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Key Words: mitral valve regurgitation, mitral valve repair, left atrial volume index

Discussion

Dr Tomasz A. Timek *(Grand Rapids, Mich)*. These are important and timely data, as we have already discussed today. I have 3 questions for you. You have shown that the rate of perioperative AF is related to atrial size preoperatively. Now, this is perioperative. Did you look at 1-month and 1-year rates of AF? Is there any continued morbidity from AF related to size?

Dr Parvathi Balachandran *(Rochester, Minn)*. In this study we examined only early postoperative AF.

Dr Timek. In terms of imaging, cardiac magnetic resonance imaging is now widely available almost in every hospital. The advantage of cardiac magnetic resonance imaging is that we can simultaneously and reliably look at LA size, function, and fibrosis and therefore potentially look at structural, functional, and maybe even electrical remodeling.

Should we be doing magnetic resonance imaging on all these patients? Have you done this on any of these patients at Mayo?

Dr Balachandran. In clinical practice, we do not follow patients with MR with cardiac magnetic resonance imaging.

Dr Timek. And last, this is for our medical colleagues, there have been some data both in humans and in animals that treatment with angiotensin-converting enzymes and angiotensin receptor blockers can affect remodeling of the atrium. What was the medical therapy for these patients postoperatively?

Dr Balachandran. This is an interesting point that should be studied prospectively. There was no protocol for medical treatment postoperatively in our study patients, and few received afterload reducing drugs after valve repair. So the changes that we have seen are not due to the effects of medications.

Dr David H. Adams *(New York, NY).* This is a really important topic. Now, the first thing I want to ask you about is LAVI versus LA dimension. I know that Maurice has published before and taught us to pay attention to LA dimension over 55 as a real marker for mortality in terms of patients. Since then, we have paid a lot of attention to the number 5 in terms of dimension. So tell me a bit about LAVI versus LA dimension. Which one should we be hanging our head on now?

Dr Balachandran. The reason why we decided to go with LAVI is because it was generalizable for age and gender. We looked into LA size, diameter, and other dimensions, but LAVI is the most generalizable and reliable.

Dr Adams. My next question is about high LAVI. Going forward now, what would we take home to take better care of patients? For instance, if they have a high LAVI, should we be thinking about prophylaxis for AF? Are there other things that we might want to consider in that population postoperatively?

Dr Balachandran. This is one takeaway from the study. The finding of increased risk of AF in patients with increased LAVI should trigger concern for AF.

Dr Adams. Because tying the presentations together, one thing I am taking home from this session is if you have a high LAVI and a higher risk of AF, this may certainly be one group of patients you want to anticoagulate, because their risk of AF and other complications may be higher.

Dr Steven F. Bolling *(Ann Arbor, Mich).* I have a question along the theme that David had. These patients with high LAVI or LA size probably have a higher fibrotic index, and the question was brought up about magnetic resonance imaging. In the postoperative period, do you consider using some type of antifibrotic agent such as low-dose spironolactone or eplerenone in this group of patients? Do you think that's indicated in them?

Dr Balachandran. The reverse remodeling that's occurring at a structural level can be attributed to both physical and physiologic effects. The physical effect is volume reduction, whereas the physiologic effect relates to tissue characteristics such as fibrosis and scarring. Your suggestion regarding antifibrotic therapy is a good one and something that might be studied prospectively.

Dr Bolling. I agree. Much of the reverse remodeling you saw is probably just mathematical because the LA is actually physically holding less volume. In your time course, much of the volume dropped within the first week or so. Of course that is not an antifibrotic or even change in the atrial myocytes, but over time you got lesser volume. Did you put those patients on any antifibrotic agents such as spironolactone or eplerenone? We do in our practice for larger LAs, but we really don't know if it works or not.

Dr Balachandran. Again, your suggestion regarding antifibrotic therapy is a good one and something that might be studied prospectively.

Dr Hartzell V. Schaff *(Rochester, Minn).* The short answer, Steve, is no, we haven't. I just wanted to add, though, a point to David's question, and that has to do with how does this impact surgical practice. We believe the most important point has less to do with how you treat the patient after the operation and much to do with decision-making in patients with MR. The European guidelines include LA size as a potential trigger for operation. Their LA size threshold, as I understand it, is 60. Is that right, Parvathi?

Dr Balachandran. Yes, it is 60 in asymptomatic patients with preserved ejection fraction.

Dr Schaff. In our study we could start seeing a difference in late mortality with a LAVI of 50. So it might be that that the guideline cut point needs to be modified, and for sure, LAVI should be considered in the US guidelines.