Discussion to: The Concept of Cone Creation to Treat Isolated Tricuspid Valve Dysplasia and the Case of a Double Orifice Tricuspid Valve

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Disclosures: None

Dr. Luciana Da Fonseca Da Silva (Pittsburgh, PA):

Thank you, the association for the privilege to comment on your video. And thank you, Dr. Quarti, for showing me the video in advance. Tricuspid Valve Dysplasia is a rare disease, and surgical treatment can be challenging. The two narrow leaflets with scarcely tissue for the valve repair. This video has demonstrated the case with double artifice and tricuspid dysplasia being repaired with the principles of the croissant technique. The application of the croissant principles undoubtedly can be helpful, especially when the mechanism of regurgitation is leaflet movement restriction. The authors have reported three cases in the paper. Could you please describe the anatomical finds and the details of the technique applied in the other two cases? The creation of a competent valve with native valve tissue, cooptation against Baba tissue is the main principle of the [croissant?] technique. In tricuspid valve dysplasia since you do not have the downward displacement, you have the benefit of finding valvular all around the tricuspid in this level. After releasing the tethering, reducing the tricuspid annulus, you can work with this tissue rotating plicating and suturing in many different ways. The use of a patch and a large extension of the annulus is not worrisome in adults.

However, in children, since the patch will not grow, you can cause restriction and stenosis in the follow-up. I understand that it was done in adult patients, but I would like your comments to see what you would do if the patient was a child. When using the [croissant?] technique in [inaudible] or tricuspid dysplasia, in a specific case, we use redundant autologous [inaudible], but only in the septal area, working the native leaflet tissue in the other areas. Releasing the papilla muscle deeply in the RV apex is another way to create more length in the leaflets. I notice in your video that some of the muscles could release a little bit
longer deep in the anterior leaflet, improving the same coaptation, avoiding patch use. Finally, have you considered using other types of patches like bioengineered materials? Congratulations on your wonderful video and the excellent surgical results.

Dr. Andrea Guilio Quarti (Bologna, Italy):

Oh, thank you very much. So, yes, we described three patients, and the other two patients were young men - at least 1973, because I was born in 1973. So, they were between 20 and 30. And one patient had an absent septal leaflet. So, it was very easy to use the cone. I mean, the septal leaflet was attached to the septum and consisted of different patches of tissue attached to the septum. So, in that case, I applied-- I mean a real cone. So, I rotated the inferior leaflet to cover the septum. And then we did an application of the annulus, and the coaptation was absolutely good. The other patient had an anterior leaflet which was very short. And we closed the commissure. I detached all the leaflets. We closed the commissure. I enlarged the anterior leaflet with autologous pericardium with an elliptic shape in that case. And I reduced a BD annulus and I reinserted the cone on the annulus. Second question, yes, in case the patient is a kid, of course, it is very important to avoid foreign tissue because it's going to shrink, it's going to calcify and probably it reduced the durability of the repair.

I only keep in mind to avoid foreign tissue for every type of valve repair, also for aortic valve repair in kids. If the kid has an Ebstein, usually the anterior leaflet is so long that it doesn't need to be elongated. So, it happens to use foreign material to create a new septal leaflet or to elongate the short septal leaflet. But it never happened to me to use a patch to increase the anterior portion of an Ebstein valve. And of course, to answer your last question, the more you dissect the survival apparatus, the more the survivor apparatus goes through the apex of the valve. And in that case, the movement of the leaflets does not depend on the movement of the right ventricular wall. So, you are going to reduce the risk of tethering after the repair. Maybe you mean that. I mean, if you dissect this valvular apparatus, the movement of the leaflets is not going to depend upon the movement of the right ventricular wall. I totally agree with you. So probably I could also dissect more and more the papillary muscle in order to free the leaflets from the huge right ventricle also in the adult case.

Dr. Da Fonseca Da Silva:

Okay. Thank you.

Dr. Quarti:

Thank you.
Dr. Da Fonseca Da Silva:

And the regarding the material—

Dr. Quarti:

Oh, sorry. Well, I try never to use on the right side, heterologous pericardium. And in regard to bioengineered material, I had a bad experience with the core matrix. I'm not going to use it. I mean, I'm going to use autologous pericardium unless we will find some good material with the long-term durability.

Dr. Quarti:

Thank you.