Letters to the Editor

Carpentier-Edwards Perimount valve and intraoperative structural failure

To the Editor:

We read with great interest the article by Saunders and associates.1 The authors described a post–cardiopulmonary bypass (post-CPB) structural valve failure, leading to an intraoperative replacement of 4 Carpentier-Edwards Perimount valves. The negative experience has been lived in 2 different institutions. Two Perimount valves were replaced because of a severe central insufficiency at the weaning-off phase from CPB, another valve was replaced soon after its insertion because of being judged not continent as a result of incompetence at hydraulic testing. The pericardial tissue valves were replaced with either a new Carpentier-Edwards porcine valve or a Medtronic Mosaic porcine valve. The authors speculated that the Perimount valves were distorted by the mitral valve annulus, leading to an unacceptable incompetence, and that the tolerance to this mechanical distortion is lower for pericardial tissue valves when compared with porcine valves.

The first valve has been replaced before left atrial closure. Therefore its performance was not physiologically tested. The second Carpentier-Edwards Perimount valve has been replaced after a long period of CPB. In the second patient the Perimount valve showed incompetence after hydraulic testing, and therefore it has been removed. The last patient experienced massive native mitral and tricuspid valve incompetence, and he was referred with a normal left ventricular ejection fraction. Immediately after weaning from CPB, the valve showed severe central incompetence at transesophageal echocardiography, and this valve was replaced.

Our hypothesis is that in all these cases the tissue valves were not exposed to enough physiologic pressure to allow normal leaflet coaptation, provoking a misleading incompetence that convinced the surgeons to replace the valves and to retain the cause of failure related to a structural failure. The early primary structural failure of a tissue valve is a well-defined entity, and it is believed to occur when part of the elements of a prosthesis are not well functioning because of wear and tear. We think that if these replaced prostheses were tested at physiologic pressure in vitro or in vivo, they would show a normal function.

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References


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- Type with double-spacing
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