

SURGICAL TREATMENT OF POST INFARCTION VENTRICULAR SEPTAL RUPTURE AND LEFT VENTRICULAR ANEURYSM WITHOUT AORTIC CROSS CLAMPING

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REZUMAT

Pacientul V.P., de 62 de ani, a fost internat în spitalul nostru cu diagnosticul de ruptură de sept ventricular și anevrism de ventricul stâng (VS) după un infarct miocardic vechi de trei săptămâni. După investigații preoperatorii (echocardiografie și angiografie coronariană) pacientului i s-a propus intervenția chirurgicală. Datorită disfuncției severe de VS și a imposibilității de a asigura o protecție miocardică adecvată (ocluzie a arterei coronariene stângi anterioare descendente) am decis realizarea intervenției chirurgicale cardiace fără clampaj aortic, cu asistarea circulației extracorporeale. În acest fel s-a realizat închiderea cu succes a rupturii de sept ventricular cu petec de Dacron și sutura liniară a anevrismului de VS.

Considerăm că acest procedeu, chiar dacă este mai dificil din punct de vedere tehnic, poate oferi rezultate foarte bune.

Cuvinte cheie: post-infarct, ruptură de sept ventricular, anevrism de ventricul stâng

ABSTRACT

A 62 years old patient was admitted in our hospital for post infarction ventricular septal rupture and left ventricular aneurysm. He was investigated (by echocardiography and coronary angiography) and proposed for operation. Due to his severe left ventricular dysfunction and the impossibility to assure adequate myocardial protection (occlusion of the left anterior descending coronary artery) we decided to perform the cardiac operation with cardiopulmonary bypass (CPB), but without cross clamping (heart beating technique). The patient underwent successful ventricular septal rupture closure with a patch and linear suture of the ventricular aneurysm. We consider that the beating heart technique is safe and can offer excellent results.

Key Words: Post-infarction, ventricular septal rupture, left ventricular aneurysm

INTRODUCTION

Postinfarction ventricular septal rupture and left ventricular aneurysm are complications of myocardial infarction with an incidence of 1-2% respectively 8-10%.^{1,2}

The association of these two pathologies is rare, especially when the ventricular septal rupture becomes chronic due to a delayed diagnostic, when time allows aneurysm formation.

Surgical treatment is recommended but the impossibility of myocardial revascularization (total occlusion of the coronary vessel involved) and severe left ventricular dysfunction is associated with high mortality.^{3,4}

We present the case of a patient who underwent successful surgical correction of septal ventricular rupture and left ventricular aneurysm using the beating heart technique.^{5,6}

CASE REPORT

A 62 years old male patient was admitted to our hospital with accentuating dyspnea (congestive heart failure NYHA Class III). He has received thrombolytic therapy in a local hospital three weeks ago for acute myocardial infarction.

The patient was obese, dyslipidemic, with a giant post-colecystectomy eventration and had insulin-dependent diabetes.

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The electrocardiogram showed signs of an old anterior infarction.

Direct transthoracic ultrasonography revealed a ventricular septal rupture, located in the middle part of the septum, akinesia of the middle and distal parts of the septum, a left ventricular antero-apical aneurysm and global hypokinesia (the ejection fraction - EF - was 35%).

The coronary angiography showed total occlusion of the left anterior descending artery, with no visualization of the middle and distal part (TIMI 0).

We have decided to perform the operation on the beating heart with cardiopulmonary bypass, but with no aortic cross clamping.

The patient was placed in Trendelenburg position and the heart was kept moderately empty. Two suction lines were placed in the left ventricle and in the ascending aorta.

The ventricular septal rupture was approached through a transaneurysmectomy incision. It was 1.5 cm large, situated in the anterior-middle part of the septum. The ventricular septal rupture was closed using a Dacron patch with 4/0 Prolene running suture. Secondary, we have performed the aneurysm resection and linear repair of the left ventriculotomy with two Teflon strips.^{1,7-9}

There were no cardiac rhythm disorders and the visibility was excellent. De-airing of the heart and control of residual shunt was performed using transesophageal echocardiography (TEE). The perfusion time was 53 minutes.

The patient's recovery was uneventful and he was discharged from the hospital on the 10th postoperative day.

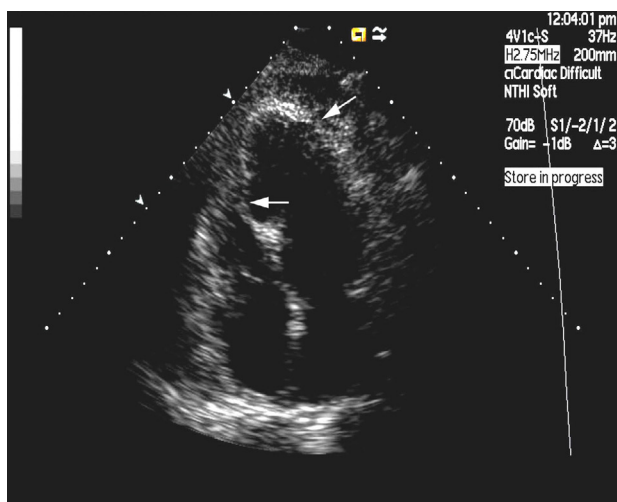


Figure 1. The patch sutured in the middle part of the interventricular septum and linear closure of the aneurysm.

One month later, the transthoracic ecocardiography showed the absence of residual shunt and improved contractility (EF = 45%).

DISCUSSION

Surgery of post myocardial infarction ventricular septal rupture and left ventricular aneurysm in a patient with severe left ventricular dysfunction and total occlusion of LAD coronary artery is technically demanding and raises the problem of myocardial protection.^{5,6,9}

The primary aim of beating heart technique is to avoid ischemic reperfusion in patients with poor ventricular function and little cardiac reserve.

Maintaining the heart beating continuously without the use of aortic clamping, ensures myocardial perfusion through coronary circulation and represents the most adequate technique of myocardial preservation.

The authors which have performed left ventricular aneurismectomy without cross clamping reported an operative mortality around 2%.⁵

In conclusion, we consider that the beating heart technique is safe and, even if is more technically demanding, it can offer excellent results.

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