Confidence: 0.94753440625

00:11:37.916 --> 00:11:40.628 which we know today of spindle cells,

NOTE Confidence: 0.94753440625

00:11:40.630 --> 00:11:41.998 arranged in long fascicles,

NOTE Confidence: 0.94753440625

00:11:41.998 --> 00:11:43.708 including some cases with a

NOTE Confidence: 0.94753440625

00:11:43.708 --> 00:11:45.249 herring bone like morphology,

NOTE Confidence: 0.94753440625

00:11:45.250 --> 00:11:47.266 which is pictured here on the right.

NOTE Confidence: 0.94753440625

00:11:47.270 --> 00:11:49.462 Other cases had spindled,

NOTE Confidence: 0.94753440625

00:11:49.462 --> 00:11:51.654 or primitive stellate cells

NOTE Confidence: 0.94753440625

00:11:51.654 --> 00:11:53.670 arranged haphazardly in a

NOTE Confidence: 0.94753440625

00:11:53.670 --> 00:11:55.350 myxoid to collagenous stroma.

NOTE Confidence: 0.94753440625

00:11:55.350 --> 00:11:56.385 Often with admix,

NOTE Confidence: 0.94753440625

00:11:56.385 --> 00:11:57.765 chronic inflammation and many

NOTE Confidence: 0.94753440625

00:11:57.765 --> 00:11:59.683 cases have what they described

NOTE Confidence: 0.94753440625

00:11:59.683 --> 00:12:01.327 as parasitic vascular pattern,

NOTE Confidence: 0.94753440625

00:12:01.330 --> 00:12:02.670 which we would now probably

NOTE Confidence: 0.94753440625

00:12:02.670 --> 00:12:03.474 described as Hemangioma,

NOTE Confidence: 0.94753440625

00:12:03.480 --> 00:12:07.780 parasitic or branching actrec vessels.

NOTE Confidence: 0.94753440625

00:12:07.780 --> 00:12:09.350 They noted in this paper

NOTE Confidence: 0.94753440625

00:12:09.350 --> 00:12:10.920 that of these 53 cases,

NOTE Confidence: 0.94753440625

00:12:10.920 --> 00:12:13.902 many of them had prior diagnosis

NOTE Confidence: 0.94753440625

00:12:13.902 --> 00:12:17.230 of many other tumor designations,

NOTE Confidence: 0.94753440625

00:12:17.230 --> 00:12:19.614 ranging from schwanoma to

NOTE Confidence: 0.94753440625

00:12:19.614 --> 00:12:22.594 Rhabdomyosarcoma to many other entities,

NOTE Confidence: 0.94753440625

00:12:22.600 --> 00:12:25.168 and indeed only nine of these 53 cases

NOTE Confidence: 0.94753440625

00:12:25.168 --> 00:12:27.247 were actually diagnosed as fibrosarcoma

NOTE Confidence: 0.94753440625

00:12:27.247 --> 00:12:29.527 prior to their histologic review.

NOTE Confidence: 0.94753440625

00:12:29.530 --> 00:12:30.520 So I'm gonna dump this.

NOTE Confidence: 0.94753440625

00:12:30.520 --> 00:12:32.896 I FS 1.0 AKA the old,

NOTE Confidence: 0.94753440625

00:12:32.900 --> 00:12:36.449 although 1976 isn't actually that long ago.

00:12:36.450 --> 00:12:40.358 Moving forward from 1976.

00:12:40.360 --> 00:12:43.528 Morphology really was the mainstay of

00:12:43.528 --> 00:12:45.640 diagnosis for infantile fibrosarcoma.

00:12:45.640 --> 00:12:47.248 In that original manuscript,

00:12:47.248 --> 00:12:49.258 in several manuscripts moving forward,

00:12:49.260 --> 00:12:51.465 it became apparent that using

00:12:51.465 --> 00:12:53.670 conventional karyotype could also be

00:12:53.737 --> 00:12:56.172 a useful diagnostic adjunct because

00:12:56.172 --> 00:12:58.607 there was nonrandom chromosomal gains

00:12:58.682 --> 00:13:01.117 in infantile fibrosarcoma which was

00:13:01.117 --> 00:13:03.552 different than in adult fibrosarcoma,

00:13:03.560 --> 00:13:06.135 which shared similar morphology but

00:13:06.135 --> 00:13:08.710 lacked these nonrandom chromosomal gains.

00:13:08.710 --> 00:13:10.141 Specifically nonrandom chromosomal.

00:13:10.141 --> 00:13:13.480 Gains could be seen in chromosomes 2,

NOTE Confidence: 0.94753440625

00:13:13.480 --> 00:13:15.044 eight, 1117 and 20,

NOTE Confidence: 0.94753440625

00:13:15.044 --> 00:13:16.999 and as highlighted in this

NOTE Confidence: 0.94753440625

00:13:16.999 --> 00:13:18.180 specific karyotype,

NOTE Confidence: 0.94753440625

00:13:18.180 --> 00:13:21.268 we can see TRISOMIES in 1117 and 20.

NOTE Confidence: 0.94753440625

00:13:21.270 --> 00:13:23.314 So many manuscripts highlighted

NOTE Confidence: 0.94753440625

00:13:23.314 --> 00:13:25.358 this and moving forward,

NOTE Confidence: 0.94753440625

00:13:25.360 --> 00:13:27.088 particularly through the 70s,

NOTE Confidence: 0.94753440625

00:13:27.088 --> 00:13:28.816 eighties and early 90s.

NOTE Confidence: 0.94753440625

00:13:28.820 --> 00:13:32.026 This was used as a diagnostic adjunct.

NOTE Confidence: 0.94753440625

00:13:32.030 --> 00:13:34.380 And then we reached a really

NOTE Confidence: 0.94753440625

00:13:34.380 --> 00:13:37.014 pivotal moment in 1998 where there

NOTE Confidence: 0.94753440625

00:13:37.014 --> 00:13:39.170 was a paradigm shift in how we

NOTE Confidence: 0.867496481764706

00:13:39.237 --> 00:13:41.532 think about and diagnose infantile

NOTE Confidence: 0.867496481764706

00:13:41.532 --> 00:13:44.586 fiber sarcoma. 2 separate groups,

NOTE Confidence: 0.867496481764706

00:13:44.586 --> 00:13:47.226 including Paul Sorenson's lab up in

NOTE Confidence: 0.867496481764706

21

00:13:47.226 --> 00:13:48.746 British Columbia and Brian Rubin,

NOTE Confidence: 0.867496481764706

00:13:48.750 --> 00:13:52.506 who's now a very well known bonus of

NOTE Confidence: 0.867496481764706

00:13:52.506 --> 00:13:54.474 tissue pathologist at the Cleveland Clinic.

NOTE Confidence: 0.867496481764706

00:13:54.480 --> 00:13:59.135 Both of these groups identified a novel

NOTE Confidence: 0.867496481764706

00:13:59.135 --> 00:14:02.124 and recurrent translocation and 12 to.

NOTE Confidence: 0.867496481764706

00:14:02.124 --> 00:14:04.203 Health 15, which is the ET V6

NOTE Confidence: 0.867496481764706

00:14:04.203 --> 00:14:07.157 and track 3 gene fusion in both

NOTE Confidence: 0.867496481764706

00:14:07.157 --> 00:14:09.353 infantile fibrosarcoma as well as

NOTE Confidence: 0.867496481764706

00:14:09.353 --> 00:14:11.705 the analogous tumor in the kidney.

NOTE Confidence: 0.867496481764706

00:14:11.710 --> 00:14:12.964 Congenital mesoblastic nephroma,

NOTE Confidence: 0.867496481764706

00:14:12.964 --> 00:14:15.890 which is highlighted both in break apart

NOTE Confidence: 0.867496481764706

00:14:15.949 --> 00:14:17.869 fish for ETV Six which I'm sure many

NOTE Confidence: 0.867496481764706

00:14:17.869 --> 00:14:20.332 of us are very familiar with which is

NOTE Confidence: 0.867496481764706

00:14:20.332 --> 00:14:22.464 really become a mainstay of diagnosis.

NOTE Confidence: 0.867496481764706

00:14:22.464 --> 00:14:23.730 For these tumors.

NOTE Confidence: 0.867496481764706

00:14:23.730 --> 00:14:27.114 From this point on as well as by

NOTE Confidence: 0.867496481764706

00:14:27.114 --> 00:14:29.524 classic singer sequencing and so,

NOTE Confidence: 0.867496481764706

00:14:29.524 --> 00:14:31.216 this was really a pivotal moment

NOTE Confidence: 0.867496481764706

00:14:31.216 --> 00:14:32.380 in how we think.

NOTE Confidence: 0.867496481764706

00:14:32.380 --> 00:14:34.129 About infantile fibrosarcoma.

NOTE Confidence: 0.867496481764706

00:14:34.129 --> 00:14:37.044 Because this genetic translocation was

NOTE Confidence: 0.867496481764706

00:14:37.044 --> 00:14:39.739 identified in a very high frequency

NOTE Confidence: 0.867496481764706

00:14:39.739 --> 00:14:42.274 in these two tumor types and so

NOTE Confidence: 0.867496481764706

00:14:42.274 --> 00:14:44.773 moving on from this point in time,

NOTE Confidence: 0.867496481764706

00:14:44.780 --> 00:14:46.410 this was identified in upward

NOTE Confidence: 0.867496481764706

00:14:46.410 --> 00:14:48.310 of 70 to 90% of cases,

NOTE Confidence: 0.867496481764706

00:14:48.310 --> 00:14:50.080 and so this could be used

NOTE Confidence: 0.867496481764706

00:14:50.080 --> 00:14:51.930 as a diagnostic tool.

NOTE Confidence: 0.867496481764706

00:14:51.930 --> 00:14:53.820 So going back to the original case,

NOTE Confidence: 0.867496481764706

00:14:53.820 --> 00:14:56.868 I shared this case recurred three

NOTE Confidence: 0.867496481764706

00:14:56.868 --> 00:14:58.392 years following presentation.

NOTE Confidence: 0.867496481764706

00:14:58.400 --> 00:15:01.392 We're now at about 2014 and

NOTE Confidence: 0.867496481764706

00:15:01.392 --> 00:15:03.466 excisional biopsy, excuse me, and.

NOTE Confidence: 0.867496481764706

00:15:03.466 --> 00:15:05.996 Incisional biopsy was performed on

NOTE Confidence: 0.867496481764706

00:15:05.996 --> 00:15:08.570 that recurrence which now shows.

NOTE Confidence: 0.867496481764706

00:15:08.570 --> 00:15:10.295 Recurrence is the much more

NOTE Confidence: 0.867496481764706

00:15:10.295 --> 00:15:10.985 cellular component,

NOTE Confidence: 0.867496481764706

00:15:10.990 --> 00:15:13.514 arranged in long fascicles.

NOTE Confidence: 0.867496481764706

00:15:13.514 --> 00:15:16.038 Some admixed chronic inflammation

NOTE Confidence: 0.867496481764706

00:15:16.040 --> 00:15:16.922 scattered mitoses,

NOTE Confidence: 0.867496481764706

00:15:16.922 --> 00:15:20.450 but still the mitotic rate is fairly low.

NOTE Confidence: 0.867496481764706

00:15:20.450 --> 00:15:23.018 My toes is in this case were about

NOTE Confidence: 0.867496481764706

00:15:23.018 --> 00:15:25.662 5:00 and 10:00 at this point in

NOTE Confidence: 0.867496481764706

00:15:25.662 --> 00:15:27.602 time the diagnosis still remained

NOTE Confidence: 0.867496481764706

00:15:27.602 --> 00:15:28.850 somewhat descriptive,

NOTE Confidence: 0.867496481764706

00:15:28.850 --> 00:15:31.310 unclassified spindle cell sarcoma,

NOTE Confidence: 0.867496481764706

00:15:31.310 --> 00:15:34.385 but now really favoring infantile

NOTE Confidence: 0.867496481764706

00:15:34.385 --> 00:15:36.182 fibrosarcoma despite the lack

NOTE Confidence: 0.867496481764706

00:15:36.182 --> 00:15:37.654 of any TV sticks.

NOTE Confidence: 0.867496481764706

00:15:37.660 --> 00:15:39.332 Rearrangement by fish and

NOTE Confidence: 0.867496481764706

00:15:39.332 --> 00:15:41.840 again at this point in time,

NOTE Confidence: 0.867496481764706

00:15:41.840 --> 00:15:44.396 in the way most pathologists practiced,

NOTE Confidence: 0.867496481764706

00:15:44.400 --> 00:15:45.864 without having an ATV.

NOTE Confidence: 0.867496481764706

00:15:45.864 --> 00:15:47.694 16 we arrangement because of

NOTE Confidence: 0.867496481764706

00:15:47.694 --> 00:15:49.832 that pivotal moment from 1998

NOTE Confidence: 0.867496481764706

00:15:49.832 --> 00:15:52.092 most people relied very heavily

NOTE Confidence: 0.867496481764706

00:15:52.092 --> 00:15:54.725 on identification of that ETV 6

NOTE Confidence: 0.867496481764706

00:15:54.725 --> 00:15:57.104 and track 3 gene rearrangement to

NOTE Confidence: 0.867496481764706

00:15:57.104 --> 00:15:59.120 diagnose infantile fiber sarcoma.

NOTE Confidence: 0.867496481764706

00:15:59.120 --> 00:16:00.278 This wasn't universal,

NOTE Confidence: 0.867496481764706

00:16:00.278 --> 00:16:02.208 and some institutions still would

NOTE Confidence: 0.867496481764706

00:16:02.208 --> 00:16:03.800 diagnose based on morphology,

NOTE Confidence: 0.867496481764706

00:16:03.800 --> 00:16:06.096 and that's what happened in this case,

NOTE Confidence: 0.867496481764706

00:16:06.100 --> 00:16:08.220 so following this diagnosis.

NOTE Confidence: 0.867496481764706

00:16:08.220 --> 00:16:10.340 The patient underwent chemotherapy,

NOTE Confidence: 0.867496481764706

00:16:10.340 --> 00:16:12.540 including two cycles of ifosfamide

NOTE Confidence: 0.867496481764706

00:16:12.540 --> 00:16:13.420 and doxorubicin,

NOTE Confidence: 0.867496481764706

00:16:13.420 --> 00:16:15.597 and then two cycles of ifosfamide alone.

NOTE Confidence: 0.867496481764706

00:16:15.600 --> 00:16:16.085 Unfortunately,

NOTE Confidence: 0.867496481764706

00:16:16.085 --> 00:16:18.510 the tumor continued to progress,

NOTE Confidence: 0.867496481764706

00:16:18.510 --> 00:16:20.670 and the patient underwent amputation.

NOTE Confidence: 0.841494113333333

00:16:23.080 --> 00:16:24.910 Here are some other photo

NOTE Confidence: 0.841494113333333

00:16:24.910 --> 00:16:26.374 micrographs of this tumor,

NOTE Confidence: 0.841494113333333

00:16:26.380 --> 00:16:29.260 demonstrating that there was significant

NOTE Confidence: 0.841494113333333

00:16:29.260 --> 00:16:30.988 intratumoral heterogeneity with

NOTE Confidence: 0.841494113333333

00:16:30.988 --> 00:16:33.966 other areas of the tumor having

NOTE Confidence: 0.841494113333333

00:16:33.966 --> 00:16:35.714 more significant myxoid stroma.

NOTE Confidence: 0.841494113333333

00:16:35.720 --> 00:16:38.261 There are areas of vascular highly gnosis

NOTE Confidence: 0.841494113333333

00:16:38.261 --> 00:16:40.560 which just this very eastern feel,

NOTE Confidence: 0.841494113333333

00:16:40.560 --> 00:16:43.434 like highland deposition around the vessels

NOTE Confidence: 0.841494113333333

00:16:43.434 --> 00:16:46.999 as well as increased chronic inflammation.

NOTE Confidence: 0.841494113333333

00:16:47.000 --> 00:16:49.028 The immunohistochemical profile remained

NOTE Confidence: 0.841494113333333

00:16:49.028 --> 00:16:52.361 unchanged with no expression of S 100

NOTE Confidence: 0.841494113333333

00:16:52.361 --> 00:16:56.470 or CD 34, but Patchy SM expression.

NOTE Confidence: 0.841494113333333

00:16:56.470 --> 00:16:58.714 Unfortunately, one year later,

NOTE Confidence: 0.841494113333333

00:16:58.714 --> 00:17:00.926 the patient presented with

NOTE Confidence: 0.841494113333333

00:17:00.926 --> 00:17:03.556 difficulty breathing was found to

NOTE Confidence: 0.841494113333333

00:17:03.556 --> 00:17:05.660 have innumerous lung metastasis,

NOTE Confidence: 0.841494113333333

00:17:05.660 --> 00:17:07.840 and on Histology the lung

NOTE Confidence: 0.841494113333333

00:17:07.840 --> 00:17:09.584 metastasis was very reminiscent.

NOTE Confidence: 0.841494113333333

00:17:09.590 --> 00:17:13.200 His original tumor and subsequent

NOTE Confidence: 0.841494113333333

00:17:13.200 --> 00:17:16.810 recurrence again with fibroblastic spindle

NOTE Confidence: 0.841494113333333

00:17:16.914 --> 00:17:21.218 cells arranged in these fascicles.

NOTE Confidence: 0.841494113333333

00:17:21.220 --> 00:17:22.340 At this point in time,

NOTE Confidence: 0.841494113333333

00:17:22.340 --> 00:17:25.020 this is now circa 2015,

NOTE Confidence: 0.841494113333333

00:17:25.020 --> 00:17:28.020 2016 and luckily our understanding of

NOTE Confidence: 0.841494113333333

00:17:28.020 --> 00:17:31.479 these ETV six negative spindle cell

NOTE Confidence: 0.841494113333333

00:17:31.479 --> 00:17:34.594 tumors with Histology reminiscent IFZ

NOTE Confidence: 0.841494113333333

00:17:34.594 --> 00:17:37.034 had changed and we'll get into this a

NOTE Confidence: 0.841494113333333

00:17:37.034 --> 00:17:38.786 little bit more detail at this point in time.

NOTE Confidence: 0.841494113333333

00:17:38.790 --> 00:17:40.630 A pan track antibody was

NOTE Confidence: 0.841494113333333

00:17:40.630 --> 00:17:42.102 applied to this tumor,

NOTE Confidence: 0.841494113333333

00:17:42.110 --> 00:17:44.274 demonstrated here with diffuse

NOTE Confidence: 0.841494113333333

00:17:44.274 --> 00:17:46.979 cytoplasmic staining by Pan Track,

NOTE Confidence: 0.841494113333333

00:17:46.980 --> 00:17:49.640 IHC and next generation sequencing.

NOTE Confidence: 0.841494113333333

00:17:49.640 --> 00:17:51.840 At this point in time by a DNA

NOTE Confidence: 0.841494113333333

00:17:51.840 --> 00:17:53.190 hybrid capture methodology.

NOTE Confidence: 0.841494113333333

00:17:53.190 --> 00:17:56.135 Was performed which demonstrated ATP

NOTE Confidence: 0.841494113333333

00:17:56.135 --> 00:18:00.660 M3 and Track 1 gene rearrangement.

00:18:00.660 --> 00:18:04.530 So let's delve into end track for a minute.

00:18:04.530 --> 00:18:05.890 What is end track?

00:18:05.890 --> 00:18:06.230 Well,

00:18:06.230 --> 00:18:07.964 end track is actually a family

00:18:07.964 --> 00:18:10.154 of genes which encode a series of

00:18:10.154 --> 00:18:11.769 tropomyosin receptor kinase is there

00:18:11.769 --> 00:18:13.809 are three of them and track 1/2

00:18:13.809 --> 00:18:15.610 and three which encode the proteins

00:18:15.610 --> 00:18:16.990 Trek AB&C respectively.

00:18:16.990 --> 00:18:19.290 In normal development these play

00:18:19.290 --> 00:18:21.269 a really integral role,

00:18:21.270 --> 00:18:23.034 particularly in embryologic

00:18:23.034 --> 00:18:24.210 neural development.

00:18:24.210 --> 00:18:26.450 There's been a lot of work done

00:18:26.450 --> 00:18:28.578 by Eric Wong at UCSF on this.

00:18:28.580 --> 00:18:30.086 Unfortunately don't have time to go

00:18:30.086 --> 00:18:32.510 into details. That's very fascinating.

00:18:32.510 --> 00:18:33.790 In adults.

00:18:33.790 --> 00:18:35.974 There is probably still some role of

00:18:35.974 --> 00:18:37.505 entracque in synaptic pruning again

00:18:37.505 --> 00:18:39.388 and have time to get into this,

00:18:39.390 --> 00:18:40.482 but very fascinating.

00:18:40.482 --> 00:18:41.210 In general,

00:18:41.210 --> 00:18:43.170 these play a role in cell cycle regulation,

00:18:43.170 --> 00:18:45.306 cellular proliferation and cell

00:18:45.306 --> 00:18:45.840 differentiation.

00:18:45.840 --> 00:18:47.268 What we're going to focus on today,

00:18:47.270 --> 00:18:50.570 though, is end tracking cancer.

00:18:50.570 --> 00:18:51.137 So you know,

00:18:51.137 --> 00:18:52.803 while I am a bone and soft tissue

00:18:52.803 --> 00:18:54.278 in pediatric pathologist and we're

NOTE Confidence: 0.841494113333333

00:18:54.278 --> 00:18:56.055 gonna spend most of our time

NOTE Confidence: 0.841494113333333

00:18:56.055 --> 00:18:56.868 talking about that.

NOTE Confidence: 0.841494113333333

00:18:56.870 --> 00:18:57.414 Interestingly,

NOTE Confidence: 0.841494113333333

00:18:57.414 --> 00:19:00.678 Entrekin cancer was actually first described

NOTE Confidence: 0.841494113333333

00:19:00.678 --> 00:19:03.510 in the 1980s in colorectal cancer.

NOTE Confidence: 0.841494113333333

00:19:03.510 --> 00:19:05.685 So timeline of Discovery actually

NOTE Confidence: 0.841494113333333

00:19:05.685 --> 00:19:07.259 begins back in the 1980s.

NOTE Confidence: 0.841494113333333

00:19:07.259 --> 00:19:09.473 Not a lot of press was

NOTE Confidence: 0.841494113333333

00:19:09.473 --> 00:19:11.910 made at that point in time,

NOTE Confidence: 0.841494113333333

00:19:11.910 --> 00:19:14.340 because in track in carcinomas

NOTE Confidence: 0.841494113333333

00:19:14.340 --> 00:19:16.770 occur at very low frequencies.

NOTE Confidence: 0.841494113333333

00:19:16.770 --> 00:19:18.888 So we're talking less than 1%.

NOTE Confidence: 0.841494113333333

00:19:18.890 --> 00:19:20.030 Most of these.

NOTE Confidence: 0.841494113333333

00:19:20.030 --> 00:19:23.254 Maybe upward of 2% in colorectal cancer.

NOTE Confidence: 0.841494113333333

00:19:23.254 --> 00:19:26.662 Moving forward to the late 80s.

NOTE Confidence: 0.841494113333333

00:19:26.670 --> 00:19:28.926 In Trek 1 fusions were described

NOTE Confidence: 0.841494113333333

00:19:28.926 --> 00:19:30.430 in papillary thyroid carcinoma.

NOTE Confidence: 0.841494113333333

00:19:30.430 --> 00:19:33.510 This is kind of an intermediate frequency,

NOTE Confidence: 0.841494113333333

00:19:33.510 --> 00:19:35.790 particularly in pediatric.

NOTE Confidence: 0.841494113333333

00:19:35.790 --> 00:19:37.310 PT sees.

NOTE Confidence: 0.841494113333333

00:19:37.310 --> 00:19:39.046 Fusions occur at higher

NOTE Confidence: 0.841494113333333

00:19:39.046 --> 00:19:40.348 frequency frequency than,

NOTE Confidence: 0.841494113333333

00:19:40.350 --> 00:19:42.354 say adults where B RAF point

NOTE Confidence: 0.841494113333333

00:19:42.354 --> 00:19:44.210 mutations are much more common,

NOTE Confidence: 0.841494113333333

00:19:44.210 --> 00:19:46.870 but really this was kind of underated.

NOTE Confidence: 0.841494113333333

00:19:46.870 --> 00:19:48.364 Discoveries, interesting biologically,

NOTE Confidence: 0.841494113333333

00:19:48.364 --> 00:19:49.858 but really this.

NOTE Confidence: 0.841494113333333

00:19:49.860 --> 00:19:51.934 Pivotal moment again was in 1998,

NOTE Confidence: 0.841494113333333

00:19:51.934 --> 00:19:53.430 where ENTRACQUE gene fusions

NOTE Confidence: 0.841494113333333

00:19:53.430 --> 00:19:55.684 were discovered in a tumor where

NOTE Confidence: 0.841494113333333

00:19:55.684 --> 00:19:57.562 they occurred at a high frequency

NOTE Confidence: 0.841494113333333

00:19:57.562 --> 00:19:58.501 and at this

NOTE Confidence: 0.854546992666667

00:19:58.567 --> 00:20:01.023 point in time the the game kind of

NOTE Confidence: 0.854546992666667

00:20:01.023 --> 00:20:03.070 changed because now end track could be

NOTE Confidence: 0.854546992666667

00:20:03.070 --> 00:20:04.871 used as a diagnostic adjunct because

NOTE Confidence: 0.854546992666667

00:20:04.871 --> 00:20:07.076 it occurred at such a high frequency.

NOTE Confidence: 0.854546992666667

00:20:07.080 --> 00:20:09.576 Then again there was kind of this lulove.

NOTE Confidence: 0.854546992666667

00:20:09.580 --> 00:20:11.080 Yes, this is interesting.

NOTE Confidence: 0.854546992666667

00:20:11.080 --> 00:20:14.400 We can use it diagnostically until kind of

NOTE Confidence: 0.854546992666667

00:20:14.400 --> 00:20:17.760 about the time of this patients metastasis,

NOTE Confidence: 0.854546992666667

00:20:17.760 --> 00:20:19.970 because something else different unchanged.

NOTE Confidence: 0.854546992666667

00:20:19.970 --> 00:20:22.000 Have no tank and have changed this

NOTE Confidence: 0.854546992666667

00:20:22.000 --> 00:20:24.376 figure a little bit because an important

NOTE Confidence: 0.854546992666667

00:20:24.376 --> 00:20:26.536 thing that happened was we introduced

NOTE Confidence: 0.854546992666667

00:20:26.601 --> 00:20:28.731 next generation sequencing into the

NOTE Confidence: 0.854546992666667

00:20:28.731 --> 00:20:30.448 clinical realm and then another

NOTE Confidence: 0.854546992666667

00:20:30.448 --> 00:20:32.058 important thing that happened was

NOTE Confidence: 0.854546992666667

00:20:32.058 --> 00:20:34.049 first generation in truck inhibitors.

NOTE Confidence: 0.854546992666667

00:20:34.050 --> 00:20:37.530 Entered clinical trial testing and

NOTE Confidence: 0.854546992666667

00:20:37.530 --> 00:20:39.560 so with this and with the development

NOTE Confidence: 0.854546992666667

00:20:39.560 --> 00:20:41.710 of these new pharmaceutical agents,

NOTE Confidence: 0.854546992666667

00:20:41.710 --> 00:20:44.464 including Larry checked and interest and

NOTE Confidence: 0.854546992666667

00:20:44.464 --> 00:20:47.884 if getting FDA approval for treatment of

NOTE Confidence: 0.854546992666667

00:20:47.884 --> 00:20:50.394 entracque fusion positive solid tumors.

NOTE Confidence: 0.854546992666667

00:20:50.400 --> 00:20:52.682 Now discovery of end track fusions not

NOTE Confidence: 0.854546992666667

00:20:52.682 --> 00:20:55.480 only could be used as diagnostic adjuncts,

NOTE Confidence: 0.854546992666667

00:20:55.480 --> 00:20:57.965 they actually were predictive of

NOTE Confidence: 0.854546992666667

00:20:57.965 --> 00:21:00.450 therapeutic response and so this

NOTE Confidence: 0.854546992666667

00:21:00.531 --> 00:21:03.920 really led to a lot of excitement in

NOTE Confidence: 0.854546992666667

00:21:03.920 --> 00:21:06.260 clinical treatment as well As for

NOTE Confidence: 0.854546992666667

00:21:06.260 --> 00:21:08.674 testing and wanting to make sure

NOTE Confidence: 0.854546992666667

00:21:08.674 --> 00:21:11.014 we could discover these tumors and

00:21:11.014 --> 00:21:13.428 diagnose diagnose them appropriately.

00:21:13.430 --> 00:21:15.530 This led to an explosion of

00:21:15.530 --> 00:21:16.494 literature in pathology.

00:21:16.494 --> 00:21:18.950 This led to an explosion of kind of

00:21:19.022 --> 00:21:21.407 revisiting morphology of these tumors.

00:21:21.410 --> 00:21:25.519 So between 2016 and 2019 there was

00:21:25.519 --> 00:21:28.544 numerous publications going back and

00:21:28.544 --> 00:21:32.024 looking at these tumors with nonclassic,

00:21:32.030 --> 00:21:33.974 the noncanonical translocations

00:21:33.974 --> 00:21:36.566 and re describing them.

00:21:36.570 --> 00:21:38.824 Some were described as fibromatosis like some

00:21:38.824 --> 00:21:41.118 were described as having HPC like features,

00:21:41.120 --> 00:21:45.514 some as I FS like some is imt like and

00:21:45.514 --> 00:21:50.727 that really led to the paper that I was.

00:21:50.727 --> 00:21:53.541 We had the fortune of presenting

00:21:53.541 --> 00:21:54.830 Mylotte Strauss.

NOTE Confidence: 0.854546992666667

00:21:54.830 --> 00:21:56.735 Presentation on which was this

NOTE Confidence: 0.854546992666667

00:21:56.735 --> 00:21:59.109 paper that we published in a JSP,

NOTE Confidence: 0.854546992666667

00:21:59.110 --> 00:22:01.896 really looking at a the largest series

NOTE Confidence: 0.854546992666667

00:22:01.896 --> 00:22:04.698 to date of molecularly characterized

NOTE Confidence: 0.854546992666667

00:22:04.698 --> 00:22:07.452 pediatric tumors with molecularly

NOTE Confidence: 0.854546992666667

00:22:07.452 --> 00:22:09.300 confirmed entracque January arrangements.

NOTE Confidence: 0.854546992666667

00:22:09.300 --> 00:22:11.764 Our goal of this was to characterize

NOTE Confidence: 0.854546992666667

00:22:11.764 --> 00:22:14.559 these tumors and look at the relationship,

NOTE Confidence: 0.854546992666667

00:22:14.560 --> 00:22:15.760 if any,

NOTE Confidence: 0.854546992666667

00:22:15.760 --> 00:22:19.360 to those ifz harboring the canonically

NOTE Confidence: 0.854546992666667

00:22:19.360 --> 00:22:22.730 TV's eccentric 3 gene rearrangement.

NOTE Confidence: 0.854546992666667

00:22:22.730 --> 00:22:24.740 This is our case selection.

NOTE Confidence: 0.854546992666667

00:22:24.740 --> 00:22:27.176 Most of our cases came from a

NOTE Confidence: 0.854546992666667

00:22:27.176 --> 00:22:29.239 retrospective review from 2 institutions,

NOTE Confidence: 0.854546992666667

00:22:29.240 --> 00:22:31.255 including Seattle Children's with the

36

NOTE Confidence: 0.854546992666667

00:22:31.255 --> 00:22:33.871 help of Doctor Aaron Rasinski and then

NOTE Confidence: 0.854546992666667

00:22:33.871 --> 00:22:36.400 from UCSF where I was faculty at the time.

NOTE Confidence: 0.854546992666667

00:22:36.400 --> 00:22:39.168 A few other cases came from a wonderful

NOTE Confidence: 0.854546992666667

00:22:39.168 --> 00:22:42.070 group of collaborators which we used for

NOTE Confidence: 0.854546992666667

00:22:42.070 --> 00:22:45.430 morphology but not from for outcome studies.

NOTE Confidence: 0.854546992666667

00:22:45.430 --> 00:22:45.898 Ultimately,

NOTE Confidence: 0.854546992666667

00:22:45.898 --> 00:22:47.770 we had 30 patients,

NOTE Confidence: 0.854546992666667

00:22:47.770 --> 00:22:50.378 which doesn't seem like a lot for large

NOTE Confidence: 0.854546992666667

00:22:50.378 --> 00:22:52.160 clinical trials between New Years,

NOTE Confidence: 0.854546992666667

00:22:52.160 --> 00:22:53.428 studying very rare tumors.

NOTE Confidence: 0.854546992666667

00:22:53.428 --> 00:22:55.013 It's actually like I said,

NOTE Confidence: 0.854546992666667

00:22:55.020 --> 00:22:57.010 the largest cohort to date.

NOTE Confidence: 0.854546992666667

00:22:57.010 --> 00:23:00.356 We had 12 classic fusions and 18

NOTE Confidence: 0.854546992666667

00:23:00.356 --> 00:23:01.312 variant fusions.

NOTE Confidence: 0.854546992666667

00:23:01.320 --> 00:23:04.204 And you'll note here that there is

NOTE Confidence: 0.854546992666667

00:23:04.204 --> 00:23:07.199 a variety of diagnosis rendered.

NOTE Confidence: 0.854546992666667

00:23:07.200 --> 00:23:09.228 The cases that were diagnosed as

NOTE Confidence: 0.854546992666667

00:23:09.228 --> 00:23:11.709 IFS up front were those cases where

NOTE Confidence: 0.854546992666667

00:23:11.709 --> 00:23:14.173 we could confirm with fish for ETV

NOTE Confidence: 0.854546992666667

00:23:14.241 --> 00:23:16.166 6 some cases without confirmation

NOTE Confidence: 0.854546992666667

00:23:16.166 --> 00:23:18.683 of fish word called IFC upfront.

NOTE Confidence: 0.854546992666667

00:23:18.683 --> 00:23:19.266 Again,

NOTE Confidence: 0.854546992666667

00:23:19.266 --> 00:23:21.598 that's really institutional preferences.

NOTE Confidence: 0.854546992666667

00:23:21.600 --> 00:23:23.854 If you relied on fish or not,

NOTE Confidence: 0.854546992666667

00:23:23.860 --> 00:23:26.225 you'll note by classic karyotype

NOTE Confidence: 0.854546992666667

00:23:26.225 --> 00:23:28.590 that there were nonrandom chromosomal

NOTE Confidence: 0.885350280555556

00:23:28.663 --> 00:23:30.283 gains in those chromosomes

NOTE Confidence: 0.885350280555556

00:23:30.283 --> 00:23:31.903 I mentioned and both.

NOTE Confidence: 0.885350280555556

00:23:31.910 --> 00:23:33.605 The canonical translocation,

NOTE Confidence: 0.885350280555556

00:23:33.605 --> 00:23:37.560 as well as the non canonical translocations.

NOTE Confidence: 0.885350280555556

00:23:37.560 --> 00:23:40.326 The clinical summary of patients age,

NOTE Confidence: 0.885350280555556

00:23:40.330 --> 00:23:42.498 sex, location and the size of the tumor.

NOTE Confidence: 0.885350280555556

00:23:42.500 --> 00:23:44.905 There was no statistical difference

NOTE Confidence: 0.885350280555556

00:23:44.905 --> 00:23:48.100 between any of the fusion subtypes.

NOTE Confidence: 0.885350280555556

00:23:48.100 --> 00:23:49.465 Really, we wanted to take

NOTE Confidence: 0.885350280555556

00:23:49.465 --> 00:23:50.830 a look at the morphologies.

NOTE Confidence: 0.885350280555556

00:23:50.830 --> 00:23:53.122 The morphologic patterns were

NOTE Confidence: 0.885350280555556

00:23:53.122 --> 00:23:55.987 similar between all fusion subtypes,

NOTE Confidence: 0.885350280555556

00:23:55.990 --> 00:23:58.741 with a few exceptions which I'll point

NOTE Confidence: 0.885350280555556

00:23:58.741 --> 00:24:02.041 out the most common patterns were indeed

NOTE Confidence: 0.885350280555556

00:24:02.041 --> 00:24:05.095 these long fascicles of spindle cells.

NOTE Confidence: 0.885350280555556

00:24:05.100 --> 00:24:07.300 Other tumors second most common

NOTE Confidence: 0.885350280555556

00:24:07.300 --> 00:24:09.060 pattern was haphazardly arranged.

NOTE Confidence: 0.885350280555556

00:24:09.060 --> 00:24:10.955 Delatorre spindle cells in a

NOTE Confidence: 0.885350280555556

00:24:10.955 --> 00:24:12.850 myxoid matrix and many tumors.

NOTE Confidence: 0.885350280555556

00:24:12.850 --> 00:24:15.940 Had these HPC like vessels.

NOTE Confidence: 0.885350280555556

00:24:15.940 --> 00:24:18.140 A couple exceptions existed

NOTE Confidence: 0.885350280555556

00:24:18.140 --> 00:24:19.790 the canonical translocation.

NOTE Confidence: 0.885350280555556

00:24:19.790 --> 00:24:24.487 Fusions were more likely to have abundant,

NOTE Confidence: 0.885350280555556

00:24:24.490 --> 00:24:26.065 chronic inflammatory cells,

NOTE Confidence: 0.885350280555556

00:24:26.065 --> 00:24:28.690 which could be mistaken for

NOTE Confidence: 0.885350280555556

00:24:28.690 --> 00:24:30.538 an IMT and the variant.

NOTE Confidence: 0.885350280555556

00:24:30.538 --> 00:24:32.134 Fusions were more likely to have

NOTE Confidence: 0.885350280555556

00:24:32.134 --> 00:24:34.084 this biphasic pattern, noted here.

NOTE Confidence: 0.885350280555556

00:24:34.084 --> 00:24:37.260 On the bottom left with more collagen eisd

NOTE Confidence: 0.885350280555556

00:24:37.334 --> 00:24:40.568 stroma juxtaposed to a more primitive cells.

NOTE Confidence: 0.885350280555556

00:24:40.570 --> 00:24:42.694 Other patterns that we're

NOTE Confidence: 0.885350280555556

00:24:42.694 --> 00:24:45.349 seeing were a myoid appearance.

NOTE Confidence: 0.885350280555556

00:24:45.350 --> 00:24:46.306 Many of the tumors,

NOTE Confidence: 0.885350280555556

00:24:46.306 --> 00:24:48.155 almost all of them had at least

NOTE Confidence: 0.885350280555556

00:24:48.155 --> 00:24:49.965 focal areas that were fibromatosis.

NOTE Confidence: 0.885350280555556

00:24:49.970 --> 00:24:51.704 Like a few of the tumors

NOTE Confidence: 0.885350280555556

00:24:51.704 --> 00:24:53.290 which has been written about,

NOTE Confidence: 0.885350280555556

00:24:53.290 --> 00:24:55.890 particularly in this provisional category,

NOTE Confidence: 0.885350280555556

00:24:55.890 --> 00:24:58.179 written in The Who of quote and

NOTE Confidence: 0.885350280555556

00:24:58.179 --> 00:24:59.919 track rearranged spindle cell tumors,

NOTE Confidence: 0.885350280555556

00:24:59.920 --> 00:25:01.236 or these prominent hyalinized

NOTE Confidence: 0.885350280555556

00:25:01.236 --> 00:25:03.716 vessels and a few tumors had this

NOTE Confidence: 0.885350280555556

00:25:03.716 --> 00:25:05.488 very prominent nuclear palisading,

NOTE Confidence: 0.885350280555556

00:25:05.490 --> 00:25:08.225 which could be mistaken for

NOTE Confidence: 0.885350280555556

00:25:08.225 --> 00:25:10.960 save Eric bodies in Schwannoma.

NOTE Confidence: 0.885350280555556

00:25:10.960 --> 00:25:12.880 So when I look back at our study

NOTE Confidence: 0.885350280555556

00:25:12.880 --> 00:25:15.007 and I look this time we looked

NOTE Confidence: 0.885350280555556

00:25:15.007 --> 00:25:16.587 at patients 25 and under,

NOTE Confidence: 0.885350280555556

00:25:16.590 --> 00:25:18.165 but yet our median age was still

NOTE Confidence: 0.885350280555556

00:25:18.165 --> 00:25:19.569 four months in the locations,

NOTE Confidence: 0.885350280555556

00:25:19.570 --> 00:25:21.898 essentially the same as in that

NOTE Confidence: 0.885350280555556

00:25:21.898 --> 00:25:23.978 original paper from the 1970s.

NOTE Confidence: 0.885350280555556

00:25:23.978 --> 00:25:25.562 And you know,

NOTE Confidence: 0.885350280555556

00:25:25.562 --> 00:25:29.260 our three common patterns in our main image,

NOTE Confidence: 0.885350280555556

00:25:29.260 --> 00:25:30.840 and I ask myself,

NOTE Confidence: 0.885350280555556

00:25:30.840 --> 00:25:35.444 is this IFS 2.0 AKA the the new and yes,

NOTE Confidence: 0.885350280555556

00:25:35.444 --> 00:25:37.616 we molecularly characterize all this case.

NOTE Confidence: 0.885350280555556

00:25:37.620 --> 00:25:41.250 But I have flashbacks to FS 1.0 AKA the old.

NOTE Confidence: 0.885350280555556

00:25:41.250 --> 00:25:44.307 So I feel like we did a lot of work,

NOTE Confidence: 0.885350280555556

00:25:44.310 --> 00:25:46.560 but I think we can learn a lot from

NOTE Confidence: 0.885350280555556

00:25:46.560 --> 00:25:49.650 the past and attribute a lot to Cheng

NOTE Confidence: 0.885350280555556

00:25:49.650 --> 00:25:52.239 Enzinger where they really did a

NOTE Confidence: 0.885350280555556

00:25:52.239 --> 00:25:54.717 great job of of characterizing the

NOTE Confidence: 0.885350280555556

00:25:54.717 --> 00:25:58.960 morphology of these tumors back in 1976.

NOTE Confidence: 0.885350280555556

00:25:58.960 --> 00:26:00.444 I think we did learn a lot

NOTE Confidence: 0.885350280555556

00:26:00.444 --> 00:26:01.710 from this manuscript, however,

NOTE Confidence: 0.885350280555556

00:26:01.710 --> 00:26:05.490 so looking at those cases where

00:26:05.490 --> 00:26:06.384 fish was performed,

00:26:06.384 --> 00:26:07.874 this is a great example.

00:26:07.880 --> 00:26:10.350 This was a one year old with a very large

00:26:10.416 --> 00:26:12.172 hand mass of 6.4 centimeters and mass

00:26:12.172 --> 00:26:14.699 in a one year old is pretty gigantic.

00:26:14.700 --> 00:26:18.356 We performed hand track I see in all

00:26:18.356 --> 00:26:20.648 of these cases and you can see here

00:26:20.648 --> 00:26:22.514 that we have nice nuclear expression

00:26:22.573 --> 00:26:24.918 suggested that there is indeed a fusion.

00:26:24.920 --> 00:26:26.800 However, the fish was negative.

00:26:26.800 --> 00:26:27.256 However,

00:26:27.256 --> 00:26:29.080 on DNA hybrid capture.

00:26:29.080 --> 00:26:29.848 And yes,

00:26:29.848 --> 00:26:32.536 this indeed actually did have a fusion,

00:26:32.540 --> 00:26:34.892 so we did have a pretty significant

00:26:34.892 --> 00:26:36.935 subset of cases where fish

NOTE Confidence: 0.885350280555556

00:26:36.935 --> 00:26:38.867 essentially were false negatives.

NOTE Confidence: 0.885350280555556

00:26:38.870 --> 00:26:42.150 So going back and looking at our case

NOTE Confidence: 0.885350280555556

00:26:42.150 --> 00:26:44.356 selection of our retrospective review

NOTE Confidence: 0.885350280555556

00:26:44.356 --> 00:26:47.050 cases where we originally started with

NOTE Confidence: 0.868726434166667

00:26:47.127 --> 00:26:49.364 29 cases, we had five cases

NOTE Confidence: 0.868726434166667

00:26:49.364 --> 00:26:51.800 that had positive fish up front.

NOTE Confidence: 0.868726434166667

00:26:51.800 --> 00:26:55.500 We had 18 total cases.

NOTE Confidence: 0.868726434166667

00:26:55.500 --> 00:26:57.375 It didn't have that either

NOTE Confidence: 0.868726434166667

00:26:57.375 --> 00:26:59.540 had fish that was unknown or.

NOTE Confidence: 0.868726434166667

00:26:59.540 --> 00:27:01.380 Not performed or it was

NOTE Confidence: 0.868726434166667

00:27:01.380 --> 00:27:02.852 performed and was negative.

NOTE Confidence: 0.868726434166667

00:27:02.860 --> 00:27:05.680 Six of those ended up having

NOTE Confidence: 0.868726434166667

00:27:05.680 --> 00:27:07.090 Canonical translocation and

NOTE Confidence: 0.868726434166667

00:27:07.090 --> 00:27:09.269 four of those originally had

NOTE Confidence: 0.868726434166667

00:27:09.269 --> 00:27:11.717 ETV 6 fish that was negative,

NOTE Confidence: 0.868726434166667

00:27:11.720 --> 00:27:13.526 so you know what does that mean?

NOTE Confidence: 0.868726434166667

00:27:13.530 --> 00:27:15.329 Well, that means we had a false

NOTE Confidence: 0.868726434166667

00:27:15.329 --> 00:27:16.639 negative rate of our fish.

NOTE Confidence: 0.868726434166667

00:27:16.640 --> 00:27:18.758 There was about 1/3 of cases,

NOTE Confidence: 0.868726434166667

00:27:18.760 --> 00:27:20.956 so kind of a word to the wise if

NOTE Confidence: 0.868726434166667

00:27:20.956 --> 00:27:23.258 you're doing it V6 fish is your

NOTE Confidence: 0.868726434166667

00:27:23.258 --> 00:27:24.900 primary detection method for ifs.

NOTE Confidence: 0.868726434166667

00:27:24.900 --> 00:27:27.280 There is a significant risk of a

NOTE Confidence: 0.868726434166667

00:27:27.280 --> 00:27:29.369 false negative and you may want to

NOTE Confidence: 0.868726434166667

00:27:29.370 --> 00:27:31.122 perform another testing modality.

NOTE Confidence: 0.868726434166667

00:27:31.122 --> 00:27:33.312 Either pan track ihcc or

NOTE Confidence: 0.868726434166667

00:27:33.312 --> 00:27:35.350 next generation sequencing.

NOTE Confidence: 0.868726434166667

00:27:35.350 --> 00:27:39.574 If your clinical suspicion of IFS is high.

NOTE Confidence: 0.868726434166667

00:27:39.580 --> 00:27:41.180 By immunohistochemistry,

NOTE Confidence: 0.868726434166667

00:27:41.180 --> 00:27:43.990 kind of standard IIC,

NOTE Confidence: 0.868726434166667

00:27:43.990 --> 00:27:46.760 including SM, A CD34, and S-100.

00:27:46.760 --> 00:27:49.020 There was no difference

00:27:49.020 --> 00:27:50.715 between fusion subtypes,

00:27:50.720 --> 00:27:53.317 so in the literature there is a

00:27:53.317 --> 00:27:55.839 lot of things written about S.

00:27:55.840 --> 00:27:59.102 100 and CD 34 in the provisional

00:27:59.102 --> 00:28:01.452 category of entrec rearrange

00:28:01.452 --> 00:28:04.429 mesenchymal tumors and you know

00:28:04.429 --> 00:28:06.967 in this larger cohort we actually

00:28:06.967 --> 00:28:09.597 saw this both in the variant.

00:28:09.600 --> 00:28:10.080 Fusions,

00:28:10.080 --> 00:28:12.960 as well as the canonical translocations,

00:28:12.960 --> 00:28:16.632 so I'm not sure we can use this to

00:28:16.632 --> 00:28:19.172 differentiate between and track one

00:28:19.172 --> 00:28:21.722 and track 3 gene rearrangements.

00:28:21.730 --> 00:28:24.160 What was helpful in our hands

NOTE Confidence: 0.868726434166667

00:28:24.160 --> 00:28:26.394 was looking at the staining

NOTE Confidence: 0.868726434166667

00:28:26.394 --> 00:28:28.490 patterns in pan track.

NOTE Confidence: 0.868726434166667

00:28:28.490 --> 00:28:30.074 So we wrote a separate paper

NOTE Confidence: 0.868726434166667

00:28:30.074 --> 00:28:32.000 looking at Pan track sensitivity and

NOTE Confidence: 0.868726434166667

00:28:32.000 --> 00:28:34.040 specificity in the staining patterns.

NOTE Confidence: 0.868726434166667

00:28:34.040 --> 00:28:36.326 So looking at pan Track and

NOTE Confidence: 0.868726434166667

00:28:36.326 --> 00:28:38.283 the different fusions in Pan

NOTE Confidence: 0.868726434166667

00:28:38.283 --> 00:28:40.419 Track one and two fuse tumors,

NOTE Confidence: 0.868726434166667

00:28:40.420 --> 00:28:43.575 we saw very strong diffuse

NOTE Confidence: 0.868726434166667

00:28:43.575 --> 00:28:44.837 cytoplasmic staining.

NOTE Confidence: 0.868726434166667

00:28:44.840 --> 00:28:47.857 Whereas and in Trek 3 gene rearrangements,

NOTE Confidence: 0.868726434166667

00:28:47.860 --> 00:28:49.132 this typically had weaker.

NOTE Confidence: 0.868726434166667

00:28:49.132 --> 00:28:51.040 Although this is one of our

NOTE Confidence: 0.868726434166667

00:28:51.103 --> 00:28:52.399 robust training cases.

NOTE Confidence: 0.868726434166667

00:28:52.400 --> 00:28:53.198 Weaker staining,

NOTE Confidence: 0.868726434166667

00:28:53.198 --> 00:28:55.991 and most commonly we saw nuclear staining

NOTE Confidence: 0.868726434166667

00:28:55.991 --> 00:28:58.459 and this we published also in Asia.

NOTE Confidence: 0.909911744444444

00:29:02.160 --> 00:29:04.428 So moving forward and I think what's

NOTE Confidence: 0.909911744444444

00:29:04.428 --> 00:29:06.040 most important, we spend a lot of

NOTE Confidence: 0.909911744444444

00:29:06.040 --> 00:29:07.000 time looking at the pathology.

NOTE Confidence: 0.909911744444444

00:29:07.000 --> 00:29:08.650 But what does this mean

NOTE Confidence: 0.909911744444444

00:29:08.650 --> 00:29:09.970 clinically for these patients?

NOTE Confidence: 0.909911744444444

00:29:09.970 --> 00:29:11.440 And so moving forward and looking

NOTE Confidence: 0.909911744444444

00:29:11.440 --> 00:29:13.040 at the risk of recurrence,

NOTE Confidence: 0.909911744444444

00:29:13.040 --> 00:29:15.302 metastasis and outcome for these patients

NOTE Confidence: 0.909911744444444

00:29:15.302 --> 00:29:18.180 looking just at our retrospective review,

NOTE Confidence: 0.909911744444444

00:29:18.180 --> 00:29:20.022 we can't use the other donated

NOTE Confidence: 0.909911744444444

00:29:20.022 --> 00:29:21.250 cases from our collaborators

NOTE Confidence: 0.909911744444444

00:29:21.305 --> 00:29:22.920 'cause we'd have referral bias.

NOTE Confidence: 0.909911744444444

00:29:22.920 --> 00:29:24.820 Overall, we had a recurrence

NOTE Confidence: 0.909911744444444

00:29:24.820 --> 00:29:26.250 rate of about 24%.

NOTE Confidence: 0.909911744444444

00:29:26.250 --> 00:29:28.280 All of these cases had positive margins.

NOTE Confidence: 0.909911744444444

00:29:28.280 --> 00:29:30.176 The metastatic rate of about 12%

NOTE Confidence: 0.909911744444444

00:29:30.180 --> 00:29:31.650 overall survival was.

NOTE Confidence: 0.909911744444444

00:29:31.650 --> 00:29:34.132 Quite gutted about 90% of note

NOTE Confidence: 0.909911744444444

00:29:34.132 --> 00:29:35.698 about a third of these patients

NOTE Confidence: 0.909911744444444

00:29:35.698 --> 00:29:37.229 were on targeted therapy,

NOTE Confidence: 0.909911744444444

00:29:37.230 --> 00:29:39.099 so these were patients that were enrolled

NOTE Confidence: 0.909911744444444

00:29:39.099 --> 00:29:41.070 at the time on the clinical trial,

NOTE Confidence: 0.909911744444444

00:29:41.070 --> 00:29:44.010 primarily for lyrics.

NOTE Confidence: 0.909911744444444

00:29:44.010 --> 00:29:46.145 And similar to what was seen again

NOTE Confidence: 0.909911744444444

00:29:46.145 --> 00:29:48.598 in that paper from editing or Chung

NOTE Confidence: 0.909911744444444

00:29:48.598 --> 00:29:50.806 was there was no correlation between

NOTE Confidence: 0.909911744444444

00:29:50.878 --> 00:29:52.753 risk of metastasis or outcome

NOTE Confidence: 0.909911744444444

00:29:52.753 --> 00:29:54.628 on the patients age location,

NOTE Confidence: 0.909911744444444

00:29:54.630 --> 00:29:56.585 the fusion partner or mitotic

NOTE Confidence: 0.909911744444444

49

00:29:56.585 --> 00:29:58.149 rate or histologic pattern,

NOTE Confidence: 0.909911744444444

00:29:58.150 --> 00:29:59.270 and this is really important.

NOTE Confidence: 0.909911744444444

00:29:59.270 --> 00:30:00.640 'cause many of these cases,

NOTE Confidence: 0.909911744444444

00:30:00.640 --> 00:30:02.535 particularly those that did not

NOTE Confidence: 0.909911744444444

00:30:02.535 --> 00:30:05.570 have any TV 6 gene rearrangement,

NOTE Confidence: 0.909911744444444

00:30:05.570 --> 00:30:06.398 noted up front,

NOTE Confidence: 0.909911744444444

00:30:06.398 --> 00:30:08.919 were sent out to a variety of different

NOTE Confidence: 0.909911744444444

00:30:08.919 --> 00:30:11.027 institutions for second opinions,

NOTE Confidence: 0.909911744444444

00:30:11.030 --> 00:30:12.764 and many of these were actually

NOTE Confidence: 0.909911744444444

00:30:12.764 --> 00:30:13.920 called high grade sarcomas.

NOTE Confidence: 0.909911744444444

00:30:13.920 --> 00:30:15.558 So if you think about treatment

NOTE Confidence: 0.909911744444444

00:30:15.558 --> 00:30:17.140 modalities for high grade sarcomas,

NOTE Confidence: 0.909911744444444

00:30:17.140 --> 00:30:18.368 this is aggressive chemotherapy.

NOTE Confidence: 0.909911744444444

00:30:18.368 --> 00:30:19.903 So why were they called

NOTE Confidence: 0.909911744444444

00:30:19.903 --> 00:30:21.378 high grade sarcoma as well?

NOTE Confidence: 0.909911744444444

00:30:21.380 --> 00:30:24.644 Many of these had very high mitotic rates,

NOTE Confidence: 0.909911744444444

00:30:24.650 --> 00:30:27.080 which is very classic for IFC,

NOTE Confidence: 0.909911744444444

00:30:27.080 --> 00:30:29.187 and they had necrosis and so how

NOTE Confidence: 0.909911744444444

00:30:29.187 --> 00:30:31.393 we grade sarcoma is if you think

NOTE Confidence: 0.909911744444444

00:30:31.393 --> 00:30:33.241 about the French system of grading

NOTE Confidence: 0.909911744444444

00:30:33.303 --> 00:30:35.459 is based on my post using necrosis,

NOTE Confidence: 0.909911744444444

00:30:35.460 --> 00:30:38.016 so these would be over graded

NOTE Confidence: 0.909911744444444

00:30:38.020 --> 00:30:40.246 based on how we know these behave

NOTE Confidence: 0.909911744444444

00:30:40.246 --> 00:30:41.820 and then over treated,

NOTE Confidence: 0.909911744444444

00:30:41.820 --> 00:30:44.165 and yet we know for IFS mitosis.

NOTE Confidence: 0.909911744444444

00:30:44.170 --> 00:30:48.195 Necrosis don't matter for risk of outcome.

NOTE Confidence: 0.898474859230769

00:30:50.270 --> 00:30:52.158 So, as I alluded to in this original

NOTE Confidence: 0.898474859230769

00:30:52.158 --> 00:30:53.738 paper by Chung and Denzinger,

NOTE Confidence: 0.898474859230769

00:30:53.740 --> 00:30:55.978 they found the same thing that

NOTE Confidence: 0.898474859230769

00:30:55.978 --> 00:30:58.011 mitosis in necrosis aren't indicative

NOTE Confidence: 0.898474859230769

00:30:58.011 --> 00:31:00.356 of behavior other large studies.

NOTE Confidence: 0.898474859230769

00:31:00.360 --> 00:31:03.483 So this and the OR back study is a

NOTE Confidence: 0.898474859230769

00:31:03.483 --> 00:31:06.302 study clinical paper out of Europe

NOTE Confidence: 0.898474859230769

00:31:06.302 --> 00:31:09.756 from 2010 with about 90 FS cases.

NOTE Confidence: 0.898474859230769

00:31:09.760 --> 00:31:11.540 These are not molecularly confirmed,

NOTE Confidence: 0.898474859230769

00:31:11.540 --> 00:31:14.438 so this would be all comers

NOTE Confidence: 0.898474859230769

00:31:14.438 --> 00:31:17.030 based on morphology with again.

NOTE Confidence: 0.898474859230769

00:31:17.030 --> 00:31:19.450 No, the outcome was about

NOTE Confidence: 0.898474859230769

00:31:19.450 --> 00:31:22.750 90% serve overall survival.

NOTE Confidence: 0.898474859230769

00:31:22.750 --> 00:31:24.150 So in the years that

NOTE Confidence: 0.898474859230769

00:31:24.150 --> 00:31:24.990 followed this manuscript,

NOTE Confidence: 0.898474859230769

00:31:24.990 --> 00:31:27.430 which was published in 2018,

NOTE Confidence: 0.898474859230769

00:31:27.430 --> 00:31:30.127 moving on to now we're in 2022.

NOTE Confidence: 0.898474859230769

00:31:30.127 --> 00:31:33.943 The story is really moved beyond and trek,

NOTE Confidence: 0.898474859230769

00:31:33.950 --> 00:31:37.302 and so this figure is from a manuscript that

NOTE Confidence: 0.898474859230769

00:31:37.302 --> 00:31:38.850 actually just was published this month.

NOTE Confidence: 0.898474859230769

00:31:38.850 --> 00:31:41.546 I had the pleasure of getting asked to

00:31:41.546 --> 00:31:44.426 write a review article on this topic.

00:31:44.430 --> 00:31:45.210 And really,

00:31:45.210 --> 00:31:47.940 the last several years has been this

00:31:47.940 --> 00:31:50.177 explosion of literature of identification

00:31:50.177 --> 00:31:53.180 of other oncogenic drivers both in IFC.

00:31:53.180 --> 00:31:56.720 And in what we now need to put quotes around,

00:31:56.720 --> 00:31:58.845 quote and track rearranged spindle

00:31:58.845 --> 00:32:00.545 cell neoplasms because they're

00:32:00.545 --> 00:32:02.459 not just entracque anymore.

00:32:02.460 --> 00:32:03.274 And really,

00:32:03.274 --> 00:32:05.309 this literature is shown a

00:32:05.309 --> 00:32:07.168 variety of genetic alterations

00:32:07.168 --> 00:32:09.400 and other tyrosine kinases,

00:32:09.400 --> 00:32:12.151 and we're going to walk through these

00:32:12.151 --> 00:32:14.348 membrane brown receptor tyrosine kinases

00:32:14.348 --> 00:32:17.430 and other downstream kinases and that

NOTE Confidence: 0.898474859230769

00:32:17.430 --> 00:32:21.280 are focused in the map kinase pathway.

NOTE Confidence: 0.898474859230769

00:32:21.280 --> 00:32:23.536 So one of the first kinases.

NOTE Confidence: 0.898474859230769

00:32:23.540 --> 00:32:26.492 To be discovered to have alterations

NOTE Confidence: 0.898474859230769

00:32:26.492 --> 00:32:29.179 in these tumors is in RET,

NOTE Confidence: 0.898474859230769

00:32:29.180 --> 00:32:33.824 so two papers really focused on RET.

NOTE Confidence: 0.898474859230769

00:32:33.824 --> 00:32:35.709 A paper by Cristina Antonescu

NOTE Confidence: 0.898474859230769

00:32:35.709 --> 00:32:36.840 and Chris Fletcher,

NOTE Confidence: 0.898474859230769

00:32:36.840 --> 00:32:39.824 and then a paper by myself and some

NOTE Confidence: 0.898474859230769

00:32:39.824 --> 00:32:42.212 wonderful colleagues looking at RET gene

NOTE Confidence: 0.898474859230769

00:32:42.212 --> 00:32:44.570 fusions and spindle cell neoplasms with

NOTE Confidence: 0.898474859230769

00:32:44.640 --> 00:32:47.640 significant overlap with the zentrack tumors,

NOTE Confidence: 0.898474859230769

00:32:47.640 --> 00:32:49.504 as demonstrated by these

NOTE Confidence: 0.898474859230769

00:32:49.504 --> 00:32:50.436 two photomicrographs.

NOTE Confidence: 0.898474859230769

00:32:50.440 --> 00:32:53.464 Here's a summary of the RET fusions.

NOTE Confidence: 0.898474859230769

00:32:53.470 --> 00:32:55.297 In these tumors that have been published

NOTE Confidence: 0.898474859230769

00:32:55.297 --> 00:32:57.644 to date and not to go through all of this,

NOTE Confidence: 0.898474859230769

00:32:57.650 --> 00:33:00.135 but to point out a few highlights.

NOTE Confidence: 0.898474859230769

00:33:00.140 --> 00:33:02.948 So when the RET story starts to unfold,

NOTE Confidence: 0.898474859230769

00:33:02.950 --> 00:33:04.805 we start noticing that this

NOTE Confidence: 0.898474859230769

00:33:04.805 --> 00:33:07.230 isn't just in soft tissue tumors,

NOTE Confidence: 0.898474859230769

00:33:07.230 --> 00:33:07.880 but again,

NOTE Confidence: 0.898474859230769

00:33:07.880 --> 00:33:09.505 we start seeing cases that

NOTE Confidence: 0.898474859230769

00:33:09.505 --> 00:33:11.209 are occurring in the kidney.

NOTE Confidence: 0.898474859230769

00:33:11.210 --> 00:33:13.400 So going back to 1998,

NOTE Confidence: 0.898474859230769

00:33:13.400 --> 00:33:16.712 when Brian Rubin starts identifying that

NOTE Confidence: 0.898474859230769

00:33:16.712 --> 00:33:18.730 the ETV's eccentric 3 gene rearrangement

NOTE Confidence: 0.898474859230769

00:33:18.730 --> 00:33:20.590 occurs not only in soft tissue,

NOTE Confidence: 0.898474859230769

00:33:20.590 --> 00:33:21.774 but in the kidney,

NOTE Confidence: 0.898474859230769

00:33:21.774 --> 00:33:23.254 and specifically in those tumors

NOTE Confidence: 0.898474859230769

00:33:23.254 --> 00:33:24.579 described as congenital music,

NOTE Confidence: 0.898474859230769

00:33:24.580 --> 00:33:26.116 plastic nephroma we start

NOTE Confidence: 0.898474859230769

00:33:26.116 --> 00:33:28.036 seeing the same thing happen.

NOTE Confidence: 0.898474859230769

00:33:28.040 --> 00:33:30.371 And this photo micrograph is of our

NOTE Confidence: 0.898474859230769

00:33:30.371 --> 00:33:32.393 tumor that we identified in the

NOTE Confidence: 0.898474859230769

00:33:32.393 --> 00:33:35.044 kidney with a clip 2 RET gene fusion,

NOTE Confidence: 0.898474859230769

00:33:35.044 --> 00:33:37.276 and we also start seeing that

NOTE Confidence: 0.898474859230769

00:33:37.276 --> 00:33:39.260 a subset of these tumors,

NOTE Confidence: 0.898474859230769

00:33:39.260 --> 00:33:41.822 despite S 100 and CD 34 expression

NOTE Confidence: 0.898474859230769

00:33:41.822 --> 00:33:44.105 which originally was touted as perhaps

NOTE Confidence: 0.898474859230769

00:33:44.105 --> 00:33:46.337 indicative of a benign entity and

NOTE Confidence: 0.898474859230769

00:33:46.337 --> 00:33:48.780 Lipo fibromatosis like neural tumor or

NOTE Confidence: 0.898474859230769

00:33:48.780 --> 00:33:53.390 actually a subset of these metastasis.

NOTE Confidence: 0.898474859230769

00:33:53.390 --> 00:33:55.890 Moving forward to ALK another

NOTE Confidence: 0.898474859230769

00:33:55.890 --> 00:33:57.390 receptor tyrosine kinase.

NOTE Confidence: 0.898474859230769

00:33:57.390 --> 00:34:00.243 I think most of us in the soft tissue

NOTE Confidence: 0.898474859230769

00:34:00.243 --> 00:34:02.670 world for many years kind of thought

NOTE Confidence: 0.898474859230769

00:34:02.670 --> 00:34:05.190 of alk of being may be part and parcel,

NOTE Confidence: 0.898474859230769

00:34:05.190 --> 00:34:08.102 but at least mostly thought of as

NOTE Confidence: 0.898474859230769

00:34:08.102 --> 00:34:09.884 being seen inflammatory myofibroblastic

NOTE Confidence: 0.898474859230769

00:34:09.884 --> 00:34:12.602 tumor IMT when you first start

NOTE Confidence: 0.898474859230769

00:34:12.602 --> 00:34:13.961 seeing a couple

NOTE Confidence: 0.822880801333334

00:34:14.038 --> 00:34:16.048 of publications and spindle cell

NOTE Confidence: 0.822880801333334

00:34:16.048 --> 00:34:19.560 tumors with that CD 34 and S 100

NOTE Confidence: 0.822880801333334

00:34:19.560 --> 00:34:22.560 coexpression and adults O2 case reports.

NOTE Confidence: 0.822880801333334

00:34:22.560 --> 00:34:24.476 And then we recently.

NOTE Confidence: 0.822880801333334

00:34:24.476 --> 00:34:27.869 Published this small case series of of

NOTE Confidence: 0.822880801333334

00:34:27.869 --> 00:34:31.044 four patients in histo paths 2IN soft

NOTE Confidence: 0.822880801333334

00:34:31.044 --> 00:34:34.558 tissue and again two in the kidney.

NOTE Confidence: 0.822880801333334

00:34:34.560 --> 00:34:37.858 So again, I FS and CMN's without

NOTE Confidence: 0.822880801333334

00:34:37.858 --> 00:34:39.934 prior arrangements that look

NOTE Confidence: 0.822880801333334

00:34:39.934 --> 00:34:42.430 like ifs rather than IMT.

NOTE Confidence: 0.822880801333334

00:34:42.430 --> 00:34:45.461 This was a real pleasure to to

NOTE Confidence: 0.822880801333334

00:34:45.461 --> 00:34:47.106 write 'cause I had the honor to

NOTE Confidence: 0.822880801333334

00:34:47.106 --> 00:34:48.559 write this paper with Cheryl Coffin,

NOTE Confidence: 0.822880801333334

00:34:48.560 --> 00:34:50.888 who's really an expert in this

NOTE Confidence: 0.822880801333334

00:34:50.888 --> 00:34:52.948 field as she subsequently retired

NOTE Confidence: 0.822880801333334

00:34:52.948 --> 00:34:54.668 but still stays active.

NOTE Confidence: 0.822880801333334

00:34:54.670 --> 00:34:56.310 These are some photomicrographs

NOTE Confidence: 0.822880801333334

00:34:56.310 --> 00:34:57.849 of these tumors, really.

NOTE Confidence: 0.822880801333334

00:34:57.849 --> 00:34:59.703 This is the the most inflammation

NOTE Confidence: 0.822880801333334

00:34:59.703 --> 00:35:01.519 that were present in these tumors,

NOTE Confidence: 0.822880801333334

00:35:01.520 --> 00:35:04.250 so really doesn't have the robust chronic

NOTE Confidence: 0.822880801333334

00:35:04.250 --> 00:35:05.900 inflammation that we associate with.

NOTE Confidence: 0.822880801333334

00:35:05.900 --> 00:35:08.570 IMT and again these spindle cell

NOTE Confidence: 0.822880801333334

00:35:08.570 --> 00:35:11.207 tumors arranged in fascicles or more

NOTE Confidence: 0.822880801333334

00:35:11.207 --> 00:35:13.559 primitive cells in a myxoid matrix.

NOTE Confidence: 0.822880801333334

00:35:13.560 --> 00:35:15.488 Here's a really great example of this kidney.

NOTE Confidence: 0.822880801333334

00:35:15.490 --> 00:35:17.569 This was a kidney tumor with this

NOTE Confidence: 0.822880801333334

00:35:17.569 --> 00:35:18.842 classic herring bone pattern

NOTE Confidence: 0.822880801333334

00:35:18.842 --> 00:35:20.447 associated with IFS or CMN,

NOTE Confidence: 0.822880801333334

00:35:20.450 --> 00:35:22.879 but with dual expression of CD 34

NOTE Confidence: 0.822880801333334

00:35:22.879 --> 00:35:25.278 and S 100 so again highlighting

NOTE Confidence: 0.822880801333334

00:35:25.278 --> 00:35:27.790 this can be seen and IFCMN.

NOTE Confidence: 0.922797162222222

00:35:30.380 --> 00:35:32.480 Additional work has been done

NOTE Confidence: 0.922797162222222

00:35:32.480 --> 00:35:34.160 with met gene rearrangements.

NOTE Confidence: 0.922797162222222

00:35:34.160 --> 00:35:36.176 This seems to be less frequent.

NOTE Confidence: 0.922797162222222

00:35:36.180 --> 00:35:39.000 There's been two case reports showing

NOTE Confidence: 0.922797162222222

00:35:39.000 --> 00:35:41.527 met Gene rearrangements and IFSI.

NOTE Confidence: 0.922797162222222

00:35:41.527 --> 00:35:45.409 This is published by two wonderful

NOTE Confidence: 0.922797162222222

00:35:45.409 --> 00:35:46.872 clinical pediatric oncologist,

NOTE Confidence: 0.922797162222222

00:35:46.872 --> 00:35:49.714 Ajay Gupta, Guvna City who are very

NOTE Confidence: 0.922797162222222

00:35:49.714 --> 00:35:52.218 active in the children psychology group

NOTE Confidence: 0.922797162222222

00:35:52.220 --> 00:35:54.540 and what I loved about their paper is
NOTE Confidence: 0.922797162222222

00:35:54.540 --> 00:35:57.206 that while many of us have moved away
NOTE Confidence: 0.922797162222222

00:35:57.206 --> 00:35:59.177 from classic karyotype, we now can.
NOTE Confidence: 0.922797162222222

00:35:59.177 --> 00:36:00.772 Essentially perform some of the
NOTE Confidence: 0.922797162222222

00:36:00.772 --> 00:36:02.630 same functions of classic karyotype,
NOTE Confidence: 0.922797162222222

00:36:02.630 --> 00:36:05.486 but by DNA and next generation sequencing.
NOTE Confidence: 0.922797162222222

00:36:05.490 --> 00:36:07.626 Looking at copper copy number changes
NOTE Confidence: 0.922797162222222

00:36:07.626 --> 00:36:10.459 and so in this particular tumor we
NOTE Confidence: 0.922797162222222

00:36:10.459 --> 00:36:12.684 see those same nonrandom chromosomal
NOTE Confidence: 0.922797162222222

00:36:12.684 --> 00:36:15.497 gains by DNA copy number evaluation.
NOTE Confidence: 0.922797162222222

00:36:15.500 --> 00:36:18.205 Looking at chromosomal gains in
NOTE Confidence: 0.922797162222222

00:36:18.205 --> 00:36:21.300 chromosome 1117 and 20 and so just
NOTE Confidence: 0.922797162222222

00:36:21.300 --> 00:36:23.660 like the original descriptions of
NOTE Confidence: 0.922797162222222

00:36:23.660 --> 00:36:25.988 IFS with compatible translocation,
NOTE Confidence: 0.922797162222222

00:36:25.990 --> 00:36:28.384 this IFS with A met gene fusion.
NOTE Confidence: 0.922797162222222

00:36:28.390 --> 00:36:31.086 Same shows those same.

NOTE Confidence: 0.922797162222222

00:36:31.086 --> 00:36:33.108 Copy number changes.

NOTE Confidence: 0.922797162222222

00:36:33.110 --> 00:36:36.652 FGFR 1 gene fusions have just recently

NOTE Confidence: 0.922797162222222

00:36:36.652 --> 00:36:39.989 been described in soft tissue tumors.

NOTE Confidence: 0.922797162222222

00:36:39.990 --> 00:36:42.314 For those of you who may be

NOTE Confidence: 0.922797162222222

00:36:42.314 --> 00:36:43.890 neuropathologist and the audience

NOTE Confidence: 0.922797162222222

00:36:43.890 --> 00:36:46.314 think you guys are more familiar

NOTE Confidence: 0.922797162222222

00:36:46.314 --> 00:36:49.241 with far in cleoma so FGFR also is

NOTE Confidence: 0.922797162222222

00:36:49.241 --> 00:36:51.339 a family of tyrosine kinase those

NOTE Confidence: 0.922797162222222

00:36:51.339 --> 00:36:53.697 one through 5 FGFR one specifically

NOTE Confidence: 0.922797162222222

00:36:53.697 --> 00:36:56.057 had previously been described in two

NOTE Confidence: 0.922797162222222

00:36:56.057 --> 00:36:58.406 cases of GI stromal tumors several

NOTE Confidence: 0.922797162222222

00:36:58.406 --> 00:37:00.686 years ago and just recently there's

NOTE Confidence: 0.922797162222222

00:37:00.686 --> 00:37:02.890 been one single case of a uterine.

NOTE Confidence: 0.922797162222222

00:37:02.890 --> 00:37:04.897 What was described as a neural fiber

NOTE Confidence: 0.922797162222222

00:37:04.897 --> 00:37:06.682 sarcoma within the spectrum of

NOTE Confidence: 0.922797162222222

00:37:06.682 --> 00:37:08.550 entrec fibrosarcomas with the uterus.

NOTE Confidence: 0.922797162222222

00:37:08.550 --> 00:37:11.592 So I'll talk about this briefly in a moment,

NOTE Confidence: 0.922797162222222

00:37:11.600 --> 00:37:13.790 but within this provisional category of

NOTE Confidence: 0.922797162222222

00:37:13.790 --> 00:37:15.764 entrec, rearranged spindle cell tumors,

NOTE Confidence: 0.922797162222222

00:37:15.764 --> 00:37:18.866 there is a subset of uterine fibrosarcoma

NOTE Confidence: 0.922797162222222

00:37:18.866 --> 00:37:21.378 as within traction rearrangements.

NOTE Confidence: 0.922797162222222

00:37:21.380 --> 00:37:23.250 That was originally described by

NOTE Confidence: 0.922797162222222

00:37:23.250 --> 00:37:25.539 Cristina Antonescu and then a more

NOTE Confidence: 0.922797162222222

00:37:25.539 --> 00:37:27.289 recent study by Stanford Group

NOTE Confidence: 0.922797162222222

00:37:27.289 --> 00:37:29.300 has described a series of these.

NOTE Confidence: 0.922797162222222

00:37:29.300 --> 00:37:32.476 As seen here, the large majority of these.

NOTE Confidence: 0.922797162222222

00:37:32.480 --> 00:37:33.582 These uterine.

NOTE Confidence: 0.922797162222222

00:37:33.582 --> 00:37:35.786 Cyber sarcomas have entracque

NOTE Confidence: 0.922797162222222

00:37:35.786 --> 00:37:36.888 gene rearrangements.

NOTE Confidence: 0.922797162222222

00:37:36.890 --> 00:37:37.226 However,

NOTE Confidence: 0.922797162222222

00:37:37.226 --> 00:37:39.578 one case in their series had an

NOTE Confidence: 0.922797162222222

00:37:39.578 --> 00:37:42.008 F for one gene rearrangement.

NOTE Confidence: 0.922797162222222

00:37:42.010 --> 00:37:44.956 Many of these tumors do show

NOTE Confidence: 0.922797162222222

00:37:44.956 --> 00:37:48.049 expression of CD 34 and S 100.

NOTE Confidence: 0.922797162222222

00:37:48.050 --> 00:37:49.610 As seen here,

NOTE Confidence: 0.922797162222222

00:37:49.610 --> 00:37:52.210 this tumor is somewhat haphazardly

NOTE Confidence: 0.922797162222222

00:37:52.210 --> 00:37:54.285 arranged mildly more pleomorphism

NOTE Confidence: 0.922797162222222

00:37:54.285 --> 00:37:57.147 than many of the other cases.

NOTE Confidence: 0.922797162222222

00:37:57.150 --> 00:38:01.340 Again, CD34 and S-100 expression.

NOTE Confidence: 0.922797162222222

00:38:01.340 --> 00:38:04.330 No pediatric cases had been

NOTE Confidence: 0.922797162222222

00:38:04.330 --> 00:38:06.124 described until recently.

NOTE Confidence: 0.922797162222222

00:38:06.130 --> 00:38:08.488 We described 2 cases of FGFR.

NOTE Confidence: 0.922797162222222

00:38:08.490 --> 00:38:10.710 One pediatric ifz like tumors.

NOTE Confidence: 0.922797162222222

00:38:10.710 --> 00:38:13.430 The first case we had actually was a

NOTE Confidence: 0.922797162222222

00:38:13.430 --> 00:38:16.125 case that we first sequenced when we

NOTE Confidence: 0.922797162222222

00:38:16.125 --> 00:38:19.202 were looking at our end Trek series.

NOTE Confidence: 0.922797162222222

00:38:19.202 --> 00:38:22.686 Back from 2018 it was a case that

NOTE Confidence: 0.922797162222222

00:38:22.686 --> 00:38:26.920 was sent to us from CHLA.

NOTE Confidence: 0.922797162222222

00:38:26.920 --> 00:38:28.930 And then a second case through

NOTE Confidence: 0.922797162222222

00:38:28.930 --> 00:38:29.935 routine clinical practice.

NOTE Confidence: 0.922797162222222

00:38:29.940 --> 00:38:32.640 Both were in very young children,

NOTE Confidence: 0.922797162222222

00:38:32.640 --> 00:38:34.938 one in the Perirectal region and

NOTE Confidence: 0.922797162222222

00:38:34.938 --> 00:38:36.470 one in the thigh.

NOTE Confidence: 0.922797162222222

00:38:36.470 --> 00:38:38.430 Here are photomicrographs of those

NOTE Confidence: 0.922797162222222

00:38:38.430 --> 00:38:41.090 two cases and you can see here.

NOTE Confidence: 0.922797162222222

00:38:41.090 --> 00:38:44.120 Hopefully you can start to recognize

NOTE Confidence: 0.922797162222222

00:38:44.120 --> 00:38:46.650 these patterns that they're either very

NOTE Confidence: 0.922797162222222

00:38:46.650 --> 00:38:48.550 spindled or somewhat more primitive,

NOTE Confidence: 0.922797162222222

00:38:48.550 --> 00:38:51.070 appearing in ovoid and collogen eyes

NOTE Confidence: 0.922797162222222

00:38:51.070 --> 00:38:53.770 to myxoid stroma very infiltrative,

NOTE Confidence: 0.922797162222222

00:38:53.770 --> 00:38:56.078 so this case one is this fat

NOTE Confidence: 0.922797162222222

00:38:56.078 --> 00:38:57.050 that it's infiltrating.

NOTE Confidence: 0.922797162222222

00:38:57.050 --> 00:38:59.022 Here is actually submucosal

NOTE Confidence: 0.922797162222222

00:38:59.022 --> 00:39:01.487 fat in the perirectal region,

NOTE Confidence: 0.922797162222222

00:39:01.490 --> 00:39:02.858 and so I'm in the process

NOTE Confidence: 0.922797162222222

00:39:02.858 --> 00:39:03.770 of writing up this

NOTE Confidence: 0.9326616575

00:39:03.827 --> 00:39:04.449 case series.

NOTE Confidence: 0.9326616575

00:39:04.450 --> 00:39:06.420 Now this work was presented.

NOTE Confidence: 0.9326616575

00:39:06.420 --> 00:39:09.270 This last fall at the Society

NOTE Confidence: 0.9326616575

00:39:09.270 --> 00:39:11.228 for Pediatric pathology through

NOTE Confidence: 0.9326616575

00:39:11.228 --> 00:39:12.812 next generation sequencing.

NOTE Confidence: 0.9326616575

00:39:12.812 --> 00:39:15.378 These both had fusions that are

NOTE Confidence: 0.9326616575

00:39:15.378 --> 00:39:17.334 thought to be considered at lead

NOTE Confidence: 0.9326616575

00:39:17.334 --> 00:39:18.884 to constitutive activation of

NOTE Confidence: 0.9326616575

00:39:18.884 --> 00:39:21.188 the kinase domain of FGFR 1.

NOTE Confidence: 0.77241933

00:39:23.300 --> 00:39:24.560 These two patients,

NOTE Confidence: 0.77241933

00:39:24.560 --> 00:39:27.465 one had a resection of the perirectal

NOTE Confidence: 0.77241933

00:39:27.465 --> 00:39:30.209 tumor and has no evidence of disease.

NOTE Confidence: 0.77241933

00:39:30.210 --> 00:39:32.128 Five years later, and the other patient,

NOTE Confidence: 0.77241933

00:39:32.130 --> 00:39:34.496 like I said, is the more recent

NOTE Confidence: 0.77241933

00:39:34.496 --> 00:39:36.814 patient is being treated with targeted

NOTE Confidence: 0.77241933

00:39:36.814 --> 00:39:39.016 therapy and is alive with disease.

NOTE Confidence: 0.77241933

00:39:39.020 --> 00:39:42.038 It's a very large tumor and

NOTE Confidence: 0.77241933

00:39:42.038 --> 00:39:43.547 was dubbed unrespectable.

NOTE Confidence: 0.77241933

00:39:43.550 --> 00:39:44.768 So now we've moved. Kind of.

NOTE Confidence: 0.77241933

00:39:44.770 --> 00:39:47.152 We're going down this map kinase

NOTE Confidence: 0.77241933

00:39:47.152 --> 00:39:49.653 pathway and we've finished the receptor

NOTE Confidence: 0.77241933

00:39:49.653 --> 00:39:52.161 tyrosine kinases that have to date

NOTE Confidence: 0.77241933

00:39:52.161 --> 00:39:54.546 been described and moving on to Abel,

NOTE Confidence: 0.77241933

00:39:54.550 --> 00:39:58.420 one which is a cytoplasmic kinase.

NOTE Confidence: 0.77241933

00:39:58.420 --> 00:40:01.786 We were able to describe 2 cases of gab.

NOTE Confidence: 0.77241933

00:40:01.790 --> 00:40:03.202 One able one fusions,

NOTE Confidence: 0.77241933

00:40:03.202 --> 00:40:05.849 one in an older adult woman who

00:40:05.849 --> 00:40:08.084 luckily had a partial response

00:40:08.084 --> 00:40:09.872 to treatment with imatinib.

00:40:09.880 --> 00:40:12.918 She had an unresectable tumor and when

00:40:12.918 --> 00:40:15.858 in a child you can see this tumor here,

00:40:15.860 --> 00:40:17.820 one of the highlights of

00:40:17.820 --> 00:40:18.996 recognizing these tumors,

00:40:19.000 --> 00:40:21.316 as I alluded to before this

00:40:21.316 --> 00:40:22.860 very dense perivascular Hila

00:40:22.937 --> 00:40:24.935 gnosis as seen in this tumor.

00:40:24.940 --> 00:40:25.265 Again,

00:40:25.265 --> 00:40:26.565 this tumor had coexpression

00:40:26.565 --> 00:40:28.530 of CD 34 and S 100.

00:40:31.050 --> 00:40:33.906 And then again, marching down this

00:40:33.906 --> 00:40:35.810 pathway to downstream effector

00:40:35.883 --> 00:40:38.299 molecules or cytoplasmic kinases.

00:40:38.300 --> 00:40:40.660 Is braf? I'm going to go back again

NOTE Confidence: 0.865312028571428

00:40:40.660 --> 00:40:43.007 to our original study and walk you

NOTE Confidence: 0.865312028571428

00:40:43.007 --> 00:40:45.750 down the rest of our key selection,

NOTE Confidence: 0.865312028571428

00:40:45.750 --> 00:40:48.422 'cause I kind of didn't walk down this

NOTE Confidence: 0.865312028571428

00:40:48.422 --> 00:40:51.348 part of our case selection on purpose.

NOTE Confidence: 0.865312028571428

00:40:51.350 --> 00:40:54.030 So in our original series,

NOTE Confidence: 0.865312028571428

00:40:54.030 --> 00:40:57.645 we started with 29 cases

NOTE Confidence: 0.865312028571428

00:40:57.645 --> 00:40:59.206 that morphologically.

NOTE Confidence: 0.865312028571428

00:40:59.206 --> 00:41:04.218 We thought fit with ISS and of

NOTE Confidence: 0.865312028571428

00:41:04.218 --> 00:41:06.288 those large majority ended up

NOTE Confidence: 0.865312028571428

00:41:06.288 --> 00:41:08.740 having ENTREC gene rearrangements.

NOTE Confidence: 0.865312028571428

00:41:08.740 --> 00:41:12.247 However, we excluded 5 cases from this

NOTE Confidence: 0.865312028571428

00:41:12.247 --> 00:41:15.488 paper because we either didn't have

NOTE Confidence: 0.865312028571428

00:41:15.488 --> 00:41:18.770 enough DNA for further sequencing or

NOTE Confidence: 0.865312028571428

00:41:18.770 --> 00:41:21.335 they had non entracque alterations

NOTE Confidence: 0.865312028571428

00:41:21.335 --> 00:41:24.335 by NGS and there was five of those

NOTE Confidence: 0.865312028571428

00:41:24.340 --> 00:41:27.602 of those two in our original series

NOTE Confidence: 0.865312028571428

00:41:27.602 --> 00:41:30.589 had been graph point mutations.

NOTE Confidence: 0.865312028571428

00:41:30.590 --> 00:41:32.067 And those were kind of set aside

NOTE Confidence: 0.865312028571428

00:41:32.067 --> 00:41:33.796 at at that point in time because

NOTE Confidence: 0.865312028571428

00:41:33.796 --> 00:41:35.356 we wanted to focus this initial

NOTE Confidence: 0.865312028571428

00:41:35.414 --> 00:41:36.939 manuscript really on end track.

NOTE Confidence: 0.865312028571428

00:41:36.940 --> 00:41:39.306 So we had these two initial index

NOTE Confidence: 0.865312028571428

00:41:39.306 --> 00:41:41.779 cases from this prior investigation,

NOTE Confidence: 0.865312028571428

00:41:41.780 --> 00:41:45.380 and ultimately we identified 12

NOTE Confidence: 0.865312028571428

00:41:45.380 --> 00:41:48.260 additional BRAF altered cases

NOTE Confidence: 0.865312028571428

00:41:48.260 --> 00:41:51.124 through routine clinical practice.

NOTE Confidence: 0.865312028571428

00:41:51.124 --> 00:41:51.840 Ultimately,

NOTE Confidence: 0.865312028571428

00:41:51.840 --> 00:41:54.200 these 14 cases were published

NOTE Confidence: 0.865312028571428

00:41:54.200 --> 00:41:55.616 in modern pathology.

NOTE Confidence: 0.865312028571428

00:41:55.620 --> 00:41:58.536 We had cases ranging from congenital

NOTE Confidence: 0.865312028571428

00:41:58.536 --> 00:42:01.120 presentation to 32 years of age,

NOTE Confidence: 0.865312028571428

00:42:01.120 --> 00:42:02.416 with a median age of 6.

NOTE Confidence: 0.865312028571428

00:42:02.420 --> 00:42:05.720 Months 20% percent at birth and

NOTE Confidence: 0.865312028571428

00:42:05.720 --> 00:42:08.104 large majority by the first end of

NOTE Confidence: 0.865312028571428

00:42:08.104 --> 00:42:10.060 life there was a male predominance

NOTE Confidence: 0.865312028571428

00:42:10.060 --> 00:42:12.272 and again the sites had involvement

NOTE Confidence: 0.865312028571428

00:42:12.272 --> 00:42:14.785 were very analogous to what we see

NOTE Confidence: 0.865312028571428

00:42:14.785 --> 00:42:17.219 and what we think about for IFS.

NOTE Confidence: 0.865312028571428

00:42:17.220 --> 00:42:17.610 Again,

NOTE Confidence: 0.865312028571428

00:42:17.610 --> 00:42:19.950 the morphology is very reminiscent to

NOTE Confidence: 0.865312028571428

00:42:19.950 --> 00:42:23.080 what we see in Canonical translocation,

NOTE Confidence: 0.865312028571428

00:42:23.080 --> 00:42:23.605 tumors,

NOTE Confidence: 0.865312028571428

00:42:23.605 --> 00:42:26.755 spindle cell tumors arranged in fascicles.

NOTE Confidence: 0.865312028571428

00:42:26.760 --> 00:42:28.410 Other tumors looked much more

NOTE Confidence: 0.865312028571428

00:42:28.410 --> 00:42:30.060 primitive arranged in myxoid matrix,

NOTE Confidence: 0.865312028571428

00:42:30.060 --> 00:42:33.498 and many had HBC like vessels.

00:42:33.500 --> 00:42:34.985 We don't need to go through this whole table.

00:42:34.990 --> 00:42:36.590 It's found in the manuscript,

00:42:36.590 --> 00:42:38.486 but to highlight a few things,

00:42:38.490 --> 00:42:42.210 there were indeed activating point mutations.

00:42:42.210 --> 00:42:45.946 Some were the very classic V 600 E,

00:42:45.950 --> 00:42:48.267 But there were also some novel point

00:42:48.267 --> 00:42:50.469 mutations and then some of the tumors.

00:42:50.470 --> 00:42:51.122 Excuse me,

00:42:51.122 --> 00:42:53.404 some of the tumors had novel fusions.

00:42:53.410 --> 00:42:56.446 A couple of the tumors had

00:42:56.446 --> 00:42:57.964 multiple fusion transcripts.

00:42:57.970 --> 00:42:59.968 Here are some other photo micrographs

00:42:59.968 --> 00:43:01.939 of what these tumors look like.

00:43:01.940 --> 00:43:04.690 A couple of interesting things

00:43:04.690 --> 00:43:05.790 where identified.

00:43:05.790 --> 00:43:08.400 One of the tumors had heterologous

NOTE Confidence: 0.865312028571428

00:43:08.400 --> 00:43:11.012 differentiation form in the form of

NOTE Confidence: 0.865312028571428

00:43:11.012 --> 00:43:12.774 cartilage deposition which we've also

NOTE Confidence: 0.865312028571428

00:43:12.774 --> 00:43:16.029 seen in a couple of our end track tumors.

NOTE Confidence: 0.865312028571428

00:43:16.030 --> 00:43:18.930 As far as clinical outcomes,

NOTE Confidence: 0.865312028571428

00:43:18.930 --> 00:43:23.109 we had one patient with metastatic disease.

NOTE Confidence: 0.865312028571428

00:43:23.110 --> 00:43:24.420 We had four patients that

NOTE Confidence: 0.865312028571428

00:43:24.420 --> 00:43:25.468 are alive with disease,

NOTE Confidence: 0.865312028571428

00:43:25.470 --> 00:43:26.092 7 patients,

NOTE Confidence: 0.865312028571428

00:43:26.092 --> 00:43:27.958 no evidence of disease and and

NOTE Confidence: 0.865312028571428

00:43:27.958 --> 00:43:29.549 two patients died of disease.

NOTE Confidence: 0.865312028571428

00:43:29.550 --> 00:43:32.469 So while we have limited follow-up length,

NOTE Confidence: 0.865312028571428

00:43:32.470 --> 00:43:35.404 it seems to be similar to what we see

NOTE Confidence: 0.865312028571428

00:43:35.404 --> 00:43:38.350 in patients with entracque tumors.

NOTE Confidence: 0.865312028571428

00:43:38.350 --> 00:43:40.924 A smaller series was also published

NOTE Confidence: 0.865312028571428

00:43:40.924 --> 00:43:43.116 by Christina Antonescu of five

NOTE Confidence: 0.865312028571428

00:43:43.116 --> 00:43:45.528 patients with the RAF gene fusions,

NOTE Confidence: 0.865312028571428

00:43:45.530 --> 00:43:48.538 but not point mutations.

NOTE Confidence: 0.865312028571428

00:43:48.540 --> 00:43:51.276 These have also been described the

NOTE Confidence: 0.865312028571428

00:43:51.276 --> 00:43:54.220 RAF alterations in CMN by European

NOTE Confidence: 0.865312028571428

00:43:54.220 --> 00:43:56.820 Group looking at either BRAF

NOTE Confidence: 0.865312028571428

00:43:56.820 --> 00:43:59.084 internal duplications or entrenching

NOTE Confidence: 0.865312028571428

00:43:59.084 --> 00:44:01.580 gene rearrangements in CMN.

NOTE Confidence: 0.865312028571428

00:44:01.580 --> 00:44:04.604 So we're seeing the same spectrum

NOTE Confidence: 0.865312028571428

00:44:04.604 --> 00:44:07.420 of alterations in IFS&CMN.

NOTE Confidence: 0.865312028571428

00:44:07.420 --> 00:44:09.226 So last but not least RAF one

NOTE Confidence: 0.865312028571428

00:44:09.226 --> 00:44:10.000 which is also

NOTE Confidence: 0.845236798

00:44:10.060 --> 00:44:10.720 known as C.

NOTE Confidence: 0.845236798

00:44:10.720 --> 00:44:14.591 RAF has also been described in IFS.

NOTE Confidence: 0.845236798

00:44:14.591 --> 00:44:16.759 This is a case report I had the

NOTE Confidence: 0.845236798

00:44:16.759 --> 00:44:18.488 pleasure of writing with Cheryl

NOTE Confidence: 0.845236798

00:44:18.488 --> 00:44:22.368 Coffin looking at a case of infantile

NOTE Confidence: 0.845236798

00:44:22.368 --> 00:44:24.720 fibrosarcoma which was actually

NOTE Confidence: 0.845236798

00:44:24.720 --> 00:44:30.026 diagnosed in 2010 was called a variant

NOTE Confidence: 0.845236798

00:44:30.026 --> 00:44:32.480 IFC and then was sequenced later.

NOTE Confidence: 0.845236798

00:44:32.480 --> 00:44:34.600 This is a more recent case I had of am

NOTE Confidence: 0.845236798

00:44:34.658 --> 00:44:37.600 at 4 RAF, 1 Gene Fusion again showing.

NOTE Confidence: 0.845236798

00:44:37.600 --> 00:44:39.380 These spindle cells to avoid

NOTE Confidence: 0.845236798

00:44:39.380 --> 00:44:41.160 cells within the same tumor.

NOTE Confidence: 0.845236798

00:44:41.160 --> 00:44:42.432 In this case,

NOTE Confidence: 0.845236798

00:44:42.432 --> 00:44:45.400 we had these very large dilated vessels.

NOTE Confidence: 0.845236798

00:44:45.400 --> 00:44:47.840 So again, how do we put all of this together?

NOTE Confidence: 0.845236798

00:44:47.840 --> 00:44:50.544 I realize this is really kind of a

NOTE Confidence: 0.845236798

00:44:50.544 --> 00:44:52.739 potpourri of genetic alterations,

NOTE Confidence: 0.845236798

00:44:52.740 --> 00:44:55.310 and it's really through looking

NOTE Confidence: 0.845236798

00:44:55.310 --> 00:44:58.730 at this map RASC kinase pathway.

NOTE Confidence: 0.845236798

00:44:58.730 --> 00:44:59.840 Even though this paper was

NOTE Confidence: 0.845236798

00:44:59.840 --> 00:45:00.728 just published this month,

NOTE Confidence: 0.845236798

00:45:00.730 --> 00:45:03.194 I have to alter my own figure

NOTE Confidence: 0.845236798

00:45:03.194 --> 00:45:04.680 and add for one,

NOTE Confidence: 0.845236798

00:45:04.680 --> 00:45:06.534 and I think what's really important

NOTE Confidence: 0.845236798

00:45:06.534 --> 00:45:09.407 to note in this figure is that all of

NOTE Confidence: 0.845236798

00:45:09.407 --> 00:45:11.530 these signals through the same pathway,

NOTE Confidence: 0.845236798

00:45:11.530 --> 00:45:14.330 but also what's important is that many

NOTE Confidence: 0.845236798

00:45:14.330 --> 00:45:17.660 of these can be targetable alterations,

NOTE Confidence: 0.845236798

00:45:17.660 --> 00:45:19.796 so identifying these alterations

NOTE Confidence: 0.845236798

00:45:19.796 --> 00:45:21.398 can help diagnostically,

NOTE Confidence: 0.845236798

00:45:21.400 --> 00:45:23.505 but they can also potentially

NOTE Confidence: 0.845236798

00:45:23.505 --> 00:45:24.347 help therapeutically,

NOTE Confidence: 0.845236798

00:45:24.350 --> 00:45:25.950 particularly in these patients.

NOTE Confidence: 0.845236798

00:45:25.950 --> 00:45:28.740 While you know the outcomes are very.

NOTE Confidence: 0.845236798

00:45:28.740 --> 00:45:30.256 Good for these tumors.

NOTE Confidence: 0.845236798

00:45:30.256 --> 00:45:33.040 Many of these tumors are quite large.

NOTE Confidence: 0.845236798

00:45:33.040 --> 00:45:35.704 They can wrap around vital in their own

NOTE Confidence: 0.845236798

00:45:35.704 --> 00:45:37.381 vascular structures and so resection

NOTE Confidence: 0.845236798

00:45:37.381 --> 00:45:39.593 can be quite morbid for these patients,

NOTE Confidence: 0.845236798

00:45:39.600 --> 00:45:41.816 so having alternative therapeutic

NOTE Confidence: 0.845236798

00:45:41.816 --> 00:45:46.244 options if resection is not a good option

NOTE Confidence: 0.845236798

00:45:46.244 --> 00:45:49.280 for the patient is very important.

NOTE Confidence: 0.845236798

00:45:49.280 --> 00:45:50.792 As I alluded to,

NOTE Confidence: 0.845236798

00:45:50.792 --> 00:45:51.548 talking about,

NOTE Confidence: 0.845236798

00:45:51.550 --> 00:45:53.412 you know what about this WO provisional

NOTE Confidence: 0.845236798

00:45:53.412 --> 00:45:54.730 category of quote and track.

NOTE Confidence: 0.845236798

00:45:54.730 --> 00:45:58.118 Rearrange spindle cell neoplasm.

NOTE Confidence: 0.845236798

00:45:58.120 --> 00:46:01.319 I had the unique opportunity of writing

NOTE Confidence: 0.845236798

00:46:01.319 --> 00:46:03.998 this chapter for the pediatric book

NOTE Confidence: 0.845236798

00:46:03.998 --> 00:46:06.871 and also for the derm soft tissue book.

NOTE Confidence: 0.845236798

00:46:06.871 --> 00:46:09.400 So what do we know about this category?

NOTE Confidence: 0.845236798

00:46:09.400 --> 00:46:11.296 It's a broad category.

NOTE Confidence: 0.845236798

00:46:11.296 --> 00:46:12.718 It encompasses morphologies

NOTE Confidence: 0.845236798

00:46:12.718 --> 00:46:14.140 reminiscent of IFS,

NOTE Confidence: 0.845236798

00:46:14.140 --> 00:46:18.430 IMT Lipo Fibromatosis or MPNST.

NOTE Confidence: 0.845236798

00:46:18.430 --> 00:46:21.335 One of the things that's described is

NOTE Confidence: 0.845236798

00:46:21.340 --> 00:46:23.744 that there can be variable CD34 and

NOTE Confidence: 0.845236798

00:46:23.744 --> 00:46:25.436 S-100 expression. As I alluded to.

NOTE Confidence: 0.845236798

00:46:25.440 --> 00:46:28.457 We can also see this in IFC.

NOTE Confidence: 0.845236798

00:46:28.460 --> 00:46:31.484 The median age of this tumor type

NOTE Confidence: 0.845236798

00:46:31.484 --> 00:46:33.816 as opposed to EFS is really that

NOTE Confidence: 0.845236798

00:46:33.816 --> 00:46:34.764 it's more broad.

NOTE Confidence: 0.845236798

00:46:34.770 --> 00:46:35.300 However,

NOTE Confidence: 0.845236798

00:46:35.300 --> 00:46:39.010 this can also be diagnosed in Pediatrics.

NOTE Confidence: 0.845236798

00:46:39.010 --> 00:46:41.125 It is controversial and unknown

NOTE Confidence: 0.845236798

00:46:41.125 --> 00:46:43.240 how this relates to IFC.

NOTE Confidence: 0.845236798

00:46:43.240 --> 00:46:45.824 Is this a spectrum of the same tumor,

00:46:45.830 --> 00:46:47.670 or these two different tumors,

00:46:47.670 --> 00:46:49.694 or these multiple tumors?

00:46:49.694 --> 00:46:52.730 And that's still up for debate.

00:46:52.730 --> 00:46:55.740 This came about by several early manuscripts,

00:46:55.740 --> 00:46:57.910 denoting it as a unique entity and

00:46:57.910 --> 00:46:59.941 now it's recognized that many of

00:46:59.941 --> 00:47:01.666 these tumors within this category

00:47:01.666 --> 00:47:03.279 actually have hybrid lesions,

00:47:03.280 --> 00:47:05.030 so this wasn't recent manuscript.

00:47:05.030 --> 00:47:07.599 Looking at what was purely by broma,

00:47:07.600 --> 00:47:09.448 ptosis like tumor and then many of

00:47:09.448 --> 00:47:11.165 them actually have a more cellular

00:47:11.165 --> 00:47:12.625 component that looks more like.

00:47:12.630 --> 00:47:13.230 If so,

00:47:13.230 --> 00:47:15.630 I think that there will be much more

NOTE Confidence: 0.845236798

00:47:15.700 --> 00:47:18.838 conversation about this tumor moving forward.

NOTE Confidence: 0.845236798

00:47:18.840 --> 00:47:20.345 The other controversial topic is

NOTE Confidence: 0.845236798

00:47:20.345 --> 00:47:22.939 the name of it as we now know that.

NOTE Confidence: 0.845236798

00:47:22.940 --> 00:47:26.534 This category has many more genetic

NOTE Confidence: 0.845236798

00:47:26.534 --> 00:47:28.930 alterations outside of entracque,

NOTE Confidence: 0.845236798

00:47:28.930 --> 00:47:30.360 so this begs the question,

NOTE Confidence: 0.879473628

00:47:30.360 --> 00:47:32.884 well, what's in a name in the

NOTE Confidence: 0.879473628

00:47:32.884 --> 00:47:34.394 review article for Hyster Path?

NOTE Confidence: 0.879473628

00:47:34.400 --> 00:47:35.636 Jason Hornick was like can you

NOTE Confidence: 0.879473628

00:47:35.636 --> 00:47:36.916 please come up with another name

NOTE Confidence: 0.879473628

00:47:36.916 --> 00:47:38.358 for these tumors and I told him,

NOTE Confidence: 0.879473628

00:47:38.360 --> 00:47:40.960 well, that's very hard,

NOTE Confidence: 0.879473628

00:47:40.960 --> 00:47:42.860 so there are some problems

NOTE Confidence: 0.879473628

00:47:42.860 --> 00:47:44.380 with the current nomenclature.

NOTE Confidence: 0.879473628

00:47:44.380 --> 00:47:46.221 Here are some examples, so you have

NOTE Confidence: 0.879473628

00:47:46.221 --> 00:47:48.539 a 15 year old boy with a lung mass,

NOTE Confidence: 0.879473628

00:47:48.540 --> 00:47:49.779 pure fascicular architecture.

NOTE Confidence: 0.879473628

00:47:49.779 --> 00:47:51.018 There's no inflammation,

NOTE Confidence: 0.879473628

00:47:51.020 --> 00:47:53.006 and it has an ATV's eccentric.

NOTE Confidence: 0.879473628

00:47:53.010 --> 00:47:54.690 3 gene fusion. You know?

NOTE Confidence: 0.879473628

00:47:54.690 --> 00:47:56.370 What do you call that is an IMT?

NOTE Confidence: 0.879473628

00:47:56.370 --> 00:47:58.586 Is it a knife sits in the lung?

NOTE Confidence: 0.879473628

00:47:58.590 --> 00:48:00.974 You have a 76 year old woman with

NOTE Confidence: 0.879473628

00:48:00.974 --> 00:48:03.181 superficial soft tissue mass with fascicular

NOTE Confidence: 0.879473628

00:48:03.181 --> 00:48:05.870 architecture as a really high mitotic rate,

NOTE Confidence: 0.879473628

00:48:05.870 --> 00:48:10.665 it expresses CD34 and S-100 as retained.

NOTE Confidence: 0.879473628

00:48:10.670 --> 00:48:11.981 H3K27 trimethyl ace.

NOTE Confidence: 0.879473628

00:48:11.981 --> 00:48:14.018 Otherwise you might consider as

NOTE Confidence: 0.879473628

00:48:14.018 --> 00:48:15.746 an element centric 1 gene fusion.

NOTE Confidence: 0.879473628

00:48:15.750 --> 00:48:17.580 What do you call that?

NOTE Confidence: 0.879473628

00:48:17.580 --> 00:48:19.085 You have a one year old boy

NOTE Confidence: 0.879473628

00:48:19.085 --> 00:48:20.700 with a small intestinal tumor.

NOTE Confidence: 0.879473628

00:48:20.700 --> 00:48:21.771 Fascicular architecture and

NOTE Confidence: 0.879473628

00:48:21.771 --> 00:48:23.199 RAF 1 gene fusion.

NOTE Confidence: 0.879473628

00:48:23.200 --> 00:48:25.380 What do you call that?

NOTE Confidence: 0.879473628

00:48:25.380 --> 00:48:25.898 A CD,

NOTE Confidence: 0.879473628

00:48:25.898 --> 00:48:27.970 a 76 year old woman with a deep

NOTE Confidence: 0.879473628

00:48:28.040 --> 00:48:30.469 seated soft tissue mass CD 34 S

NOTE Confidence: 0.879473628

00:48:30.469 --> 00:48:32.380 100 with the gab one able fusion.

NOTE Confidence: 0.879473628

00:48:32.380 --> 00:48:33.240 What do you call that?

NOTE Confidence: 0.879473628

00:48:33.240 --> 00:48:35.632 So there's a lot of nuances in the

NOTE Confidence: 0.879473628

00:48:35.632 --> 00:48:37.699 nomenclature which I always ask my trainees.

NOTE Confidence: 0.879473628

00:48:37.700 --> 00:48:39.560 Well why do we name tumors?

NOTE Confidence: 0.879473628

00:48:39.560 --> 00:48:41.420 What's the point of naming tumors?

NOTE Confidence: 0.879473628

00:48:41.420 --> 00:48:41.664 Well,

NOTE Confidence: 0.879473628

00:48:41.664 --> 00:48:43.372 I think the first and foremost reason

NOTE Confidence: 0.879473628

00:48:43.372 --> 00:48:45.361 is to inform and to communicate to

NOTE Confidence: 0.879473628

00:48:45.361 --> 00:48:47.160 our clinicians on the current tumor.

NOTE Confidence: 0.879473628

00:48:47.160 --> 00:48:50.058 So the case in front of us and that

NOTE Confidence: 0.879473628

00:48:50.058 --> 00:48:52.164 information that we're communicating

NOTE Confidence: 0.879473628

00:48:52.164 --> 00:48:53.877 is about prognostication.

NOTE Confidence: 0.879473628

00:48:53.880 --> 00:48:56.528 So if I say I FS to clinician.

NOTE Confidence: 0.879473628

00:48:56.530 --> 00:48:58.310 That helps inform how that

NOTE Confidence: 0.879473628

00:48:58.310 --> 00:49:00.090 tumor is going to behave.

NOTE Confidence: 0.879473628

00:49:00.090 --> 00:49:02.290 It informs treatment and management

NOTE Confidence: 0.879473628

00:49:02.290 --> 00:49:04.050 decisions and is predictive.

NOTE Confidence: 0.879473628

00:49:04.050 --> 00:49:06.546 It also is to help classify

NOTE Confidence: 0.879473628

00:49:06.546 --> 00:49:08.210 biologically and distinct entities.

NOTE Confidence: 0.879473628

00:49:08.210 --> 00:49:09.918 So an example of that is the

NOTE Confidence: 0.879473628

00:49:09.918 --> 00:49:11.350 recent separation of chicken beak,

NOTE Confidence: 0.879473628

00:49:11.350 --> 00:49:12.354 or sarcomas,

NOTE Confidence: 0.879473628

00:49:12.354 --> 00:49:15.366 into new and distinct diagnostic categories,

NOTE Confidence: 0.879473628

00:49:15.370 --> 00:49:17.162 so we don't want to lump those

NOTE Confidence: 0.879473628

00:49:17.162 --> 00:49:18.827 anymore into what used to be

NOTE Confidence: 0.879473628

00:49:18.827 --> 00:49:20.227 called Ewing's family of tumor,

NOTE Confidence: 0.879473628

00:49:20.230 --> 00:49:22.972 because they're distinct and they have

NOTE Confidence: 0.879473628

00:49:22.972 --> 00:49:25.110 different implications for prognosis and,

NOTE Confidence: 0.879473628

00:49:25.110 --> 00:49:27.240 and they are different biologically.

NOTE Confidence: 0.879473628

00:49:27.240 --> 00:49:29.028 Something I think most people forget

NOTE Confidence: 0.879473628

00:49:29.028 --> 00:49:31.527 about is also to aid in category

NOTE Confidence: 0.879473628

00:49:31.527 --> 00:49:33.195 categorization of cancer registries.

NOTE Confidence: 0.879473628

00:49:33.200 --> 00:49:35.520 So for epidemiologic studies and

NOTE Confidence: 0.879473628

00:49:35.520 --> 00:49:38.399 for learning long term long term

NOTE Confidence: 0.879473628

00:49:38.399 --> 00:49:40.794 and this influences allocation of

NOTE Confidence: 0.879473628

00:49:40.794 --> 00:49:43.800 funding areas of future research etc.

NOTE Confidence: 0.879473628

00:49:43.800 --> 00:49:45.896 So you know when we look at the

NOTE Confidence: 0.879473628

00:49:45.896 --> 00:49:47.940 problems with our current nomenclature,

NOTE Confidence: 0.879473628

00:49:47.940 --> 00:49:49.940 we go back to these cases I presented,

NOTE Confidence: 0.879473628

00:49:49.940 --> 00:49:50.464 you know,

NOTE Confidence: 0.879473628

00:49:50.464 --> 00:49:52.036 one might think about this lung

NOTE Confidence: 0.879473628

00:49:52.036 --> 00:49:53.489 mass with the secular architecture

NOTE Confidence: 0.879473628

00:49:53.489 --> 00:49:55.235 and this 15 year old male.

NOTE Confidence: 0.879473628

00:49:55.240 --> 00:49:56.260 And you know,

NOTE Confidence: 0.879473628

00:49:56.260 --> 00:49:58.640 how does that affect the clinical outcome?

NOTE Confidence: 0.879473628

00:49:58.640 --> 00:50:00.020 Most imt's do really well,

NOTE Confidence: 0.879473628

00:50:00.020 --> 00:50:01.214 but this patient,

NOTE Confidence: 0.879473628

00:50:01.214 --> 00:50:02.806 this patient's disease metastasized

NOTE Confidence: 0.879473628

00:50:02.806 --> 00:50:04.720 and they died of disease.

NOTE Confidence: 0.879473628

00:50:04.720 --> 00:50:07.816 This 60 or 76 year old woman with this

NOTE Confidence: 0.879473628

00:50:07.816 --> 00:50:11.129 mask that had a really high mitotic rate.

NOTE Confidence: 0.879473628

00:50:11.130 --> 00:50:12.280 And you might think it

NOTE Confidence: 0.879473628

00:50:12.280 --> 00:50:13.430 it would have done bad.

NOTE Confidence: 0.879473628

00:50:13.430 --> 00:50:15.908 This patient actually was respected and has

NOTE Confidence: 0.879473628

00:50:15.908 --> 00:50:18.568 no evidence of disease many years later.

NOTE Confidence: 0.879473628

00:50:18.570 --> 00:50:20.502 This one year old boy that

NOTE Confidence: 0.879473628

00:50:20.502 --> 00:50:21.790 had this humor with

NOTE Confidence: 0.705322231666667

00:50:21.860 --> 00:50:24.228 a raft. 1 gene Fusion also was respected.

NOTE Confidence: 0.705322231666667

00:50:24.230 --> 00:50:26.470 No evidence of disease and this last case

NOTE Confidence: 0.705322231666667

00:50:26.470 --> 00:50:28.926 was one of the ones I presented earlier.

NOTE Confidence: 0.705322231666667

00:50:28.930 --> 00:50:30.550 Had a partial response to

NOTE Confidence: 0.705322231666667

00:50:30.550 --> 00:50:32.170 imatinib is alive with disease.

NOTE Confidence: 0.705322231666667

00:50:32.170 --> 00:50:35.187 So thinking about how we use nomenclature

NOTE Confidence: 0.705322231666667

00:50:35.187 --> 00:50:37.769 to inform clinical decisions and

NOTE Confidence: 0.705322231666667

00:50:37.769 --> 00:50:40.634 future research and classification of

NOTE Confidence: 0.705322231666667

00:50:40.634 --> 00:50:43.997 tumours I think is really important.

NOTE Confidence: 0.705322231666667

00:50:44.000 --> 00:50:45.456 So what do I do and what?

NOTE Confidence: 0.705322231666667

00:50:45.460 --> 00:50:46.816 How do I write my reports?

NOTE Confidence: 0.705322231666667

00:50:46.820 --> 00:50:48.385 I think there's several different

NOTE Confidence: 0.705322231666667

00:50:48.385 --> 00:50:49.637 ways you can go.

NOTE Confidence: 0.705322231666667

00:50:49.640 --> 00:50:51.716 You can do an integrated report

NOTE Confidence: 0.705322231666667

00:50:51.716 --> 00:50:52.754 infantile fibrosarcoma with

NOTE Confidence: 0.705322231666667

00:50:52.754 --> 00:50:54.398 this particular gene fusion.

NOTE Confidence: 0.705322231666667

00:50:54.400 --> 00:50:55.860 I think that works sometimes.

NOTE Confidence: 0.705322231666667

00:50:55.860 --> 00:50:57.400 I think that with that in trek,

NOTE Confidence: 0.705322231666667

00:50:57.400 --> 00:50:58.840 rearranged spindle cell tumor.

NOTE Confidence: 0.705322231666667

00:50:58.840 --> 00:51:01.720 I tried that once and it backfired.

NOTE Confidence: 0.705322231666667

00:51:01.720 --> 00:51:02.885 So end track rearranged spindle

NOTE Confidence: 0.705322231666667

00:51:02.885 --> 00:51:04.619 tumor with the gab one evil fusion.

NOTE Confidence: 0.705322231666667

00:51:04.620 --> 00:51:05.838 You can see where that leads

NOTE Confidence: 0.705322231666667

00:51:05.838 --> 00:51:07.210 to a lot of confusion.

NOTE Confidence: 0.705322231666667

00:51:07.210 --> 00:51:09.100 How can be an entry rearranged

NOTE Confidence: 0.705322231666667

00:51:09.100 --> 00:51:11.132 spindle tumor but have a different

NOTE Confidence: 0.705322231666667

00:51:11.132 --> 00:51:12.960 fusion and so more and more?

NOTE Confidence: 0.705322231666667

00:51:12.960 --> 00:51:14.150 I've opted for kind of.

NOTE Confidence: 0.705322231666667

00:51:14.150 --> 00:51:15.910 Like kinase driven spindle salt,

NOTE Confidence: 0.705322231666667

00:51:15.910 --> 00:51:17.410 tumors, sarcoma with a map,

NOTE Confidence: 0.705322231666667

00:51:17.410 --> 00:51:19.517 one raft 1 gene fusion and written

NOTE Confidence: 0.705322231666667

00:51:19.517 --> 00:51:21.760 a comment that this belongs to a

NOTE Confidence: 0.705322231666667

00:51:21.760 --> 00:51:23.674 family of tumors that includes IFS

NOTE Confidence: 0.705322231666667

00:51:23.742 --> 00:51:26.743 in this provisional WHO category and

NOTE Confidence: 0.705322231666667

00:51:26.743 --> 00:51:30.409 and discuss with my clinical team.

NOTE Confidence: 0.705322231666667

00:51:30.410 --> 00:51:32.335 This is really important when we start

NOTE Confidence: 0.705322231666667

00:51:32.335 --> 00:51:33.650 thinking about targeted therapies,

NOTE Confidence: 0.705322231666667

00:51:33.650 --> 00:51:35.094 as I alluded to,

NOTE Confidence: 0.705322231666667

00:51:35.094 --> 00:51:36.899 each of these alterations that

NOTE Confidence: 0.705322231666667

00:51:36.899 --> 00:51:39.050 I've discussed has options for

NOTE Confidence: 0.705322231666667

00:51:39.050 --> 00:51:41.200 therapies and so discussing these

NOTE Confidence: 0.705322231666667

00:51:41.200 --> 00:51:43.855 in your reports and with your

NOTE Confidence: 0.705322231666667

00:51:43.855 --> 00:51:46.005 clinicians is of utmost importance.

NOTE Confidence: 0.705322231666667

00:51:46.010 --> 00:51:47.768 Some follow up from the original

NOTE Confidence: 0.705322231666667

00:51:47.768 --> 00:51:49.348 case I presented some some

NOTE Confidence: 0.705322231666667

00:51:49.348 --> 00:51:50.740 questions that raises well.

NOTE Confidence: 0.705322231666667

00:51:50.740 --> 00:51:52.208 What is the diagnosis?

NOTE Confidence: 0.705322231666667

00:51:52.208 --> 00:51:54.410 How do we predict prognosis and

NOTE Confidence: 0.705322231666667

00:51:54.410 --> 00:51:56.800 IFS&N track spindle cell tumors?

NOTE Confidence: 0.705322231666667

00:51:56.800 --> 00:51:59.720 This is still an ongoing area of research.

NOTE Confidence: 0.705322231666667

00:51:59.720 --> 00:52:01.790 This patient ended up being put

NOTE Confidence: 0.705322231666667

00:52:01.790 --> 00:52:04.018 on a targeted end track inhibitor

NOTE Confidence: 0.705322231666667

00:52:04.018 --> 00:52:06.340 and is still alive and currently

NOTE Confidence: 0.705322231666667

00:52:06.340 --> 00:52:08.600 has no evidence of disease.

NOTE Confidence: 0.705322231666667

00:52:08.600 --> 00:52:10.484 The lug metastases cleared,

NOTE Confidence: 0.705322231666667

00:52:10.484 --> 00:52:13.310 so how long should these patients

NOTE Confidence: 0.705322231666667

00:52:13.392 --> 00:52:16.017 be continued on ENTREC inhibitors?

NOTE Confidence: 0.705322231666667

00:52:16.020 --> 00:52:17.705 What does the post inhibitor

NOTE Confidence: 0.705322231666667

00:52:17.705 --> 00:52:19.053 pathologic response look like?

NOTE Confidence: 0.68359183682353

00:52:21.140 --> 00:52:23.340 Currently I have ongoing collaborations

NOTE Confidence: 0.68359183682353

00:52:23.340 --> 00:52:26.666 with Alex Lazar at MD Anderson and Palo

NOTE Confidence: 0.68359183682353

00:52:26.666 --> 00:52:29.298 de Toys in Italy we constructed a blinded

NOTE Confidence: 0.68359183682353

00:52:29.298 --> 00:52:31.547 central review to kind of help with

NOTE Confidence: 0.68359183682353

00:52:31.547 --> 00:52:33.605 his logic concordance in these tumors.

NOTE Confidence: 0.68359183682353

00:52:33.610 --> 00:52:36.746 That work was presented at Setos and

NOTE Confidence: 0.68359183682353

00:52:36.746 --> 00:52:39.929 I'm still working to look at other

NOTE Confidence: 0.68359183682353

00:52:39.929 --> 00:52:42.563 predictive markers by Histology in a

NOTE Confidence: 0.68359183682353

00:52:42.653 --> 00:52:45.635 large group of these tumors as well.

NOTE Confidence: 0.68359183682353

00:52:45.640 --> 00:52:48.205 And one of the say thanks for all of

NOTE Confidence: 0.68359183682353

00:52:48.210 --> 00:52:50.650 my collaborators on these projects,

NOTE Confidence: 0.68359183682353

00:52:50.650 --> 00:52:53.037 and I'm happy to take any questions.

NOTE Confidence: 0.792681665

00:52:57.340 --> 00:52:58.980 Thank you so much.

NOTE Confidence: 0.792681665

00:52:58.980 --> 00:53:01.622 Jessica was a really beautiful talk

NOTE Confidence: 0.792681665

00:53:01.622 --> 00:53:04.628 and if anybody wanna ask question

NOTE Confidence: 0.792681665

00:53:04.628 --> 00:53:08.175 you can either unmute yourself and

NOTE Confidence: 0.792681665

00:53:08.175 --> 00:53:11.184 directly ask question or put it in

NOTE Confidence: 0.792681665

00:53:11.184 --> 00:53:14.360 the in the chat and I can read it up

NOTE Confidence: 0.792681665

00:53:14.360 --> 00:53:17.230 so the forum is open for question.

NOTE Confidence: 0.793582044

00:53:22.290 --> 00:53:24.648 But why do we are waiting

NOTE Confidence: 0.793582044

00:53:24.648 --> 00:53:26.220 for somebody to think?

NOTE Confidence: 0.793582044

00:53:26.220 --> 00:53:28.536 I have one question in the

NOTE Confidence: 0.793582044

00:53:28.536 --> 00:53:30.080 classical situation of the

NOTE Confidence: 0.793582044

00:53:30.157 --> 00:53:32.452 classical infantile fibrosarcoma

NOTE Confidence: 0.793582044

00:53:32.452 --> 00:53:34.747 with economical translocation,

NOTE Confidence: 0.793582044

00:53:34.750 --> 00:53:39.772 what is will see as a going forward approach?

NOTE Confidence: 0.793582044

00:53:39.780 --> 00:53:43.988 C Steel surgery will be the main approach,

NOTE Confidence: 0.793582044

00:53:43.990 --> 00:53:46.741 or you would see as a target

NOTE Confidence: 0.793582044

00:53:46.741 --> 00:53:48.402 therapy and alternative and

NOTE Confidence: 0.793582044

00:53:48.402 --> 00:53:50.417 first line type of approach.

NOTE Confidence: 0.93591426

00:53:51.260 --> 00:53:53.462 I think it really depends on

NOTE Confidence: 0.93591426

00:53:53.462 --> 00:53:55.600 the situation for the patient.

NOTE Confidence: 0.93591426

00:53:55.600 --> 00:53:57.688 I think moving if it's receptable

NOTE Confidence: 0.93591426

00:53:57.688 --> 00:53:59.780 and it's an easy location.

NOTE Confidence: 0.93591426

00:53:59.780 --> 00:54:00.458 Yes, surgery.

NOTE Confidence: 0.93591426

00:54:00.458 --> 00:54:02.831 More and more though if it's would

NOTE Confidence: 0.93591426

00:54:02.831 --> 00:54:05.472 be more if there would be any

NOTE Confidence: 0.93591426

00:54:05.472 --> 00:54:07.402 significant morbidity to that child

NOTE Confidence: 0.93591426

00:54:07.402 --> 00:54:09.616 they are using and track inhibitors

NOTE Confidence: 0.93591426

00:54:09.616 --> 00:54:12.028 up front followed by surgery.

NOTE Confidence: 0.93591426

00:54:12.028 --> 00:54:15.364 So there is much more appetite

NOTE Confidence: 0.93591426

00:54:15.364 --> 00:54:17.344 for having a low threshold

NOTE Confidence: 0.93591426

00:54:17.344 --> 00:54:18.768 to using targeted therapies.

NOTE Confidence: 0.76744806

00:54:21.020 --> 00:54:23.478 OK Jessica, I really enjoyed your talk.

NOTE Confidence: 0.76744806

00:54:23.480 --> 00:54:25.952 I wonderful. So one question is

NOTE Confidence: 0.76744806

00:54:25.952 --> 00:54:28.017 also the different prognosis in

NOTE Confidence: 0.76744806

00:54:28.017 --> 00:54:30.075 among the patient with the same,

NOTE Confidence: 0.76744806

00:54:30.080 --> 00:54:32.370 like a translocation or the

NOTE Confidence: 0.76744806

00:54:32.370 --> 00:54:33.744 same kindness permutation.

NOTE Confidence: 0.76744806

00:54:33.750 --> 00:54:36.665 Do you see any other like a like?

NOTE Confidence: 0.76744806

00:54:36.665 --> 00:54:39.220 A molecular changes in your NGS that

NOTE Confidence: 0.76744806

00:54:39.220 --> 00:54:41.580 may explain the different outcomes.

NOTE Confidence: 0.889592976

00:54:42.350 --> 00:54:43.510 That's a really great question,

NOTE Confidence: 0.889592976

00:54:43.510 --> 00:54:45.358 so that's one of the things that we're

NOTE Confidence: 0.889592976

00:54:45.358 --> 00:54:47.837 trying, so I I right now have about

NOTE Confidence: 0.889592976

00:54:47.840 --> 00:54:50.353 60 cases and growing, and we're trying

NOTE Confidence: 0.889592976

00:54:50.353 --> 00:54:52.634 to look at if CDKN 2A alterations,

NOTE Confidence: 0.889592976

00:54:52.634 --> 00:54:55.310 which we've seen in a subset of them,

NOTE Confidence: 0.889592976

00:54:55.310 --> 00:54:57.240 is one of the alterations

NOTE Confidence: 0.889592976

00:54:57.240 --> 00:54:58.784 that may influence prognosis.

NOTE Confidence: 0.889592976

00:54:58.790 --> 00:55:00.054 We also, you know,

NOTE Confidence: 0.889592976

00:55:00.054 --> 00:55:01.950 we're trying to gather all this

NOTE Confidence: 0.889592976

00:55:02.015 --> 00:55:03.718 information is at CDKN 2A.

NOTE Confidence: 0.889592976

00:55:03.718 --> 00:55:05.602 Is it some of the nonrandom

NOTE Confidence: 0.889592976

00:55:05.602 --> 00:55:06.230 chromosomal gains?

NOTE Confidence: 0.889592976

00:55:06.230 --> 00:55:08.516 We need a pretty significant cohort

NOTE Confidence: 0.889592976

00:55:08.516 --> 00:55:10.436 and have detailed follow-up of

NOTE Confidence: 0.889592976

00:55:10.436 --> 00:55:12.404 like length of time to metastasize.

NOTE Confidence: 0.889592976

00:55:12.410 --> 00:55:12.761 Etc.

NOTE Confidence: 0.889592976

00:55:12.761 --> 00:55:14.867 To be able to risk stratify

NOTE Confidence: 0.889592976

00:55:14.867 --> 00:55:16.629 those patients so you know,

NOTE Confidence: 0.889592976

00:55:16.630 --> 00:55:18.590 could prognosis be influenced

NOTE Confidence: 0.889592976

00:55:18.590 --> 00:55:20.550 by those chromosomal games?

NOTE Confidence: 0.889592976

00:55:20.550 --> 00:55:21.160 CDKN 2A.

NOTE Confidence: 0.889592976

00:55:21.160 --> 00:55:23.295 We haven't seen too many other recurrent

NOTE Confidence: 0.889592976

00:55:23.295 --> 00:55:25.107 molecular alterations outside of that,

NOTE Confidence: 0.889592976

00:55:25.110 --> 00:55:29.570 so we have pretty good DNA and RNA

NOTE Confidence: 0.889592976

00:55:29.570 --> 00:55:31.490 sequencing for most of our cohort,

NOTE Confidence: 0.889592976

00:55:31.490 --> 00:55:33.135 so we haven't seen you know P53

NOTE Confidence: 0.889592976

00:55:33.135 --> 00:55:34.860 or other secondary hits out

NOTE Confidence: 0.889592976

00:55:34.860 --> 00:55:35.720 outside of CDKN

NOTE Confidence: 0.709180488333333

00:55:36.410 --> 00:55:39.394 2A IC and also thank God it's more

NOTE Confidence: 0.709180488333333

00:55:39.394 --> 00:55:41.026 fun like a practice point view.

NOTE Confidence: 0.709180488333333

00:55:41.030 --> 00:55:42.420 A lot of times when.

NOTE Confidence: 0.709180488333333

00:55:42.420 --> 00:55:44.260 Something looks like IMT and

NOTE Confidence: 0.709180488333333

00:55:44.260 --> 00:55:46.508 dogs or rice positive or so.

NOTE Confidence: 0.709180488333333

00:55:46.508 --> 00:55:49.130 Do you just go like a further

NOTE Confidence: 0.709180488333333

00:55:49.130 --> 00:55:50.780 two like a proof there's

NOTE Confidence: 0.709180488333333

00:55:50.780 --> 00:55:52.737 really like a mutation in this,

NOTE Confidence: 0.709180488333333

00:55:52.740 --> 00:55:54.310 like a protein or jeans?

NOTE Confidence: 0.954269608

00:55:55.750 --> 00:55:56.920 Sorry, can you repeat that?

NOTE Confidence: 0.715956203666667

00:55:56.950 --> 00:55:58.861 Yeah, so typically when we sign out

NOTE Confidence: 0.715956203666667

00:55:58.861 --> 00:56:01.169 you know I am T like you mentioned.

NOTE Confidence: 0.715956203666667

00:56:01.170 --> 00:56:03.315 I'm like sometimes this untracked

NOTE Confidence: 0.715956203666667

00:56:03.315 --> 00:56:04.602 tumors can morphologically

NOTE Confidence: 0.715956203666667

00:56:04.602 --> 00:56:06.369 resemble a lot of things.

NOTE Confidence: 0.715956203666667

00:56:06.370 --> 00:56:08.512 So if you say something like IMT

NOTE Confidence: 0.715956203666667

00:56:08.512 --> 00:56:10.694 and all positive are you done there

NOTE Confidence: 0.715956203666667

00:56:10.694 --> 00:56:13.446 or do you go to NGS or whatever

NOTE Confidence: 0.715956203666667

00:56:13.446 --> 00:56:14.938 mutational panel you have?

NOTE Confidence: 0.758095731818182

00:56:16.140 --> 00:56:18.039 So I mean I I still have a morphologist

NOTE Confidence: 0.758095731818182

00:56:18.039 --> 00:56:21.050 at heart, so I start with morphology

NOTE Confidence: 0.758095731818182

00:56:21.050 --> 00:56:23.810 and and also the clinical presentation.

NOTE Confidence: 0.758095731818182

00:56:23.810 --> 00:56:25.314 So do you know?

NOTE Confidence: 0.758095731818182

00:56:25.314 --> 00:56:26.818 Obviously they're still IMT.

NOTE Confidence: 0.758095731818182

00:56:26.820 --> 00:56:28.458 They're just imt's they look beautiful,

NOTE Confidence: 0.758095731818182

00:56:28.460 --> 00:56:31.300 I imds, and so in this blinded review,

NOTE Confidence: 0.758095731818182

00:56:31.300 --> 00:56:33.980 for example, that I did with Alex and

NOTE Confidence: 0.758095731818182

00:56:33.980 --> 00:56:35.820 Paolo that were these entrec tumors,

NOTE Confidence: 0.758095731818182

00:56:35.820 --> 00:56:37.158 where some of them I EMTs.

NOTE Confidence: 0.758095731818182

00:56:37.160 --> 00:56:39.554 Yes. So I think a subset of

NOTE Confidence: 0.758095731818182

00:56:39.560 --> 00:56:41.920 imt's can harbor and track.

NOTE Confidence: 0.758095731818182

00:56:41.920 --> 00:56:43.936 So I start with the morphology and then.

NOTE Confidence: 0.758095731818182

00:56:43.940 --> 00:56:45.430 And yes, I also use.

NOTE Confidence: 0.758095731818182

00:56:45.430 --> 00:56:48.167 I use pound track and elk and

NOTE Confidence: 0.758095731818182

00:56:48.167 --> 00:56:50.280 other IHC pretty liberally.

NOTE Confidence: 0.758095731818182

00:56:50.280 --> 00:56:52.650 But I have a low threshold

NOTE Confidence: 0.758095731818182

00:56:52.650 --> 00:56:54.230 to send for sequencing.

NOTE Confidence: 0.758095731818182

00:56:54.230 --> 00:56:55.400 Thank you Yep.

NOTE Confidence: 0.747024905714286

00:57:00.250 --> 00:57:02.679 There is a commentary on the Charter,

NOTE Confidence: 0.747024905714286

00:57:02.680 --> 00:57:06.375 but I will read up visits from George

NOTE Confidence: 0.747024905714286

00:57:06.375 --> 00:57:08.865 Massage and he suggested maybe it's

NOTE Confidence: 0.747024905714286

00:57:08.865 --> 00:57:11.510 time to resurrect the term fibrosarcoma

NOTE Confidence: 0.747024905714286

00:57:11.510 --> 00:57:14.280 and that Gato molecular to avoid

NOTE Confidence: 0.747024905714286

00:57:14.280 --> 00:57:16.476 the way nomenklatura limitations.

NOTE Confidence: 0.928599633571429

00:57:20.920 --> 00:57:22.280 I like this suggestion.

NOTE Confidence: 0.928599633571429

00:57:22.280 --> 00:57:24.789 I think that there would be some

NOTE Confidence: 0.928599633571429

00:57:24.789 --> 00:57:26.962 backlash from adult BST pathologists.

NOTE Confidence: 0.928599633571429

00:57:26.962 --> 00:57:27.934 There's there's,

NOTE Confidence: 0.928599633571429

00:57:27.934 --> 00:57:30.460 so there's been this systematic desire

NOTE Confidence: 0.928599633571429

00:57:30.460 --> 00:57:33.540 to rid our world of fibrosarcoma.

NOTE Confidence: 0.928599633571429

00:57:33.540 --> 00:57:35.440 At least the adult fibrosarcoma

NOTE Confidence: 0.928599633571429

00:57:35.440 --> 00:57:36.960 for more precise nomenclature,

NOTE Confidence: 0.928599633571429

00:57:36.960 --> 00:57:39.804 but I understand the desire to to to want

NOTE Confidence: 0.928599633571429

00:57:39.804 --> 00:57:42.635 to do that at the same point in time.

NOTE Confidence: 0.928599633571429

00:57:42.640 --> 00:57:44.040 I think it's really hard,

NOTE Confidence: 0.928599633571429

00:57:44.040 --> 00:57:46.098 you know, for many years we tried

NOTE Confidence: 0.928599633571429

00:57:46.098 --> 00:57:48.188 to get rid of you went from.

NOTE Confidence: 0.928599633571429

00:57:48.190 --> 00:57:50.633 To UPS to try to to rid

NOTE Confidence: 0.928599633571429

00:57:50.633 --> 00:57:53.050 the world of fibrosarcoma.

NOTE Confidence: 0.928599633571429

00:57:53.050 --> 00:57:54.130 I think the nomenclature

NOTE Confidence: 0.928599633571429

00:57:54.130 --> 00:57:55.210 is just very confusing.

NOTE Confidence: 0.928599633571429

00:57:55.210 --> 00:57:56.946 You know, in an adult I I do.

NOTE Confidence: 0.928599633571429

00:57:56.950 --> 00:57:58.290 Adult bonus as you two,

NOTE Confidence: 0.928599633571429

00:57:58.290 --> 00:57:59.664 we've really fibrosarcoma,

NOTE Confidence: 0.928599633571429

00:57:59.664 --> 00:58:02.412 is so strictly reserved now for

NOTE Confidence: 0.928599633571429

00:58:02.412 --> 00:58:03.910 fibrosarcoma arising in DFS,

NOTE Confidence: 0.928599633571429

00:58:03.910 --> 00:58:05.860 and so the term fibrosarcoma

NOTE Confidence: 0.928599633571429

00:58:05.860 --> 00:58:07.810 itself is just so confusing,

NOTE Confidence: 0.928599633571429

00:58:07.810 --> 00:58:09.371 and we've kind of created a mess

NOTE Confidence: 0.928599633571429

00:58:09.371 --> 00:58:11.289 of our own nomenclature sometimes,

NOTE Confidence: 0.928599633571429

00:58:11.290 --> 00:58:13.887 and it's it's hard to explain it.

NOTE Confidence: 0.928599633571429

00:58:13.890 --> 00:58:17.058 I often joke that it's created just to

NOTE Confidence: 0.928599633571429

00:58:17.058 --> 00:58:19.689 torture pathology residents and clinicians.

NOTE Confidence: 0.928599633571429

00:58:19.690 --> 00:58:20.506 So so yes,

NOTE Confidence: 0.928599633571429

00:58:20.506 --> 00:58:22.138 we do need to refine our

NOTE Confidence: 0.928599633571429

00:58:22.138 --> 00:58:23.609 nomenclature and in a better way.

NOTE Confidence: 0.823640398333333

00:58:31.180 --> 00:58:33.406 Without going too much into detail,

NOTE Confidence: 0.823640398333333

00:58:33.410 --> 00:58:36.738 very specific engines use.

NOTE Confidence: 0.8139573

00:58:39.900 --> 00:58:44.340 So yes and yes or no,

NOTE Confidence: 0.8139573

00:58:44.340 --> 00:58:46.916 I think with NGS you have to be

NOTE Confidence: 0.8139573

00:58:46.916 --> 00:58:49.216 very careful because not all created

NOTE Confidence: 0.8139573

00:58:49.216 --> 00:58:52.412 equal and and not just. You know,

NOTE Confidence: 0.8139573

00:58:52.412 --> 00:58:55.254 I often see people bigger is better,

NOTE Confidence: 0.8139573

00:58:55.260 --> 00:58:57.234 and I don't think bigger is better.

NOTE Confidence: 0.8139573

00:58:57.240 --> 00:58:59.481 You need to be mindful of what genes you

NOTE Confidence: 0.8139573

00:58:59.481 --> 00:59:01.998 have and what the the sequencing capacity is.

NOTE Confidence: 0.8139573

00:59:02.000 --> 00:59:04.569 So I'm fortunate that my institution is

NOTE Confidence: 0.8139573

00:59:04.569 --> 00:59:07.049 affiliated with the night Diagnostic lab.

NOTE Confidence: 0.8139573

00:59:07.050 --> 00:59:09.124 If you guys are familiar, it's a large.

NOTE Confidence: 0.8139573

00:59:09.124 --> 00:59:10.964 Molecular Reference lab and so

NOTE Confidence: 0.8139573

00:59:10.964 --> 00:59:13.368 you know for sake of simplicity.

NOTE Confidence: 0.8139573

00:59:13.370 --> 00:59:14.246 And because it's a good lab,

NOTE Confidence: 0.8139573

00:59:14.250 --> 00:59:16.614 I often send my sequencing to

NOTE Confidence: 0.8139573

00:59:16.614 --> 00:59:18.190 the night diagnostic lab.

NOTE Confidence: 0.8139573

00:59:18.190 --> 00:59:20.075 They were founded by Chris

NOTE Confidence: 0.8139573

00:59:20.075 --> 00:59:21.583 Corliss and Brian Druker.

NOTE Confidence: 0.8139573

00:59:21.590 --> 00:59:23.630 If you guys are familiar with Brian Druker,

NOTE Confidence: 0.8139573

00:59:23.630 --> 00:59:25.688 he was influential in and you

NOTE Confidence: 0.8139573

00:59:25.688 --> 00:59:27.650 know the development of GLEEVEC.

NOTE Confidence: 0.8139573

00:59:27.650 --> 00:59:29.018 So I come from an institution

NOTE Confidence: 0.8139573

00:59:29.018 --> 00:59:31.107 that has a long line of succession

NOTE Confidence: 0.8139573

00:59:31.107 --> 00:59:32.607 of targeted therapeutics and

NOTE Confidence: 0.8139573

00:59:32.607 --> 00:59:34.190 identification of tyrosine kinases,

NOTE Confidence: 0.8139573

00:59:34.190 --> 00:59:36.758 so it really benefits my my work and

NOTE Confidence: 0.8139573

00:59:36.758 --> 00:59:39.117 partly why I came here so covering.

NOTE Confidence: 0.8139573

00:59:39.120 --> 00:59:40.995 Chinese alterations is not a

NOTE Confidence: 0.8139573

00:59:40.995 --> 00:59:42.495 problem for my sequencing.

NOTE Confidence: 0.8139573

00:59:42.500 --> 00:59:43.412 That being said,

NOTE Confidence: 0.8139573

00:59:43.412 --> 00:59:45.970 I do a lot of content work and I

NOTE Confidence: 0.8139573

00:59:45.970 --> 00:59:47.992 just recently actually got a console

NOTE Confidence: 0.8139573

00:59:47.992 --> 00:59:50.000 for just not nodular fasciitis,

NOTE Confidence: 0.8139573

00:59:50.000 --> 00:59:51.152 but they're like, oh,

NOTE Confidence: 0.8139573

00:59:51.152 --> 00:59:53.500 we did the sequencing panel of 500 genes.

NOTE Confidence: 0.8139573

00:59:53.500 --> 00:59:54.290 But ironically,

NOTE Confidence: 0.8139573

00:59:54.290 --> 00:59:57.055 USP 6 wasn't actually included on that.

NOTE Confidence: 0.8139573

00:59:57.060 --> 00:59:58.180 So just a word to the wise,

NOTE Confidence: 0.8139573

00:59:58.180 --> 00:59:59.890 make sure that you understand which

NOTE Confidence: 0.8139573

00:59:59.890 --> 01:00:01.880 genes are covered and the limitations.

NOTE Confidence: 0.8139573

01:00:01.880 --> 01:00:03.040 So USP 6, for example,

NOTE Confidence: 0.8139573

01:00:03.040 --> 01:00:06.155 is often an alteration of promoter swapping.

NOTE Confidence: 0.8139573

01:00:06.160 --> 01:00:07.732 So next generation sequencing

NOTE Confidence: 0.8139573

01:00:07.732 --> 01:00:09.304 often won't actually detect.

NOTE Confidence: 0.8139573

01:00:09.310 --> 01:00:11.518 USP 6 gene alterations.

NOTE Confidence: 0.8139573

01:00:11.518 --> 01:00:14.515 So just understanding the tests they

NOTE Confidence: 0.8139573

01:00:14.515 --> 01:00:17.365 are ordering is really important and

NOTE Confidence: 0.8139573

01:00:17.365 --> 01:00:19.998 why it might fail. I always you know.

NOTE Confidence: 0.8139573

01:00:19.998 --> 01:00:20.330 Again,

NOTE Confidence: 0.8139573

01:00:20.330 --> 01:00:22.877 tell my trainees a test is a test and

NOTE Confidence: 0.8139573

01:00:22.877 --> 01:00:25.067 every test has its limitations and

NOTE Confidence: 0.8139573

01:00:25.070 --> 01:00:27.887 even within my lab who I think is terrific,

NOTE Confidence: 0.8139573

01:00:27.890 --> 01:00:30.913 I recently had an IMT and they didn't

NOTE Confidence: 0.8139573

01:00:30.913 --> 01:00:32.718 detect an out gene rearrangement

NOTE Confidence: 0.8139573

01:00:32.718 --> 01:00:35.461 and Chris Corliss who's an amazing

NOTE Confidence: 0.8139573

01:00:35.461 --> 01:00:37.262 molecular pathologist. He was like.

NOTE Confidence: 0.8139573

01:00:37.262 --> 01:00:38.906 Are you sure if your diagnosis

NOTE Confidence: 0.8139573

01:00:38.906 --> 01:00:39.878 and I said yes?

01:00:39.880 --> 01:00:41.664 And then we did fish and it was

01:00:41.664 --> 01:00:43.453 fish positive and so he went back

01:00:43.453 --> 01:00:44.743 and manually read the sequencing

01:00:44.793 --> 01:00:46.578 reads and found the ALK gene fusion.

01:00:46.580 --> 01:00:47.591 So you know,

01:00:47.591 --> 01:00:49.613 every every test has its limitations.

01:00:56.090 --> 01:00:59.524 I can read it up for you by Rita Brad.

01:00:59.524 --> 01:01:02.450 What do you think about pan track?

01:01:02.450 --> 01:01:05.228 A minister chemistry in epithelial tumor?

01:01:05.230 --> 01:01:07.960 Do you have any issue with specificity?

01:01:09.520 --> 01:01:10.756 Again, great question.

01:01:10.756 --> 01:01:14.751 Thank you, I I. As a pediatric,

01:01:14.751 --> 01:01:15.859 components of tissue pathologists,

01:01:15.860 --> 01:01:17.410 I don't use it regularly

01:01:17.410 --> 01:01:18.340 in epithelial tumors.

01:01:18.340 --> 01:01:19.448 With a few exceptions,

NOTE Confidence: 0.914309534

01:01:19.448 --> 01:01:21.830 so I've used it a few times in

NOTE Confidence: 0.914309534

01:01:21.830 --> 01:01:23.465 thyroid for Pediatrics and I've

NOTE Confidence: 0.914309534

01:01:23.465 --> 01:01:25.840 used it for secretory carcinomas,

NOTE Confidence: 0.914309534

01:01:25.840 --> 01:01:27.724 both in salivary glands and breast

NOTE Confidence: 0.914309534

01:01:27.724 --> 01:01:28.980 and some pediatric patients,

NOTE Confidence: 0.914309534

01:01:28.980 --> 01:01:32.548 and it works well.

NOTE Confidence: 0.914309534

01:01:32.550 --> 01:01:34.937 Can I am very particular in how

NOTE Confidence: 0.914309534

01:01:34.937 --> 01:01:37.383 I titrate my Pantech ihcc so I

NOTE Confidence: 0.914309534

01:01:37.383 --> 01:01:40.554 validate it on a on tumor which is

NOTE Confidence: 0.914309534

01:01:40.554 --> 01:01:42.730 different than most institutions,

NOTE Confidence: 0.914309534

01:01:42.730 --> 01:01:45.439 so I have it titrated very low so I

NOTE Confidence: 0.914309534

01:01:45.439 --> 01:01:48.168 don't get so much background staining.

NOTE Confidence: 0.914309534

01:01:48.170 --> 01:01:51.354 It does mean that I am very aware

NOTE Confidence: 0.914309534

01:01:51.354 --> 01:01:55.138 that I can miss some check 3 fusions

NOTE Confidence: 0.914309534

01:01:55.140 --> 01:01:58.299 so I I would say don't have very many

NOTE Confidence: 0.914309534

01:01:58.299 --> 01:02:00.868 issues with specificity because I've

NOTE Confidence: 0.914309534

01:02:00.868 --> 01:02:04.072 purposely titrated my stain that way.

NOTE Confidence: 0.914309534

01:02:04.080 --> 01:02:05.200 And so if it is,

NOTE Confidence: 0.914309534

01:02:05.200 --> 01:02:07.040 it is very blazingly positive.

NOTE Confidence: 0.914309534

01:02:07.040 --> 01:02:08.903 I know it's positive but I do know that

NOTE Confidence: 0.914309534

01:02:08.903 --> 01:02:11.039 I have the risk of missing some Trek 3.

NOTE Confidence: 0.914309534

01:02:11.040 --> 01:02:12.696 So if it's negative and I have a high

NOTE Confidence: 0.914309534

01:02:12.696 --> 01:02:16.100 level of suspicion, I send it for NGS.

NOTE Confidence: 0.914309534

01:02:16.100 --> 01:02:16.778 I don't.

NOTE Confidence: 0.914309534

01:02:16.778 --> 01:02:18.812 I and there was a really

NOTE Confidence: 0.914309534

01:02:18.812 --> 01:02:20.768 great paper by Jason Hornet.

NOTE Confidence: 0.914309534

01:02:20.770 --> 01:02:22.058 Go about, you know,

NOTE Confidence: 0.914309534

01:02:22.058 --> 01:02:24.946 kind of benefit of doing this for screening

NOTE Confidence: 0.914309534

01:02:24.946 --> 01:02:27.610 for colorectal cancers or other cancers,

NOTE Confidence: 0.914309534

01:02:27.610 --> 01:02:29.801 and the number of cases you would

NOTE Confidence: 0.914309534

01:02:29.801 --> 01:02:32.477 need to screen to see the benefit and

NOTE Confidence: 0.914309534

01:02:32.477 --> 01:02:35.059 basically the the summary of the paper is.

NOTE Confidence: 0.914309534

01:02:35.060 --> 01:02:37.670 It's not really worth it,

NOTE Confidence: 0.914309534

01:02:37.670 --> 01:02:39.678 so I encourage you to read that for

NOTE Confidence: 0.914309534

01:02:39.678 --> 01:02:41.827 other kind of adult carcinoma screening.

NOTE Confidence: 0.914309534

01:02:41.830 --> 01:02:43.510 I haven't personally done that.

NOTE Confidence: 0.914309534

01:02:43.510 --> 01:02:45.718 'cause I don't do that in

NOTE Confidence: 0.914309534

01:02:45.718 --> 01:02:47.432 my practice as much so.

NOTE Confidence: 0.914309534

01:02:47.432 --> 01:02:48.642 I think there would be

NOTE Confidence: 0.914309534

01:02:48.642 --> 01:02:49.368 some limitations there.

NOTE Confidence: 0.914309534

01:02:49.370 --> 01:02:51.248 I think that as the sort

NOTE Confidence: 0.914309534

01:02:51.248 --> 01:02:52.500 of path director here,

NOTE Confidence: 0.914309534

01:02:52.500 --> 01:02:54.636 I advocate for just for like lung cancers.

NOTE Confidence: 0.914309534

01:02:54.640 --> 01:02:56.758 We have a nice lung cancer

NOTE Confidence: 0.914309534

01:02:56.758 --> 01:02:58.697 molecular panel and it covers

NOTE Confidence: 0.914309534

01:02:58.697 --> 01:03:00.967 all the lung cancer alterations

NOTE Confidence: 0.914309534

01:03:00.967 --> 01:03:03.360 including track out care as etc.

NOTE Confidence: 0.914309534

01:03:03.360 --> 01:03:05.745 And I think that that is a better utility,

NOTE Confidence: 0.914309534

01:03:05.750 --> 01:03:07.266 cost effectiveness and tissue

NOTE Confidence: 0.914309534

01:03:07.266 --> 01:03:10.406 saving just to to be able to get

NOTE Confidence: 0.914309534

01:03:10.406 --> 01:03:12.376 everything done for that patient.

NOTE Confidence: 0.87412328625

01:03:18.520 --> 01:03:21.742 Well, any other question. Otherwise we

NOTE Confidence: 0.87412328625

01:03:21.742 --> 01:03:25.110 will let Jessica finish up her coffee.

NOTE Confidence: 0.89730571125

01:03:26.590 --> 01:03:28.518 I'm happy to stay on for questions or

NOTE Confidence: 0.89730571125

01:03:28.518 --> 01:03:30.660 people can email me if they have questions.

NOTE Confidence: 0.580027915111111

01:03:34.420 --> 01:03:37.354 Uh, I don't see anything more in the chat,

NOTE Confidence: 0.580027915111111

01:03:37.360 --> 01:03:39.960 so Jessica was really pleasure.

NOTE Confidence: 0.580027915111111

01:03:39.960 --> 01:03:41.430 And thank you so much.

NOTE Confidence: 0.580650506666667

01:03:41.820 --> 01:03:43.998 Thank you all.