4. Discussion

There has been some controversy surrounding patients with combined aortic and mitral valve disease. The durability and outcome of combined aortic valve replacement and mitral valve repair vs. double valve replacement remain to be determined. However, recent reports described the superiority of mitral valve repair especially in cases with degenerative aortic and mitral valve disease [1].

When attempting mitral valve repair, intraoperative assessment of the competency of the mitral valve before closure of the atrium is important. Saline injection pressurization of the left ventricle and infusion of cardioplegic solution within the aortic root (the latter in the presence of at least mild aortic regurgitation and in the absence of an aortotomy) are considered to be the most common and reliable techniques used to inspect the repaired valve [2, 3]. However, this becomes very difficult in cases requiring simultaneous repair of an aortic valve, since the aorta is opened. To our knowledge, no reliable alternative has been previously described.

Occlusion of the ascending aorta below the incision line by simple clamp is considered to be difficult and hazardous, and potentially injures the surrounding tissues. Repairing the mitral valve after completion of the aortic valve procedure and closure of the aortotomy is rather difficult due to poor visibility and limitation of the working space, especially around the antero-lateral commissure when the aortic prosthesis has already been seated. The additional retraction can also potentially damage the aorta just around the site where the prosthesis is inserted. The saline injection leak test described here is a simple, safe and reliable method for accomplishing and testing the efficacy of mitral valve repair when, by necessity, the aortic root is open.

References


ICVTS on-line discussion A

Title: Great Idea
Authors: Mohamed Fahmy Ibrahim, PSHC, King Fahd Medical City, Riyadh 11525, Saudi Arabia; Amal A. Refaat
doi:10.1510/icvts.2007.158808A

I also believe that a saline injection leak test also helps in de-airing the left ventricle after the repair and just before closing the aortotomy.

Reference


ICVTS on-line discussion B

Title: LV injection testing for MV repair in simultaneous aortotomy setting
Author: Nasser F. Abu’Seada, University of Ain-Shams, Faculty of Medicine, 6-Geem-MGWRA 8, May 15 City, Cairo 11426, Egypt
doi:10.1510/icvts.2007.158808B

I’ve read with much interest the article by Nakajima et al. about an intraoperative saline injection leak test [1]. The extent and the nature of the aortotomy incision were not exactly delineated or defined in the series of patients presented. Was the aortotomy incision carried down deep into the non-coronary sinus as it is the case of aortic valve procedures? In such a case, the aorta would not be able to hold the Foley’s catheter balloon in place, especially during pressurization of the LV with saline injection.

Also, was the Foley’s balloon inserted into the LVOT beneath the aortic ‘annulus’? Pressurizing the LV in such a case would necessarily push the balloon against the continuation of the aortic curtain into the AML, in fact pushing the AML towards the central mitral valve orifice, some sort of a passive posterior advancement of the AML.
I query what would such effects of altering the aortic ‘annulus’ configuration – during testing – pushing the AML laterally, and producing ‘con‐founded’ results of test competency, thus greatly undermining its validity. Especially in cases where such a configuration of the aortic root is not likely to be maintained during subsequent aortic valve procedures – aortic valve repair for example.

Reference