

CASE REPORT

Endocarditis secondary to post-acute myocardial infarction ventricular septal defect. A case report

Karen Aguilar-Alapisco¹, Ignacio Salazar-Hernández¹, Karen Ferreyro-Espinosa¹, Karla P. Monterrubio-Angeles¹, Octavio Flores-Calderón¹, Serafín Ramírez-Castañeda¹, Raúl Serrano-Loyola², and Guadalupe M. L. Guerrero-Avenidaño²

¹Department of Cardiothoracic Surgery, ²General Direction. Hospital General de México "Dr. Eduardo Liceaga". México City, MÉXICO..

Ventricular septal defect (VSD) as a mechanical post-infarction complication has an incidence of 0.8-6.2% [1]. The association of post-acute myocardial infarction (AMI) VSD and the development of endocarditis has not been clearly established. We present the case of a 57-year-old male with a history of ischemic heart disease, who presented post-AMI VSD, and subsequent development of endocarditis and severe mitral regurgitation as an added pathology, being an extremely rare case.

Key words: Post-acute myocardial infarction ventricular septal defect; Infective endocarditis; Ischemic heart disease.

La comunicación interventricular como complicación mecánica post infarto tiene una incidencia de 0.8-6.2% [1]. La asociación de CIV post infarto (IAM) y el desarrollo de endocarditis no se encuentra claramente establecido. Se presenta el caso de masculino de 57 años con antecedente de cardiopatía isquémica, que presenta CIV post IAM, y posterior desarrollo de endocarditis y como patología agregada insuficiencia mitral severa, siendo un caso sumamente raro.

Palabras clave: Comunicación ventricular post-infarto agudo del miocardio; Endocarditis infecciosa; Cardiopatía isquémica.

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The most frequent complication after an acute myocardial infarction (AMI) is left ventricular failure in 80% of cases. With the advent of reperfusion therapies, mechanical complications (MC) after AMI have been significantly reduced. However, there is still 15% corresponding to the possible mechanical alterations resulting from it, such as the rupture of the free wall of left ventricle, rupture of papillary muscle and ventricular septal defect having as an individual incidence 0.8-6.2%, >1% and 0.2%, respectively [1]. The coexistence of more than one mechanical complication is extremely rare without evidence reported so far.

Post-infarction MC is usually immediate to AMI but may occur during the first week of the event [1], 3-5 days in the case of interventricular septal perforations [2]. Some or the combination of them directly impacts on the morbidity and mortality of the patient. It is mentioned that the existence of VSD increases perioperative mortality by 31%, while the rupture and / or tear of a papillary muscle implies an increase of 19%, which requires early identification to obtain optimal results [1].

The association of post-AMI VSD and the subsequent development of infective endocarditis (IE) is not clearly established in the literature, hence the particularity and interest of the case to be presented.

Corresponding author: Dra. Karen Aguilar Alapisco.
email: karen15_35@hotmail.com

CLINICAL CASE

A 57-year-old male with a history of chronic cocaine use who suffered a heart attack 15 months ago with a subsequent diagnosis of VSD without prior treatment. He was admitted to our hospital after having fever for 3 months and cough. On physical examination, a murmur was auscultated on the left sternal edge in bar, in addition to a regurgitant systolic murmur in mitral focus. For this reason, blood cultures were performed with a positive result to *Streptococcus mitis*. Transesophageal echocardiogram showed a ventricular septal defect of 11 mm in the basal portion of the septum inferior with akinesia in all its extension secondary to ischemic heart disease (Fig. 1). Severe mitral valve regurgitation and mild tricuspid valve insufficiency due to a pediculated and mobile vegetation of 11 mm by 6 mm on the atrial face of the anterior leaflet, with a defect of 5.7mm was also reported. In addition, the patient underwent catheterization in which proximal lesion was found to the left anterior descending so it was scheduled for surgical resolution by mitral valve replacement, closure of ventricular septal defect, vegetectomy, anterior leaflet plasty of the tricuspid valve and coronary artery bypass grafting.

The surgical procedure was performed through conventional median sternotomy with bicaval aortic cannulation. It was approached through the right atrium. The following findings were observed: VSD of 2 cm, which was closed with pericardial patch; tricuspid leaflet with posterior leaflet perforation (Fig. 2), approached by bicuspidization plus vegetectomy; the mitral valve

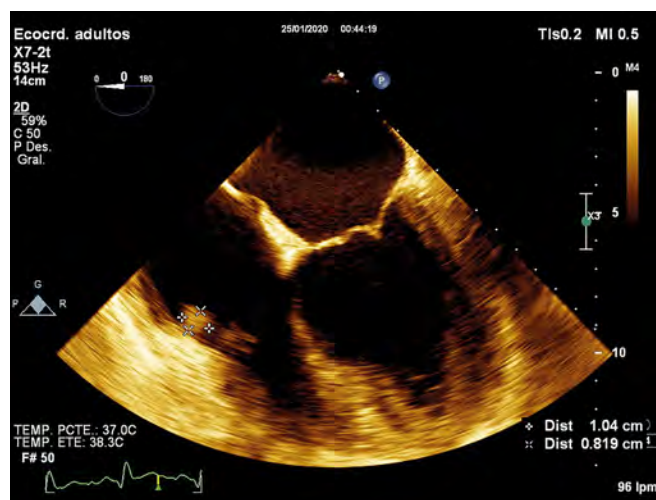


Figure 1. Trans-esophageal echocardiogram shows native valve endocarditis with vegetation in the anterior leaflet of the tricuspid valve of 10 mm by 8 mm with moderate insufficiency.

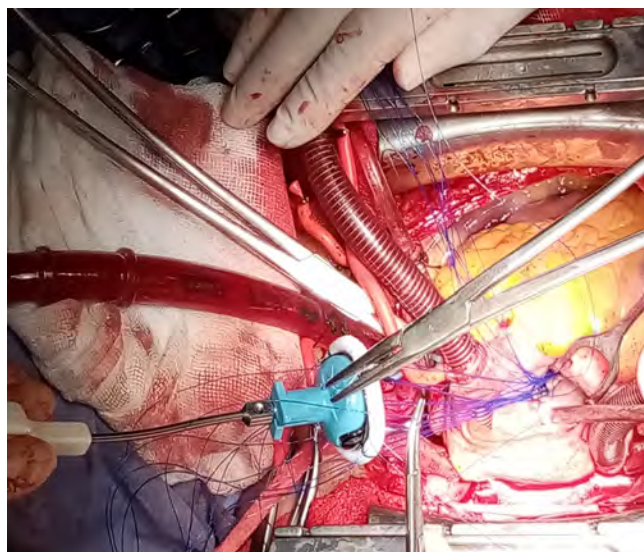


Figure 3. Mitral valve replacement with mechanical prosthesis due to severe regurgitation in a very myxomatous native valve.

presented myxomatous degeneration, and was treated by mitral valve replacement using a 29 mm mechanical prosthesis (Fig. 3). Coronary artery bypass grafting with reverse saphenous vein to LAD was performed (Fig. 4). Cardiopulmonary bypass time and aortic cross-clamping time were 124 min and 106 min, respectively. Patient had a favorable post-surgical evolution and was discharged without complications.

COMMENT

Most post-AMI MC are linked to several risk factors, including female sex, advanced age and systemic hypertension [2], in addition to the delay in medical care, more than 24 hours after the onset of the picture [3].

None of which were found in this patient, so it is a truly unusual case. The incidence of IE in native valve is 2-10 / 10000 year [4], associated with congenital VSD is 0.5% in pediatric population. However, direct relationship between IE and VSD after AMI is not defined. The development of IE, secondary to a ventricular shunt acquired from left to right is extremely rare. However, with the time of evolution of the ventricular septal defect, the risk of complication increases. 80% of cases of IE are caused by gram-positive bacteria, and streptococcus is responsible for 30-40%. Out of them, *Streptococcus viridians* is the most frequently isolated agent, followed by 20% *Streptococcus galloyticus*, and 15% for other types [2].

Surgical indications for native valve IE are well established [4]. In this case herein, since management of severe mitral re-

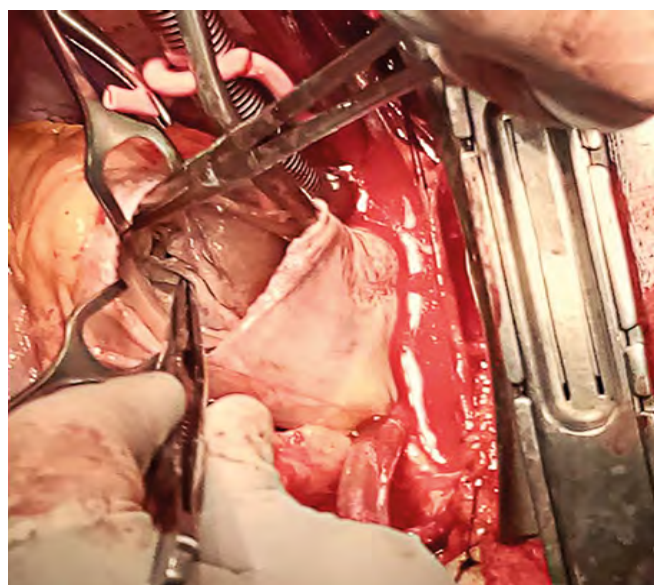


Figure 2. Tricuspid valve with posterior leaflet perforation.

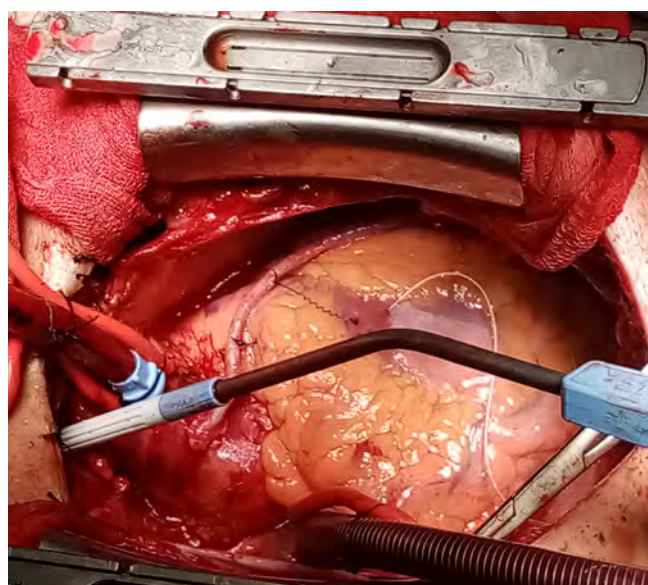


Figure 4. Coronary artery bypass graft with saphenous vein to left anterior descending artery.

gurgitation was necessary, given the degree of hemodynamic repercussion, it was decided to perform resection of vegetation and repair of the anterior leaflet of the tricuspid valve as well as the closure of VSD, mitral valve replacement and coronary artery bypass grafting to LAD.

One of the main advantages of the tricuspid valve repair after active IE is the reduction of the risk of reinfection, as well as alteration of the conduction system after surgical intervention.

Also, potential avoidance of anticoagulant therapy should be considered [5]. Nevertheless, in this our case this criterion was not fulfilled due to mitral valve replacement.

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