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ACQUIRED VENTRICULOATRIAL DEFECT AFTER BIOPROSTHETIC AORTIC VALVE REPLACEMENT

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INTRODUCTION

Ventriculo-Atrial or Gerbode defects[1] first described in 1958 are quite rare to find. They are generally described under two headings.[2]

Type-1 Gerbode defect is an acquired defect through the Ventriculo-atrial membranous septum, resulting in a direct left ventricle to right atrium shunt.

Type-2 Gerbode defect is an indirect congenital defect; there are two defects present, a ventricle septum defect and a defect in the tricuspid septal leaflet, thus creating an indirect left to right shunt.

Acquired cases are reported in the literature have been due to endocarditis, trauma, myocardial infarct and post-cardiac surgery complications.[3]

CASE REPORT

70 year old female was diagnosed as a case of degenerative severe calcific aortic stenosis, mild aortic regurgitation, moderate pulmonary arterial hypertension and normal Left ventricular systolic function. She underwent Aortic valve replacement using 19 mm Perimount MAGNA AV Bioprosthesis in June 2016. Postoperative period was uneventful.

In September 2016 on routine follow up visit in Sir Gangaram Hospital physical examination revealed presence of pansystolic murmur near right sternal border. Thus 2 D Echocardiography was performed which revealed an unusual finding of Left ventricle to Right atrium shunt (figure 1). Pressure gradient across this shunt was high (118 mmHg) (figure 2).

As suggested by others[4] it was decided that this asymptomatic patient with insignificant shunt and normal pulmonary artery pressure to be managed conservatively and should go for Redo surgery if needed, which carries a high mortality.

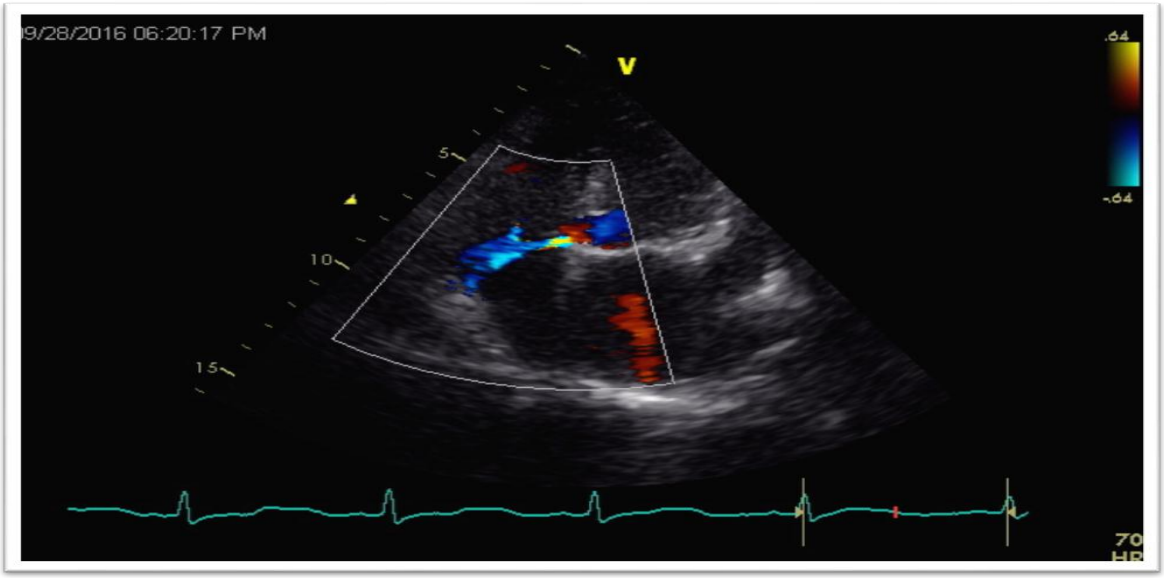

Figure 1: Apical four chamber view showing Left ventricle to Right atrial shunt.

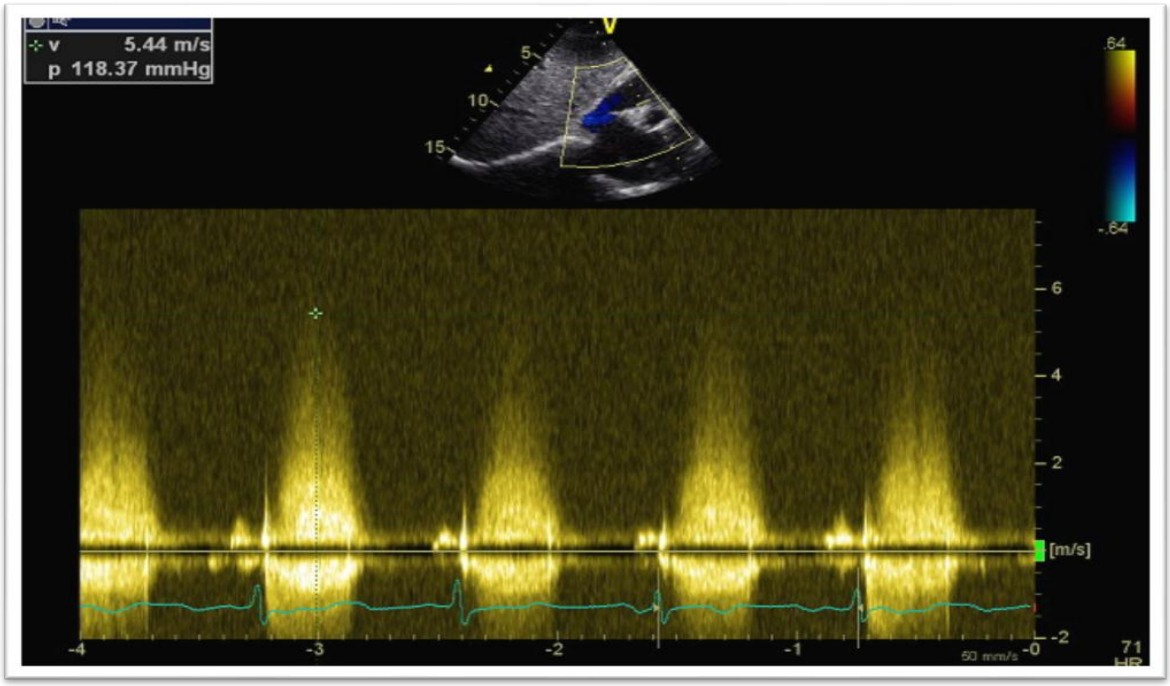

Figure 2: Continuous width Doppler showing pressure gradient across LV-RA defect.

DISCUSSION

Gerbode described such a defect as a congenital atrioventricular shunt originating from the interventricular membranous septum with regurgitation into the right atrium through a defect or cleft in the tricuspid valve leaflet.[1] The Gerbode defect can also be acquired due to causes such as bacterial endocarditis, myocardial infarction, blunt chest trauma or post previous cardiac surgical procedures.[3] These cases are unusual and the purpose of reporting of this case is rarity of this defect.

In a review article by Edvin Prifti et al[4], they found 62 & 25 cases with acquired Gerbode defect with and without previous cardiac surgery Respectively. Twenty six out of sixty two cases underwent surgical closure of the defect and 18 for percutaneous closure. Eleven patients did not undergo any interventional procedure, probably due to small shunt or high operative risk.

The cases were diagnosed by transthoracic and transesophageal echocardiography as also done in our case. One of the hallmarks of Gerbode defect is the high Doppler gradient between the LV and RA on echocardiograms similar to our case.

Treatment of the acquired Gerbode defect depends on symptoms, magnitude of shunt, flow volume, concomitant anatomic abnormalities and co-morbidities. Asymptomatic, chronic, small defects can be managed conservatively.

The acquired LV-RA Shunt is an unusual form of intracardiac shunt. Its incidence has been increasing due to increased recognition by Echocardiography and other imaging modality.

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