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Time needed to complete: 1h 55m

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What Do the Echocardiography Technicians Need To Be Sure To Focus on for a PH Diagnosis?

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Dr. McLaughlin:
Hello, and thank you for joining our series on echocardiography. I'm really excited about this roundtable today, which we're going to focus on tools for the technician. I'm Val McLaughlin from the University of Michigan. And I am so thrilled today to be joined by Bettia Celestin from Stanford and Ahmed Sadek from Temple. Bettia, Ahmed, thank you for joining me.

Dr. Sadek:
Thank you.

Dr. Celestin:
Thank you.

Dr. McLaughlin:
So, you know, we're all cardiologists, and you know, let's admit it, probably 95% of our training spends time on the left side of the heart, there's actually very little focus on the right ventricle. But this is so important on echo in the assessment of pulmonary hypertension. Bettia, tell me a little bit about what you think technicians really need to pay attention to, to get good information about the right heart and pulmonary vasculature as they acquire images.

Dr. Celestin:
Yeah, thank you. As one of the techniques as to across these features, you have the feature for pulmonary hypertension, they have to focus really on the right heart anatomy, but all the features that we already present, it's all about RVSP or how to acquire good signal, how to have good quality of the signal. And also feature about RV function, about the right heart atrial area, and all these features in the right heart function.

So the quality is really important for the technician. So have to train to have good quality. And we can have like some help to try to have an assessment of this quality and help them in the reporting, for example, and to have like some report assessment of the quality, for example.

Dr. McLaughlin:
Yeah, QC and continuous education is really important.

Ahmed, when you look at echos or echo reports from, you know, perhaps centers that don't focus as much on pulmonary hypertension as yours does, which important measurements are most often missing from echo reports?

Dr. Sadek:
Right. I think the short-axis interventricular septal flattening is almost always there because it's part of any routine echo. But I think the

thing that gets missed out a lot when I'm looking at echos from outside institutions is actually that pulse wave Doppler of the RVOT, very frequently is not there. And it's kind of a missed opportunity to look at that notching and look for signs of kind of that are more specific for pulmonary vascular resistance. I think that's one of the big ones.

And most of the echos are done kind of with some more LV focus. And so the RV is a lot of times, it's never fully in view. And so you never see kind of the free wall. And so you don't actually get a nice kind of visual assessment of the function and, or in other situations, you never get a full four-chamber view, either the left ventricle is out of the view, or the RV is out of the view. And key to my assessment of RV size is comparing it to the left ventricle. So having them both well in view is something that frequently is left out.

Dr. McLaughlin:
What about objective assessments of RV function, Ahmed? We can do that now. Do you often find those missing from echo reports?

Dr. Sadek:
Sometimes the TAPSE I see pretty good - pretty well. And that comes up pretty frequently. I never really see the tissue Doppler. And something like longitudinal strain, I think is something that's really not done very frequently at all. But I think that requires more specialized but even the tissue Doppler as a complementary to the TAPSE, I think is especially helpful.

Dr. McLaughlin:
Yeah, or a fractional area change.

You know, Bettia, this is technically challenging. And if you don't do it all the time, you know, maybe there are some opportunities to help technicians learn about some of these views and some of these tools. Are you aware of anything that might be a good resource for them?

Dr. Celestin:
Yes, of course. We already talked about the datasets that we can have in the echo lab, for example, but if you want to train like after, like in your break time and we have like some good tools like the right the echo right heart, for example, and you can train as some cases of pulmonary hypertension or other cases like you have some difficulties for some assessment and you can train to answer of some cases and to try to have good knowledge of how to do the diagnosis of pulmonary hypertension. So you can use this tool like the echo right to have tools to train and to try to improve your knowledge in pulmonary hypertension images.

Dr. McLaughlin:
Yeah, that's great. That's a wonderful tool to practice on. And of course, one of my favorite images from the most recent ERS/ESC guidelines, is that figure that has all of the complimentary echo data, not just the RVSP, but all the other measurements that help you assess the right ventricle and the pulmonary vasculature.

Well, Bettia, Ahmed, thank you so much for joining me today. This is a really important topic because without good images, we don't really get good information. So thank you so much.

Dr. Sadek:
Thank you very much.

Dr. Celestin:
Thank you. Thank you.

Announcer:
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