WEBVTT

NOTE duration:"00:17:01.2910000"

NOTE language:en-us

NOTE Confidence: 0.97908735

00:00:04.460 --> 00:00:06.910 Indications to perform a focused

NOTE Confidence: 0.97908735

00:00:06.910 --> 00:00:08.860 cardiac ultrasound include assessment

NOTE Confidence: 0.97908735

00:00:08.860 --> 00:00:10.820 of left ventricular function,

NOTE Confidence: 0.97908735

00:00:10.820 --> 00:00:12.772 assessment for pericardial effusion,

NOTE Confidence: 0.97908735

00:00:12.772 --> 00:00:14.730 assessment for relative chamber

NOTE Confidence: 0.97908735

00:00:14.730 --> 00:00:17.175 size and right heart strain,

NOTE Confidence: 0.97908735

00:00:17.175 --> 00:00:20.110 and the global assessment of the

NOTE Confidence: 0.97908735

00:00:20.110 --> 00:00:23.040 inferior vena cava for volume status.

NOTE Confidence: 0.984081

00:00:25.240 --> 00:00:26.980 The focus will be done with

NOTE Confidence: 0.984081

00:00:26.980 --> 00:00:28.140 a low frequency transducer.

NOTE Confidence: 0.984081

00:00:28.140 --> 00:00:30.460 Your best choice will be a phased array

NOTE Confidence: 0.984081

00:00:30.460 --> 00:00:32.986 probe as it will allow you to look at

NOTE Confidence: 0.984081

00:00:32.986 --> 00:00:35.100 the heart in between the rib spaces.

NOTE Confidence: 0.984081

00:00:35.100 --> 00:00:37.028 Alternatively, you may use

NOTE Confidence: 0.984081

00:00:37.028 --> 00:00:39.438 a curvilinear probe as well.

NOTE Confidence: 0.984081

00:00:39.440 --> 00:00:41.580 A complete focus will consist

NOTE Confidence: 0.984081

00:00:41.580 --> 00:00:43.292 of five separate views.

NOTE Confidence: 0.984081

00:00:43.300 --> 00:00:45.450 These include the Parish journal,

NOTE Confidence: 0.984081

00:00:45.450 --> 00:00:48.018 Long Access, the Parasternal short axis,

NOTE Confidence: 0.984081

00:00:48.020 --> 00:00:49.740 the apical four chamber,

NOTE Confidence: 0.984081

00:00:49.740 --> 00:00:53.170 a subxiphoid and an inferior vena cava view.

NOTE Confidence: 0.9852698

00:01:11.920 --> 00:01:12.730 personal assets placing

NOTE Confidence: 0.9852698

00:01:12.730 --> 00:01:14.942 the transducer in the long axis parallel

NOTE Confidence: 0.9852698

00:01:14.942 --> 00:01:17.684 to the license at the heart you get an

NOTE Confidence: 0.9852698

00:01:17.684 --> 00:01:19.470 image that looks something like this.

NOTE Confidence: 0.9852698

00:01:19.470 --> 00:01:21.546 Again, you can rotate the transducer

NOTE Confidence: 0.9852698

00:01:21.546 --> 00:01:24.330 to get an image that looks. Like this?

NOTE Confidence: 0.9808655

00:01:32.820 --> 00:01:35.678 In the left video clip there is a

NOTE Confidence: 0.9808655

00:01:35.680 --> 00:01:37.460 heart with good symmetric squeeze

NOTE Confidence: 0.9808655

00:01:37.460 --> 00:01:39.601 of the left ventricle and nice

NOTE Confidence: 0.9808655

00:01:39.601 --> 00:01:41.750 excursion of the anterior leaflet of

NOTE Confidence: 0.9808655

00:01:41.750 --> 00:01:43.886 the mitral valve hitting the septum.

NOTE Confidence: 0.9808655

00:01:43.890 --> 00:01:46.030 In the video clip on the

NOTE Confidence: 0.9808655

00:01:46.030 --> 00:01:47.454 right, there is severely

NOTE Confidence: 0.9808655

00:01:47.454 --> 00:01:48.890 depressed function. In a

NOTE Confidence: 0.9808655

00:01:48.890 --> 00:01:50.670 six week old after a

NOTE Confidence: 0.9808655

00:01:50.670 --> 00:01:52.100 cardiac arrest event. Note

NOTE Confidence: 0.9808655

00:01:52.100 --> 00:01:54.236 the poor global squeeze of the

NOTE Confidence: 0.9808655

00:01:54.236 --> 00:01:56.480 entire left ventricle and the absent

NOTE Confidence: 0.9808655

00:01:56.480 --> 00:01:57.938 movement. Of the mitral valve.

NOTE Confidence: 0.96915644

00:02:03.980 --> 00:02:05.890 The left clip again depicts

NOTE Confidence: 0.96915644

00:02:05.890 --> 00:02:07.809 a normal appearing heart on

NOTE Confidence: 0.96915644

00:02:07.810 --> 00:02:10.108 the right side of the screen.

NOTE Confidence: 0.96915644

00:02:10.110 --> 00:02:12.025 There is a circumferential pericardial

NOTE Confidence: 0.96915644

00:02:12.025 --> 00:02:13.940 effusion with preserved LV function.

NOTE Confidence: 0.96915644

00:02:13.940 --> 00:02:16.614 Note the arrow points to the effusion.

NOTE Confidence: 0.96915644

00:02:16.620 --> 00:02:18.136 Collecting to the posterior

NOTE Confidence: 0.96915644

00:02:18.136 --> 00:02:20.830 aspect of the heart on this view.

NOTE Confidence: 0.98197556

00:02:26.430 --> 00:02:28.860 You can use the descending aorta to

NOTE Confidence: 0.98197556

00:02:28.860 --> 00:02:30.591 differentiate whether a large fluid

NOTE Confidence: 0.98197556

00:02:30.591 --> 00:02:32.673 collection is present within the pericardial

NOTE Confidence: 0.98197556

00:02:32.673 --> 00:02:34.759 SAC or outside of the pericardium.

NOTE Confidence: 0.98197556

00:02:34.760 --> 00:02:36.360 In these clips, the descending

NOTE Confidence: 0.98197556

00:02:36.360 --> 00:02:38.580 aorta is marked by an asterisk.

NOTE Confidence: 0.98197556

00:02:38.580 --> 00:02:40.656 Note the clip on the left,

NOTE Confidence: 0.98197556

00:02:40.660 --> 00:02:42.942 a large fluid collection has seemed to

NOTE Confidence: 0.98197556

00:02:42.942 --> 00:02:45.517 run in front of the descending aorta.

NOTE Confidence: 0.98197556

00:02:45.520 --> 00:02:48.634 In contrast, on the video clip on the right,

NOTE Confidence: 0.98197556

00:02:48.640 --> 00:02:51.066 a large fluid collection is present behind

NOTE Confidence: 0.98197556

00:02:51.066 --> 00:02:53.440 the descending aorta and this represents.

NOTE Confidence: 0.98197556

00:02:53.440 --> 00:02:54.700 A pleural effusion.

NOTE Confidence: 0.90166426

00:03:02.940 --> 00:03:05.960 Again, on the left of the screen is a normal

NOTE Confidence: 0.90166426

00:03:05.960 --> 00:03:08.070 PSA view with the left ventricle being

NOTE Confidence: 0.90166426

00:03:08.070 --> 00:03:10.380 the largest chamber that can be

NOTE Confidence: 0.90166426

00:03:10.380 --> 00:03:12.600 seen on the screen. Compare that

NOTE Confidence: 0.94326115

00:03:12.600 --> 00:03:14.959 to the right sided clip where there

NOTE Confidence: 0.94326115

00:03:14.960 --> 00:03:16.838 is an enlarged ventricle and a

NOTE Confidence: 0.94326115

00:03:16.838 --> 00:03:19.019 child with a natural septal defect.

NOTE Confidence: 0.94326115

00:03:19.020 --> 00:03:22.060 The ASD can be seen to come into view

NOTE Confidence: 0.94326115

00:03:22.060 --> 00:03:24.427 during the early portion of this clip.

NOTE Confidence: 0.94326115

00:03:24.427 --> 00:03:26.116 The RV has compensated and

NOTE Confidence: 0.94326115

00:03:26.116 --> 00:03:27.468 become enlarged due to

NOTE Confidence: 0.94326115

00:03:27.470 --> 00:03:29.155 the constant left to right

NOTE Confidence: 0.94326115

00:03:29.155 --> 00:03:30.510 shunt through the ASD.

NOTE Confidence: 0.98481625

00:03:36.580 --> 00:03:39.750 And finally, in these clips one can

NOTE Confidence: 0.98481625

00:03:39.750 --> 00:03:42.600 compare the normal cardiac structure that

NOTE Confidence: 0.98481625

00:03:42.682 --> 00:03:45.860 can be observed on the clip on the left.

NOTE Confidence: 0.98481625

00:03:45.860 --> 00:03:48.804 The video clip on the right shows severe

NOTE Confidence: 0.98481625

00:03:48.804 --> 00:03:50.510 diffuse hypertrophic cardiomyopathy.

NOTE Confidence: 0.98481625

00:03:50.510 --> 00:03:52.615 This particular adolescent presented with

NOTE Confidence: 0.98481625

00:03:52.615 --> 00:03:54.725 Presyncope during a basketball game,

NOTE Confidence: 0.98481625

00:03:54.725 --> 00:03:57.748 and he had a normal echocardiogram several

NOTE Confidence: 0.98481625

00:03:57.748 --> 00:04:01.060 years prior to this point of care study.

NOTE Confidence: 0.9863938

00:04:25.190 --> 00:04:27.200 Rotating 90 degrees, you get

NOTE Confidence: 0.9863938

00:04:27.200 --> 00:04:28.808 required personal short access.

NOTE Confidence: 0.9810245

00:04:30.920 --> 00:04:32.135 And if you slide toward

NOTE Confidence: 0.9810245

00:04:32.135 --> 00:04:33.350 the apex of the heart.

NOTE Confidence: 0.96444505

00:04:35.630 --> 00:04:36.718 You see the popular

NOTE Confidence: 0.96444505

00:04:36.718 --> 00:04:37.806 muscles and keep sliding.

NOTE Confidence: 0.96444505

00:04:37.810 --> 00:04:39.436 You see the mitral valve slide

NOTE Confidence: 0.96444505

00:04:39.436 --> 00:04:40.494 keep sliding, keep sliding.

NOTE Confidence: 0.96444505

00:04:40.494 --> 00:04:42.036 You should be able to see

NOTE Confidence: 0.96444505

00:04:42.036 --> 00:04:43.520 that you already got flow.

NOTE Confidence: 0.9684751

00:04:49.400 --> 00:04:51.335 Here are two Paris Journal

NOTE Confidence: 0.9684751

00:04:51.335 --> 00:04:52.883 short access comparison views.

NOTE Confidence: 0.9684751

00:04:52.890 --> 00:04:55.242 On the left clip you can see

NOTE Confidence: 0.9684751

00:04:55.242 --> 00:04:56.765 the normal circular appearance

NOTE Confidence: 0.9684751

00:04:56.765 --> 00:04:59.381 of the left ventricle at the

NOTE Confidence: 0.9684751

00:04:59.381 --> 00:05:01.040 papillary muscle level node.

NOTE Confidence: 0.9684751

00:05:01.040 --> 00:05:02.204 In isometric squeeze,

NOTE Confidence: 0.9684751

00:05:02.204 --> 00:05:03.760 and no evidence of

NOTE Confidence: 0.9684751

00:05:03.760 --> 00:05:05.308 pericardial effusion. The clip

NOTE Confidence: 0.9684751

00:05:05.310 --> 00:05:07.632 on the right shows a large

NOTE Confidence: 0.9684751

00:05:07.632 --> 00:05:08.406 pericardial effusion,

NOTE Confidence: 0.9684751

00:05:08.410 --> 00:05:10.738 although the PSA view is not

NOTE Confidence: 0.9684751

00:05:10.738 --> 00:05:12.681 the best for smaller effusions,

NOTE Confidence: 0.9684751

00:05:12.681 --> 00:05:15.608 larger effusions can be confirmed on this.

NOTE Confidence: 0.9684751

00:05:15.610 --> 00:05:17.506 Cardiac window note that the large

NOTE Confidence: 0.9684751

00:05:17.506 --> 00:05:19.438 fluid collection is seen to run

NOTE Confidence: 0.9684751

00:05:19.438 --> 00:05:20.968 anterior to the descending aorta,

NOTE Confidence: 0.9684751

00:05:20.970 --> 00:05:22.860 which can be seen here in

NOTE Confidence: 0.9854194

00:05:22.860 --> 00:05:23.799 short access as

NOTE Confidence: 0.9854194

00:05:23.800 --> 00:05:25.690 a course is behind the heart.

NOTE Confidence: 0.9523059

00:05:32.740 --> 00:05:34.792 Here we can compare the relative

NOTE Confidence: 0.9523059

00:05:34.792 --> 00:05:36.843 chamber sizes in a PSA view.

NOTE Confidence: 0.9523059

00:05:36.843 --> 00:05:38.892 The normal clip on the left.

NOTE Confidence: 0.9523059

00:05:38.892 --> 00:05:40.604 You can observe the croissant

NOTE Confidence: 0.9523059

00:05:40.604 --> 00:05:42.319 shaped right ventricle next to

NOTE Confidence: 0.9523059

00:05:42.320 --> 00:05:44.030 the donut shaped left ventricle.

NOTE Confidence: 0.9523059

00:05:44.030 --> 00:05:45.736 The left ventricle is the

NOTE Confidence: 0.9523059

00:05:45.736 --> 00:05:47.424 larger of the two chambers.

NOTE Confidence: 0.9523059

00:05:47.424 --> 00:05:49.440 The abnormal clip on the right

NOTE Confidence: 0.9523059

00:05:49.510 --> 00:05:51.208 shows an enlarged right ventricle

NOTE Confidence: 0.9523059

00:05:51.210 --> 00:05:53.262 and an infant who was eventually

NOTE Confidence: 0.9523059

00:05:53.262 --> 00:05:54.630 diagnosed with aortic stenosis.

NOTE Confidence: 0.9523059

00:05:54.630 --> 00:05:55.310 The RV

NOTE Confidence: 0.9523059

00:05:55.310 --> 00:05:57.866 here is the bigger of the

NOTE Confidence: 0.9523059

00:05:57.866 --> 00:06:00.028 two chambers. There is also

NOTE Confidence: 0.95700216

00:06:00.030 --> 00:06:02.210 abnormal squeeze and global depression

NOTE Confidence: 0.95700216

00:06:02.210 --> 00:06:05.260 of systolic function. On this view. These

NOTE Confidence: 0.95700216

00:06:05.260 --> 00:06:08.313 next set of clips once again compare

NOTE Confidence: 0.95700216

00:06:08.313 --> 00:06:10.488 a normal PSA Chamber evaluation

NOTE Confidence: 0.95700216

00:06:10.490 --> 00:06:13.540 on the left compared to a markedly

NOTE Confidence: 0.95700216

00:06:13.540 --> 00:06:14.848 abnormal appearance of

NOTE Confidence: 0.95700216

00:06:14.850 --> 00:06:16.158 the right ventricle

NOTE Confidence: 0.95700216

00:06:16.160 --> 00:06:18.775 on the right. In this abnormal

NOTE Confidence: 0.95700216

00:06:18.775 --> 00:06:21.390 clip, there is a dreaded design

NOTE Confidence: 0.95700216

00:06:21.390 --> 00:06:23.134 with flattening of the

NOTE Confidence: 0.95700216

00:06:23.134 --> 00:06:25.750 interventricular septum due to a large

NOTE Confidence: 0.95700216

00:06:25.750 --> 00:06:27.058 pulmonary embolus, which

NOTE Confidence: 0.95700216

00:06:27.060 --> 00:06:28.800 has caused increased pressures.

NOTE Confidence: 0.95700216

00:06:28.800 --> 00:06:30.886 In the right ventricle and

NOTE Confidence: 0.95700216

00:06:30.886 --> 00:06:31.682 subsequent enlargement,

NOTE Confidence: 0.95700216

00:06:31.682 --> 00:06:34.470 the septal fattening is a non specific

NOTE Confidence: 0.95700216

00:06:34.470 --> 00:06:37.258 finding and can be caused by any

NOTE Confidence: 0.95700216

00:06:37.258 --> 00:06:39.248 disease process that elevates pressures

NOTE Confidence: 0.9720687

00:06:39.250 --> 00:06:41.638 in the right ventricle and therefore

NOTE Confidence: 0.9720687

00:06:41.640 --> 00:06:43.228 transmits AD shaped appearance

NOTE Confidence: 0.9720687

00:06:43.228 --> 00:06:44.820 to the left ventricle.

NOTE Confidence: 0.9645728

00:07:06.690 --> 00:07:08.535 The next we would look at

NOTE Confidence: 0.9645728

00:07:08.535 --> 00:07:09.763 is something called and

NOTE Confidence: 0.9645728

00:07:09.770 --> 00:07:11.002 apical, four chamber view,

NOTE Confidence: 0.9645728

00:07:11.002 --> 00:07:12.538 which again you find the

NOTE Confidence: 0.9645728

00:07:12.540 --> 00:07:16.056 apex of the heart filled up.

NOTE Confidence: 0.9645728

00:07:16.060 --> 00:07:16.768 Looking like that.

NOTE Confidence: 0.9857937

00:07:20.000 --> 00:07:21.982 Again, you want to rotate until

NOTE Confidence: 0.9857937

00:07:21.982 --> 00:07:24.299 you get the image that you have.

NOTE Confidence: 0.9857937

00:07:24.300 --> 00:07:26.290 Here again, you can tell the

NOTE Confidence: 0.9857937

00:07:26.290 --> 00:07:28.608 translation back and forth to make sure

NOTE Confidence: 0.9857937

00:07:28.610 --> 00:07:29.934 that the ventricular septum

NOTE Confidence: 0.9857937

00:07:29.934 --> 00:07:31.589 septum lines up with the

NOTE Confidence: 0.9857937

00:07:31.590 --> 00:07:33.240 vertical axis of the image.

NOTE Confidence: 0.9846102

00:07:40.100 --> 00:07:41.712 On this comparison, split screen

NOTE Confidence: 0.9846102

00:07:41.712 --> 00:07:43.327 for the apical four chamber

NOTE Confidence: 0.9846102

00:07:43.330 --> 00:07:45.268 view. The left clip shows a

NOTE Confidence: 0.9846102

00:07:45.268 --> 00:07:46.563 heart with good function.

NOTE Confidence: 0.9846102

00:07:46.563 --> 00:07:48.995 The lateral walls of the left and

NOTE Confidence: 0.9846102

00:07:48.995 --> 00:07:51.263 right ventricle are both seemed to

NOTE Confidence: 0.9846102

00:07:51.263 --> 00:07:53.338 squeeze nicely towards the septum.

NOTE Confidence: 0.9846102

00:07:53.340 --> 00:07:54.768 The clip on the

NOTE Confidence: 0.9808852

00:07:54.770 --> 00:07:57.254 right shows abnormal function on this

NOTE Confidence: 0.9808852

00:07:57.254 --> 00:08:00.118 apical four chamber view of a two week old

NOTE Confidence: 0.9808852

00:08:00.120 --> 00:08:02.264 with the juxta ductal aortic coarctation.

NOTE Confidence: 0.9808852

00:08:02.264 --> 00:08:04.049 Its newborn presented with hypothermia,

NOTE Confidence: 0.9808852

00:08:04.050 --> 00:08:05.526 lethargy, and unexplained dyspnea,

NOTE Confidence: 0.9808852

00:08:05.526 --> 00:08:07.980 but had a normal heart rate and

NOTE Confidence: 0.9808852

00:08:07.980 --> 00:08:09.761 blood pressure at the time.

NOTE Confidence: 0.9808852

00:08:09.761 --> 00:08:11.189 This focus was performed,

NOTE Confidence: 0.9808852

00:08:11.190 --> 00:08:13.514 there appears to be depressed function and

NOTE Confidence: 0.9808852

00:08:13.514 --> 00:08:15.830 poor squeeze of the ventricular walls.

NOTE Confidence: 0.9808852

00:08:15.830 --> 00:08:17.882 In addition, you can see air

NOTE Confidence: 0.9808852

00:08:17.882 --> 00:08:19.686 bubbles coursing through the right

NOTE Confidence: 0.9808852

00:08:19.686 --> 00:08:21.536 atrium and the right ventricle.

NOTE Confidence: 0.9808852

00:08:21.540 --> 00:08:23.946 You may experience this finding if.

NOTE Confidence: 0.9808852

00:08:23.950 --> 00:08:25.560 The focus is performed during

NOTE Confidence: 0.9808852

00:08:25.560 --> 00:08:26.526 Ivy Fluid administration.

NOTE Confidence: 0.9808852

00:08:26.530 --> 00:08:28.318 The other interesting finding here is

NOTE Confidence: 0.9808852

00:08:28.318 --> 00:08:30.604 that there is an occasional air bubble

NOTE Confidence: 0.9808852

00:08:30.604 --> 00:08:32.668 that escapes into the left atrium.

NOTE Confidence: 0.9808852

00:08:32.670 --> 00:08:34.608 This finding is caused by a

NOTE Confidence: 0.9808852

00:08:34.608 --> 00:08:35.577 direct digital communication,

NOTE Confidence: 0.9808852

00:08:35.580 --> 00:08:37.476 such as would be seen with

NOTE Confidence: 0.9808852

00:08:37.476 --> 00:08:39.130 a small ASD or PFO.

NOTE Confidence: 0.97919065

00:08:45.480 --> 00:08:47.110 Here we see comparison views

NOTE Confidence: 0.97919065

00:08:47.110 --> 00:08:49.068 again of a normal appearing apical

NOTE Confidence: 0.97919065

00:08:49.070 --> 00:08:51.758 four chamber view on the left.

NOTE Confidence: 0.97919065

00:08:51.760 --> 00:08:54.168 The video clip on the right is striking

NOTE Confidence: 0.97919065

00:08:54.168 --> 00:08:56.085 for the large fluid collection

NOTE Confidence: 0.97919065

00:08:56.085 --> 00:08:58.165 that is encircling the heart.

NOTE Confidence: 0.97919065

00:08:58.170 --> 00:09:00.042 This large pericardial effusion is starting

NOTE Confidence: 0.97919065

00:09:00.042 --> 00:09:02.440 to show signs of tamponade Physiology.

NOTE Confidence: 0.97919065

00:09:02.440 --> 00:09:04.220 The star marks the lateral

NOTE Confidence: 0.97919065

00:09:04.220 --> 00:09:06.000 wall of the right ventricle.

NOTE Confidence: 0.97919065

00:09:06.000 --> 00:09:08.338 This degree of fluid accumulation in the

NOTE Confidence: 0.97919065

00:09:08.338 --> 00:09:10.528 pericardial SAC has now overcome the

NOTE Confidence: 0.97919065

00:09:10.528 --> 00:09:12.408 pressures within the right ventricle.

NOTE Confidence: 0.97919065

00:09:12.410 --> 00:09:14.846 This is an important finding to recognize

NOTE Confidence: 0.97919065

00:09:14.846 --> 00:09:17.499 as in bowing of the lateral wall of

NOTE Confidence: 0.97919065

00:09:17.499 --> 00:09:19.638 the right ventricle is an ominous

NOTE Confidence: 0.97919065

00:09:19.638 --> 00:09:22.268 finding that requires prompt recognition.

NOTE Confidence: 0.97919065

00:09:22.270 --> 00:09:25.578 And preparations for pericardiocentesis.

NOTE Confidence: 0.9876213

00:09:31.900 --> 00:09:33.908 In this split screen you can see on

NOTE Confidence: 0.9876213

00:09:33.908 --> 00:09:35.664 the left normal appearing chamber

NOTE Confidence: 0.9876213

00:09:35.664 --> 00:09:38.058 sizes and the dominant left ventricle,

NOTE Confidence: 0.9876213

00:09:38.060 --> 00:09:39.884 which is the largest of all

NOTE Confidence: 0.9876213

00:09:39.884 --> 00:09:41.620 the chambers on the screen.

NOTE Confidence: 0.9876213

00:09:41.620 --> 00:09:43.678 The abnormal video clip on the right

NOTE Confidence: 0.9876213

00:09:43.678 --> 00:09:46.022 shows an enlarged right ventricle in an

NOTE Confidence: 0.9876213

00:09:46.022 --> 00:09:47.777 adolescent with a pulmonary embolus.

NOTE Confidence: 0.9876213

00:09:47.780 --> 00:09:49.964 There is a greater than one to one

NOTE Confidence: 0.9876213

00:09:49.964 --> 00:09:52.556 ratio in the size of the right ventricle

NOTE Confidence: 0.9876213

00:09:52.556 --> 00:09:54.580 compared to the left ventricle.

NOTE Confidence: 0.9876213

00:09:54.580 --> 00:09:56.620 This is seen in the presence

NOTE Confidence: 0.9876213

00:09:56.620 --> 00:09:58.540 of right sided heart strain.

NOTE Confidence: 0.9876213

00:09:58.540 --> 00:10:00.695 Which is typically caused by

NOTE Confidence: 0.9876213

00:10:00.695 --> 00:10:02.850 pathology that elevates the pressures

NOTE Confidence: 0.9876213

00:10:02.923 --> 00:10:04.819 in the pulmonary vasculature.

NOTE Confidence: 0.9876213

00:10:04.820 --> 00:10:07.332 One last caveat to consider on the apical

NOTE Confidence: 0.9876213

00:10:07.332 --> 00:10:09.371 four chamber view is the importance

NOTE Confidence: 0.9876213

00:10:09.371 --> 00:10:11.393 of correlating the indicator on the

NOTE Confidence: 0.9876213

00:10:11.459 --> 00:10:13.727 patient to the indicator on the screen.

NOTE Confidence: 0.9876213

00:10:13.730 --> 00:10:15.753 A good anatomical Pearl to take away

NOTE Confidence: 0.9876213

00:10:15.753 --> 00:10:17.756 is that the tricuspid valve will

NOTE Confidence: 0.9876213

00:10:17.756 --> 00:10:20.248 generally take off closer to the probe

NOTE Confidence: 0.9876213

00:10:20.310 --> 00:10:22.302 and therefore higher on the screen

NOTE Confidence: 0.9876213

00:10:22.302 --> 00:10:24.290 when compared to the mitral valve.

NOTE Confidence: 0.9876213

00:10:24.290 --> 00:10:25.280 On first glance,

NOTE Confidence: 0.9876213

00:10:25.280 --> 00:10:26.924 the video clip on the right

NOTE Confidence: 0.9876213

00:10:26.924 --> 00:10:29.285 would appear to be that of an

NOTE Confidence: 0.9876213

00:10:29.285 --> 00:10:30.885 abnormally enlarged right ventricle.

NOTE Confidence: 0.9876213

00:10:30.890 --> 00:10:33.254 This clip is actually a result

NOTE Confidence: 0.9876213

00:10:33.254 --> 00:10:34.830 of an operator error.

NOTE Confidence: 0.9876213

00:10:34.830 --> 00:10:36.515 Instead of having the indicator

NOTE Confidence: 0.9876213

00:10:36.515 --> 00:10:37.863 towards the patient right,

NOTE Confidence: 0.9876213

00:10:37.870 --> 00:10:40.406 the probe was flipped 180 degrees and the

NOTE Confidence: 0.9876213

00:10:40.406 --> 00:10:42.600 indicator was towards the patients left.

NOTE Confidence: 0.9876213

00:10:42.600 --> 00:10:43.780 As you can see,

NOTE Confidence: 0.9876213

00:10:43.780 --> 00:10:45.985 this also flips the image on the

NOTE Confidence: 0.9876213

00:10:45.985 --> 00:10:48.157 screen by 180 degrees given off

NOTE Confidence: 0.9876213

00:10:48.157 --> 00:10:50.259 a false impression of enlarged

NOTE Confidence: 0.9876213

00:10:50.259 --> 00:10:51.669 right sided structures.

NOTE Confidence: 0.9876213

00:10:51.670 --> 00:10:53.644 Since the mitral valve takeoff is

NOTE Confidence: 0.9876213

00:10:53.644 --> 00:10:56.298 lower than that of the tricuspid valve,

NOTE Confidence: 0.9876213

00:10:56.300 --> 00:10:58.281 you can detect that this is likely

NOTE Confidence: 0.9876213

00:10:58.281 --> 00:11:01.727 due to a flipped probe and not due to

NOTE Confidence: 0.9876213

00:11:01.727 --> 00:11:03.411 true right ventricular hypertrophy.

NOTE Confidence: 0.9781779

00:11:27.060 --> 00:11:28.585 Again, you're putting the chance

NOTE Confidence: 0.9781779

00:11:28.585 --> 00:11:30.310 user supplied for region aiming up.

NOTE Confidence: 0.9781779

00:11:30.310 --> 00:11:32.422 Sometimes it's easier to put the

NOTE Confidence: 0.9781779

00:11:32.422 --> 00:11:35.040 hand on top of the transducer.

NOTE Confidence: 0.9781779

00:11:35.040 --> 00:11:37.336 And then Antonio is going to help me

NOTE Confidence: 0.9781779

00:11:37.336 --> 00:11:40.036 change of death so that it shows the heart.

NOTE Confidence: 0.9902366

00:11:42.960 --> 00:11:44.202 Again, that you might find this

NOTE Confidence: 0.9902366

00:11:44.202 --> 00:11:45.390 difficult in a skinny patient.

NOTE Confidence: 0.97910404

00:11:50.860 --> 00:11:52.678 Here we find comparison views of

NOTE Confidence: 0.97910404

00:11:52.678 --> 00:11:54.498 the subxiphoid window on the left

NOTE Confidence: 0.97910404

00:11:54.498 --> 00:11:55.878 you see the normal positioning

NOTE Confidence: 0.97910404

00:11:55.878 --> 00:11:57.669 of the heart behind the liver.

NOTE Confidence: 0.97910404

00:11:57.670 --> 00:11:59.446 As we would expect to see

NOTE Confidence: 0.97910404

00:11:59.446 --> 00:12:00.630 on a fast examination,

NOTE Confidence: 0.97910404

00:12:00.630 --> 00:12:02.660 deliver here is used as an acoustic

NOTE Confidence: 0.97910404

00:12:02.660 --> 00:12:05.094 window to get a good view of the

NOTE Confidence: 0.97910404

00:12:05.094 --> 00:12:06.599 cardiac chambers on the abnormal

NOTE Confidence: 0.97910404

00:12:06.667 --> 00:12:08.620 image on the right of the screen,

NOTE Confidence: 0.97910404

00:12:08.620 --> 00:12:10.576 you see a large pericardial effusion

NOTE Confidence: 0.97910404

00:12:10.576 --> 00:12:12.283 with collapse of the lateral

NOTE Confidence: 0.97910404

00:12:12.283 --> 00:12:13.998 wall of the right ventricle.

NOTE Confidence: 0.97910404

00:12:14.000 --> 00:12:15.446 Although this large effusion

NOTE Confidence: 0.97910404

00:12:15.446 --> 00:12:16.833 appears to be circumferential,

NOTE Confidence: 0.97910404

00:12:16.833 --> 00:12:18.879 the most sensitive place to check

NOTE Confidence: 0.97910404

00:12:18.879 --> 00:12:20.789 for pericardial effusion on the

NOTE Confidence: 0.97910404

00:12:20.789 --> 00:12:22.669 subxiphoid window is between the

NOTE Confidence: 0.97910404

00:12:22.669 --> 00:12:24.467 liver and the right ventricle.

NOTE Confidence: 0.9628603

00:12:30.510 --> 00:12:32.808 This is an example of a

NOTE Confidence: 0.9628603

00:12:32.808 --> 00:12:33.957 small pericardial effusion,

NOTE Confidence: 0.9628603

00:12:33.960 --> 00:12:35.985 as seen on subsequent view

NOTE Confidence: 0.9628603

00:12:35.985 --> 00:12:37.605 found anteriorly between the

NOTE Confidence: 0.9628603

00:12:37.605 --> 00:12:39.320 liver and the right ventricle.

NOTE Confidence: 0.97601736

00:13:12.060 --> 00:13:14.594 We can look at the intravascular status into

NOTE Confidence: 0.97601736

00:13:14.594 --> 00:13:16.813 vascular volume status by looking at the

NOTE Confidence: 0.97601736

00:13:16.820 --> 00:13:17.768 inferior vena cava.

NOTE Confidence: 0.97601736

00:13:17.768 --> 00:13:19.664 You put the transducer right in

NOTE Confidence: 0.97601736

00:13:19.670 --> 00:13:21.362 the midline supply for

NOTE Confidence: 0.97601736

00:13:21.362 --> 00:13:23.054 process and tilting up.

NOTE Confidence: 0.97601736

00:13:23.060 --> 00:13:25.034 CIBC we should be able to see

NOTE Confidence: 0.97601736

00:13:25.034 --> 00:13:26.824 the ABC follow if we deliver

NOTE Confidence: 0.97601736

00:13:26.824 --> 00:13:28.576 all the way into the radio.

NOTE Confidence: 0.97601736

00:13:28.580 --> 00:13:30.280 Alternatively, you can trim it

NOTE Confidence: 0.97601736

00:13:30.280 --> 00:13:31.980 for free so longitudinally again

NOTE Confidence: 0.97601736

00:13:31.980 --> 00:13:33.340 following the interior cable.

NOTE Confidence: 0.9875465

00:13:39.920 --> 00:13:43.010 But you can try to open it up by

NOTE Confidence: 0.9875465

00:13:43.010 --> 00:13:45.872 rotating back and forth until you see

NOTE Confidence: 0.9875465

00:13:45.872 --> 00:13:48.218 it entering right. You can see the

NOTE Confidence: 0.95266825

00:13:58.410 --> 00:14:00.490 So the IVC has been studied

NOTE Confidence: 0.95266825

00:14:00.490 --> 00:14:01.866 in many different manners

NOTE Confidence: 0.95266825

00:14:01.866 --> 00:14:03.250 and many different contexts.

NOTE Confidence: 0.95266825

00:14:03.250 --> 00:14:06.470 To see if it can be used as a reliable

NOTE Confidence: 0.95266825

00:14:06.561 --> 00:14:08.791 tool to assess for volume status.

NOTE Confidence: 0.95266825

00:14:08.791 --> 00:14:09.864 To some degree.

NOTE Confidence: 0.95266825

00:14:09.864 --> 00:14:12.398 This is nuanced research that falls beyond

NOTE Confidence: 0.95266825

00:14:12.398 --> 00:14:14.322 the scope of this learning tutorial.

NOTE Confidence: 0.95266825

00:14:14.322 --> 00:14:16.054 However, you can find information

NOTE Confidence: 0.95266825

00:14:16.054 --> 00:14:18.475 you gather from the IVC to be

NOTE Confidence: 0.95266825

00:14:18.475 --> 00:14:20.545 a useful piece of the puzzle,

NOTE Confidence: 0.95266825

00:14:20.550 --> 00:14:22.335 especially when you combine this

NOTE Confidence: 0.95266825

00:14:22.335 --> 00:14:24.120 information with the other cardiac.

NOTE Confidence: 0.95266825

00:14:24.120 --> 00:14:26.030 Views that you have obtained.

NOTE Confidence: 0.95266825

00:14:26.030 --> 00:14:28.487 Here we find 3 different calibers of

NOTE Confidence: 0.95266825

00:14:28.487 --> 00:14:31.340 the IVC and long access on the left

NOTE Confidence: 0.95266825

00:14:31.340 --> 00:14:34.433 most video clip you see a flat IVC

NOTE Confidence: 0.95266825

00:14:34.433 --> 00:14:36.593 which seems to collapse completely

NOTE Confidence: 0.95266825

00:14:36.593 --> 00:14:38.600 suggestive of hypovolemia or dehydration.

NOTE Confidence: 0.95266825

00:14:38.600 --> 00:14:42.029 In the middle of the screen you see a

NOTE Confidence: 0.95266825

00:14:42.030 --> 00:14:44.310 full IBC with some proximal collapse.

NOTE Confidence: 0.95266825

00:14:44.310 --> 00:14:45.839 Clinical correlation is necessary

NOTE Confidence: 0.95266825

00:14:45.840 --> 00:14:47.745 with particular attention paid to

NOTE Confidence: 0.95266825

00:14:47.745 --> 00:14:49.269 the patients respiratory dynamics.

NOTE Confidence: 0.95266825

00:14:49.270 --> 00:14:51.692 The clip on the right shows a

NOTE Confidence: 0.95266825

00:14:51.692 --> 00:14:53.840 plump IBC without much collapse,

NOTE Confidence: 0.95266825

00:14:53.840 --> 00:14:55.070 seen during inspiration.

NOTE Confidence: 0.95266825

00:14:55.070 --> 00:14:57.120 In the right clinical context,

NOTE Confidence: 0.95266825

00:14:57.120 --> 00:14:59.214 this is suggestive of heart failure

NOTE Confidence: 0.95266825

00:14:59.214 --> 00:15:00.610 and myocardial pump dysfunction.

NOTE Confidence: 0.9727215

00:15:04.240 --> 00:15:06.615 A5 year old girl presents with

NOTE Confidence: 0.9727215

00:15:06.615 --> 00:15:08.600 weight loss, cough and difficulty

NOTE Confidence: 0.9727215

00:15:08.600 --> 00:15:09.968 sleeping for several days

NOTE Confidence: 0.9727215

00:15:09.968 --> 00:15:12.020 on physical exam there is an

NOTE Confidence: 0.9727215

00:15:12.090 --> 00:15:13.740 elevated respiratory rate,

NOTE Confidence: 0.9727215

00:15:13.740 --> 00:15:15.720 hepatomegaly, and a loud murmur.

NOTE Confidence: 0.9727215

00:15:15.720 --> 00:15:16.520 Electrocardiogram reveals

NOTE Confidence: 0.97650515

00:15:16.520 --> 00:15:18.191 left Axis deviation.

NOTE Confidence: 0.97650515

00:15:18.191 --> 00:15:20.890 Vital signs are as shown, how

NOTE Confidence: 0.9878561

00:15:20.890 --> 00:15:22.602 would you interpret the

NOTE Confidence: 0.9878561

00:15:22.602 --> 00:15:23.880 following focus images?

NOTE Confidence: 0.96855915

00:16:02.850 --> 00:16:04.242 boy presents with intermittent

NOTE Confidence: 0.96855915

00:16:04.242 --> 00:16:06.340 vomiting and cough for several weeks.

NOTE Confidence: 0.96855915

00:16:06.340 --> 00:16:08.078 He is afebrile, but the

NOTE Confidence: 0.96855915

00:16:08.080 --> 00:16:09.709 pediatrician suspects dehydration.

NOTE Confidence: 0.96855915

00:16:09.710 --> 00:16:11.270 On physical exam, he appears

NOTE Confidence: 0.96855915

00:16:11.270 --> 00:16:13.452 agitated and is unable to lay flat.

NOTE Confidence: 0.96855915

00:16:13.452 --> 00:16:15.326 You not hear a murmur or

NOTE Confidence: 0.96855915

00:16:15.326 --> 00:16:16.576 any abnormal lung sounds.

NOTE Confidence: 0.96855915

00:16:16.576 --> 00:16:18.130 Vital signs are as shown.

NOTE Confidence: 0.9905422

00:16:18.780 --> 00:16:21.216 How would you interpret the following focus