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NATIVE AORTIC VALVE CUSP FOR CLOSURE OF VSD WITH AORTIC VALVE REPLACEMENT IN CASES OF SEVERE AORTIC REGURGITATION AND VENTRICULAR SEPTAL DEFECT.

Surgery

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ABSTRACT

Aortic Regurgitation associated with 5-10% of Ventricular septal defects.Repair of the aortic valve is always the first choice in such cases.However sometimes aotic valve replacement becomes mandatory due to size and quality of cusps.Usually pericardial patch autologous or bovine,dacron or PTFE patches are used for closure of Ventricular septal defects in such cases.Here we describe a technique of using the autologous native aortic valve itself to close the ventricular septal defect.The advantages of the technique is patients own tissue is being used,no other chamber need to be opened and both procedure can be done satisfactorily through the same incision.

KEYWORDS

Ventricular septal defect. Aortic regurgitation. Aortic valve repair, Autologous tissue

Technique:

After standard sternotomy and establishment of CPB,Aototomy is done and cardioplegia is given.After cardioplegia aortic valve is inspected for feasibility of repair.If it is not repairable second important issue is to inspect the VSD and see if it can be closed comfortably and accurately through aortotomy.At this junction the right coronary cusp is examined to see if the quality of the cusp is good enough for VSD Closure (Fig 1).Once these three conditions are satisfied the aortic cusp is trimmed to suit the margin of the VSD.Closure is begun from one end of the VSD with a 5 "0" prolene continuous suture and completed by reaching the other end(Fig 2). Then valve sutures are inserted as per once routine and valve is implanted in the standard fashion. Aortotomy is closed and patient weaned off CPB after rewarming.

Comment:

This procedure is recommended only when aortic valve repair is not possible,VSD can be closed comfortably from the aortotomy and the quality of right coronary aortic cusp is good.The inspiration for this technique is from the articles which described native heart tissues like posterior mitral leaflet,right atrial wall to close various septal defects.Autologous pericardium is good and widely used but suffers from some disavantages like tissue shrinkage, excessive stretching, may become fibrotic and retracted, exhibiting progressive thinning and dilatation and aneurysm. Utilization of native cusp of Aortic Valve gives benefits of autologous tissue like ready availability, good handling characteristics, being sterile, nonporisty, lack of bleeding through needle holes, resistant to infection and viability with potential ability to grow, lack of immunogenicity. Repairing VSD and Aortic Valve with replacement through single aortotomy incision benefits by obviates the need for opening other chambers of heart and lesser CPB time.

"Compliance with Ethical Standards"

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Ethical approval: This article does not contain any studies with animals performed by any of the authors.

Informed consent: Informed consent was obtained from all individual participants included in the study.

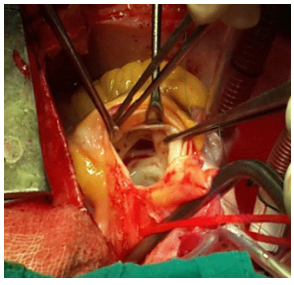


Figure 1

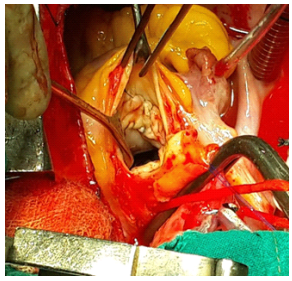
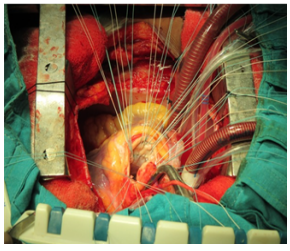


Figure 2



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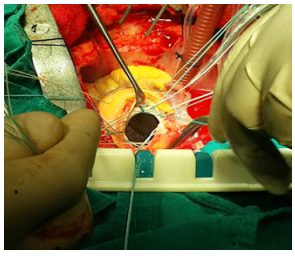

Figure 2

Fig 1: Aortotomy: showing Ventricular septal defect and aortic cusp.

Fig 2: VSD closed with right coronary cusp

Fig 3: Valve situres taken through annulus and the aortic cusp.

Fig 4: Valve prosthesis seated

REFERENCES :

1. Posterior mitral leaflet patch for atrial septal defect closure: Alok Kumar Sharma, Pramod Kumar Sharma, Amit Jain, Smita Sharma, Arkalgud Sampath Kumar. Indian J Thorac CardiovascSurg :(2012) 28(3):205–206 4
2. Gupta A, Talwar S, Airan B. Eustachian valve as a cardiovascular patch. Heart Lung Circ: 2009; 18:358–9. 6
3. 3. Autologous Right Atrial Wall Patch for Closure of Atrial Septal Defects Sachin Talwar et al Ann ThoracSurg 2007; 84:913– 6
4. Experience with autologous pericardial patch closure of ventricular septal defect Vincent OkwulehieetalInd J Thorac Cardiovasc Surg, 2006; 22: 212-214 10
5. 5. Us MH, Sungun M, Sanioglu S, Pocan S, Cebeci BS, Ogus T, et al. A 11 retrospective comparison of bovine pericardium and polytetrafluoroethylene patch for closure of ventricular septal defects. J Int Med Res. 2004; 32: 218–21