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Seeking Out Symptoms of Broken Heart Syndrome

Dr. Lisk:

You're listening to *NeuroFrontiers* on ReachMD. I'm Dr. Jerome Lisk, and I recently had a chance to catch up with Dr. Ilan Wittstein, who's the Director of the Advanced Heart Failure Fellowship at Johns Hopkins School of Medicine. Here's Dr. Wittstein now talking about the diagnostic criteria for stress cardiomyopathy.

Dr. Wittstein:

So there are actually no universally agreed upon diagnostic criteria, which is interesting. After twenty years now, you will not find two centers that completely agree. But I think most of us agree on the fundamental characteristics that can help you identify this syndrome. And there are really, in my mind, six things that you look for. Now, I just want to make sure it's clear that there is no single diagnostic feature that makes you say, "We have diagnosed this condition." This is a syndrome so it's going to be a constellation of symptoms and findings and diagnostic tests.

But in my mind, the way I think about it, and I think most people who study the patients in this field would agree with most of these, that there were six major things that I look for that can help make the diagnosis. Number one, did the patient come in after experiencing some kind of stressful event, and again that stressful event doesn't have to be emotional stress, that can be some type of physical stressor such as a stroke or a pneumonia, or any type of physical illness, like a fever or low blood sugar, etc. So, was there something fairly acute that precipitated the syndrome? And you're going to find that in about 70 to 80% of patients who have stress cardiomyopathy.

The second criteria that I look for are characteristic EKG findings. Patients with stressed cardiomyopathy, about half of them will have ST elevation on their EKG which can actually look very much like a heart attack, but they will frequently not have ST depression, which is something you often see with a heart attack. So that can differentiate the two conditions. The other characteristic finding on the EKG are diffuse T-wave inversions across the EKG. Many patients will have that, and they will almost all have a prolongation of their QT interval. So if you see those things it adds to your level of suspicion for making this diagnosis.

The third thing is an elevated troponin. What's interesting though is that unlike a heart attack where the more heart muscle that's damaged, the higher the troponin comes back. In stress cardiomyopathy, even though there's often a large amount of heart muscle that doesn't seem to be working very well, the troponin elevation is usually mild. So when you see a low troponin that's sort of disproportionate to the amount of heart muscle injury, that should raise suspicion as well.

The fourth criteria is the absence of obstructive and thrombotic coronary disease. What do I mean by that? Well a heart attack typically occurs when there is plaque rupture and clot forms in the blood vessel in the coronary artery. In people with stress cardiomyopathy, they often have no coronary artery disease at all. So the vast majority of them actually have no coronary disease. Now even those that do have some coronary disease, you're not going to see plaque rupture and clot formation. In fact, if we see clot formation in the artery it actually excludes the diagnosis of stress cardiomyopathy.

The fifth criteria, and perhaps the one that sort of really raises the highest suspicion is that you'll get this very unusual shape to the left ventricle. And what's different than a heart attack is that the wall motion abnormalities that you see with stress cardiomyopathy tend to extend beyond a single coronary territory. With the normal heart attack, it usually involves a single artery; that's the territory where you see the injury. In stress cardiomyopathy you could have areas that look injured in multiple locations of the ventricle and it can give this kind of ballooning appearance that looks very unique for this syndrome. So that is something that should always get your attention when you see that type of abnormality on an echocardiogram or on a ventriculogram.

And then finally, the thing that I think is not emphasized enough but really is essential in making this diagnosis is that ultimately there has to be recovery of the heart muscle abnormality. This is perhaps one of the major differences between a heart attack and stress cardiomyopathy. When you have a heart attack, this portion of the heart muscle that's injured is permanently injured; that heart muscle is killed by the heart attack. With stress cardiomyopathy, we like to say that the heart muscle is stunned. So acutely it's not contracting normally; when you look at it on day one or day two, it looks like the heart's not squeezing, but ultimately that tissue is not dead and if given enough time, that heart muscles makes a full recovery. And how much time does it take? Sometimes it can take a day or two, but I would say, on average, it takes about three or four weeks for the heart muscle to fully recover. And if the heart muscle doesn't recover, we really have to question the diagnosis of stress cardiomyopathy.

So those six criteria, in my mind, no single one of those will make the diagnosis, but looking for all six of those can really help make or solidify the diagnosis of stress cardiomyopathy.

Dr. Lisk:

That was Dr. Ilan Wittstein walking us through the diagnostic criteria for stress cardiomyopathy. For ReachMD, I'm Dr. Jerome Lisk, and to hear my full conversation with Dr. Wittstein and to find other programs in our series, visit ReachMD.com/NeuroFrontiers, where you can Be Part of the Knowledge and thanks for listening!