FALSE ANEURYSM OF LEFT VENTRICLE: SURGICAL EXPERIENCE AT NATIONAL INSTITUTE OF CARDIOVASCULAR DISEASES.

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SUMMARY

A reterospective review of all the patients, who underwent coronary artery bypass grafting or left ventricular aneurysmectomy during last twenty-two years, revealed that, six patients had false aneurysms of left ventricle. This study presents the surgical results of this relatively uncommon entity. Out of the total of six patients, there were two hospital deaths. Rest of the patients were discharged from the hospital in functional class I-II, with minimal medication.

PJCTS 1999;1: 12-13

INTRODUCTION

False aneurysm of left ventricle usually results from myocardial infarction. Left ventricular free wall rupture, which is usually fatal, may develop into a false aneurysm. All such aneurysms may present with left ventricular failure with or without cardiogenic shock, systemic embolism or delayed rupture of aneurysmal sac. For these reasons, surgery should be performed at the earliest.

PATIENTS AND METHODS

A review of all the patients who underwent coronary artery bypass grafting and left ventricular aneurysmectomy, from January 1977 to December 1998, showed that a total of 6 patients had false aneurysms of left ventricle. The hospital record of this small sub group was evaluated. These patients were admitted in the hospital, electively through out-door patients department or as an emergency. After initial management, they underwent echocardiography and coronary angiography. Surgery was performed through median sternotomy. Extracorporeal circulation was achieved by aortobicaval cannulation. The procedure was performed at moderate hypothermia. Cold, antegrade, crystalloid cardioplegia was used for myocardial preservation. Removal of dense pericardial adhesions was followed by resection of aneurysmal sac alongwith its laminated blood clots. The left ventricular opening was then repaired with interrupted butterressed sutures using 2/0 Ethibond. Associated procedures like coronary artery bypass grafting and mitral valve replacement were also performed. These patients were electively ventilated for 6 to 10 hours. All the survivors were discharged from the hospital on 10th post-operative day.

RESULTS

A total of 6 patients underwent surgery. 5 were males and one was female. Age ranged from 46 to 62 years. All the patients presented with grade III-IV dyspnea. 4 patients had angina. One patient was in cardiogenic shock, being partially stabilized on dobutamine infusion. One patient, the female, aged 53 years had normal coronary angiogram, but a past history of pericardiocentesis for tuberculous pericardium. Rest of the 5 patients had tripple vessel disease. Operative findings included, anterolateral aneurysm in 2 patients, apical aneurysm in one patient and posterior type in 3 patients. Additional procedures included coronary artery bypass grafting with 2-3 distal anastomoses in 5 patients and mitral valve replacement in one patient. Among the survivors, 3 patients required Dobutamine infusion, after repair. 2 patients, however, needed adrenaline infusion, as well. One patient died per-operatively, because of inability to wean off the extra-corporeal circulation. This patient had mitral valve replacement in addition to three bypass grafts and aneurysmectomy. One patient died on second post-operative day due to low cardiac out put and ventricular fibrillation.

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DISCUSSION

Free wall rupture is a fatal complication of acute myocardial infarction. Rarely, these patients survive and develop a false aneurysm. Pathogenesis of this aneurysm formation is not clear, though various mechanisms have been postulated. One important pre requisite for such aneurysm formation is a relatively slow and more chronic formation of transmural haematoma. It gives enough time for adhesion formation between epicardium and pericardium. It is a surgical emergency, due to the risk of delayed spontaneous rupture of aneurysmal sac or other systemic complications. On examination, the aneurysm is usually covered by dense pericardial adhesions. It has a narrow communicating neck. The cavity itself is filled by lamilated clots. It is a rare entity. Review of various studies reporting false aneurysms of left ventricle, showed an incidence of 4 to 9 alive patients in every article. These patients usually present with congestive heart failure, angina, systemic thrombo-embolism and ventricular arrhythmia. Anterior rupture, though more common, is rapidly fatal. So, more patients with posterior aneurysms are able to reach the hospital. The present report, though not the largest series, still it is one of the large ones. In this patient population, pre existing cardiogenic shock, mitral valve replacement and peri operative infarction are the predictors of mortality. All the survivors in this patient population were discharged from the hospital on 10th post operative day in functional class II, with minimal medication. As regards the eitiology of this entity, old myocardial infarction is believed to be the only cause. In our series, a lady aged 53 years, underwent surgery for posterior type aneurysm. She had normal coronary angiogram. We could not find any other evidence of previous myocardial infarction. She, however gave a history of tuberculous pericarditis, two years earlier. She remained hospitalised at that time. A pericardial drain tube was put in, which was kept for 4 days. Recovery remained uneventful, thereafter. We postulate, that, trauma to the posterior ventricular wall with hard tip of the tube initiated this pathology. The patient survived so long, because of the septation of pericardial cavity due to tuberculosis. To our knowledge, this pathogenesis alongwith tuberculosis has never been reported before.

CONCLUSION

A large series of a rare pathology is being reported. The surgery caries a high mortality in haemodynamically unstable patients. The survivors do well post-operatively.

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