The initial Regent valve implanted in these 3 cases was likely oversized and the pivot guard not seated properly. In each case, the Regent valve was replaced with a valve of a smaller effective tissue annulus diameter (ETAD) compared with the St Jude Medical standard model and a smaller effective orifice area (EOA) determined from industry-provided data.^{4,5} In case 1, a 25-mm tissue annulus diameter (TAD) St Jude Medical Regent valve (TAD 25 mm, ETAD 28 mm, EOA 2.6 cm²) was replaced with a 23 mm Regent valve (TAD 23 mm, ETAD 26 mm, EOA 2.5 cm²). In case 2, a 27-mm Regent valve (TAD 27 mm, ETAD 30 mm, EOA 3.5 cm²) was replaced with a 27-mm CarboMedics standard valve (Sulzer Carbomedics, Inc, Austin, Tex) (TAD 27 mm, ETAD 27 mm, EOA 2.2 cm²). In the third case, a 25-mm Regent valve was replaced with a 25-mm CarboMedics standard valve (TAD 25 mm, ETAD 25 mm, EOA 1.5 cm²); again a smaller valve by ETAD with a markedly smaller EOA. Suture technique may have compounded the oversizing. The high EOA in all Regent valves makes oversizing unnecessary.⁶ The calculations of Pibarot and associates⁷ for patient-prosthesis mismatch indicate only 1 patient (case 3), after a 25-mm CarboMedics valve implant was at risk for mismatch (EOA 1.5 cm², EOAI 0.6 cm²/mm²).

In summary, the problems Øvrurum and Tangen encountered can be explained by implantation techniques, depth of sutures, and oversizing of the Regent valve rather than by the valve itself.

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Reply to the Editor:

We appreciate the interest in our brief report¹ regarding acute leaflet arrest in the St Jude Medical (SJM) Regent aortic valve (St Jude Medical, Inc, St Paul, Minn). The remarks forwarded by Dr Emery clearly indicate that specific precautions must be taken regarding the technique of implantation. His figure 1 demonstrates the shorter distance from the subvalvular tissue to the hinges. He proposes everting mattress sutures for inserting all the types of SJM valves, and this is certainly a safe technique. However, we are not convinced that this is the most common procedure for implantation of supra-annular prostheses. To our knowledge, the most preferred technique is ventricular-to-aortic sutures for supra-annular valves, to optimize the orifice area.

These circumstances were the main reason for our publication. We used standard and widely recognized suture techniques for aortic valve replacement, and severe technical problems occurred with the SJM Regent valve. The reported cases were routine operations without any particular difficulties from the patient's side. After the valve was tied down, the leaflets were unmovable and rotation was impossible, due to entrapment of the subvalvular tissue into the hinges. The operations were performed by senior cardiac surgeons, having implanted a large number of several types of aortic valve prostheses during more than 25 years. The situation was most unpleasant, particularly considering the potential risk of pledget escape when cutting the sutures for removal of the valve. All patients had an uneventful recovery after a prolonged operation for rereplacement. However, similar negative experience has not been published with other valves, and therefore we wanted to share our experience with other surgeon colleagues.

We do not believe that oversizing was the case in any of the patients. They were

all adult male patients with normal size of the aortic ostia and candidates for 25-mm to 27-mm valves. If the SJM Regent valve has to be downsized on routine basis, the hemodynamic advantages must, at least partly, be abolished.¹

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Mechanical aortic valve malfunction: An intraoperative BioGlue complication

To the Editor:

I read "Mechanical Aortic Valve Malfunction: An Intraoperative BioGlue Complication" by Karimi and associates. The communication reports that BioGlue (Cryolife Inc, Kennesaw, Ga) can migrate through the aortotomy suture line. It was interesting that there was an interval after the glue was applied to the suture line but before it migrated through to cause the mechanical valve incompetence (demonstrated by the altered function of the prosthetic valve on transesophageal echocardiography). Also of concern was the fact that the BioGlue migrated through 4-0 suture holes rather than a defect in the aortotomy closure.

I recently performed repair of a type I aortic dissection with ascending aorta and hemic-arch replacement and with resuspension of the aortic valve. The patient had been treated with heparin, clopidogrel, and aspirin after admission because of an assumed diagnosis of myocardial infarction. After the patient was separated from cardiopulmonary bypass, with protamine, fresh-frozen plasma, and platelets having been administered, there was still oozing from the suture line. A thin layer of BioGlue was applied, with cessation of the bleeding. The patient had a cardiac output of 7 L and excellent intraoperative myocardial function.

Forty-five minutes after return to the intensive care unit, the patient became hypotensive, with a 1-mm increase of the