An uncommon cause of pulsation on the left side of the thorax

Case report

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An uncommon cause of pulsation on the left side of the thorax. Case report

A 70 years old man affected by clinical findings of congestive heart failure eight months after aneurysmectomy of a true left ventricular aneurysm, presented with actual pseudoaneurysm of the left ventricle.
There was a 5 x 5 cm soft tissue mass on the left side of the chest, synchronously pulsating with heart beating. The repair was performed with the aid of cardiopulmonary bypass. Myocardial tissues were approximated and closed by using two Teflon stripes. BioGlue was applied on the sutures and between the stripes.
Although there is a significantly high mortality of the pseudoaneurysm cases their repair can and should be performed in an urgent procedure.

KEY WORDS: Postaneurismectomy complication, Ventricular pseudoaneurysm of heart.

Introduction

A 70 years old man who had clinical findings of congestive heart failure eight months after aneurysmectomy of a true left ventricular aneurysm and now with a pseudoaneurysm of the left ventricle is presented in this case report.
Rupture of the free wall of the left ventricle sometimes is contained by the surrounding pericardium and is denominated as pseudoaneurysm. Pseudoaneurysm of the left ventricle (LV) is a rare and fatal problem that may occur after acute myocardial infarction, trauma, repair of ventricular aneurysm ([1]). These left ventricular pseudoaneurysms (LVPA) are frightening complications because of threatening fatal rupture. Recognition of this rare complication of aneurysmectomy is vital because operative repair is mandatory. The pseudoaneurysms usually present with heart failure and they can be classified as postinfarction ones that occurred after myocardial infarction and postsurgical ones such as our patient that occurred after cardiac surgery. The cases diagnosed in the first two weeks are called acute, and chronic when diagnosed after three months from the event. These aneurysms usually progress asymptomatically, which makes it hard to diagnose. These are very rare cases of pseudo aneurysms that present with the symptom of pulsating mass of the chest wall as in our patient.

Case report

The patient who had an LVPA with pulsating mass of the thorax wall was discussed in this case. Our 70 years old male patient had undergone the repair of the LV true aneurysm in his first operation. In the first operation LV true aneurysm was repaired with continuous suture and gore-tex patch and then dissected myocardial wall was sutured on itself with prolene sutures. Coronary artery bypass grafting with saphenous vein was done to right coronary artery from aorta. No revascularization for the left anterior descending and circumflex artery were done, because both of them were in the aneurysm pouch. Our patient was well recovered and discharged on the 6th postoperative day without any complication.
8 months after the surgery patient was admitted to our clinic with a pulsating mass of the thorax wall and with a history of dyspnea in the last four weeks. There was

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a 5 x 5 cm soft tissue mass on the left side of the chest and it was pulsating in synchronous with heart beating (Fig. 1). There was no pathological physical and biochemical value. By the evaluation of the patient with Computerized Tomography dilated left ventricle with anteroapical pseudoaneurysm and a soft tissue mass (Fig. 2) was detected that reaching from the cardiac region through the left anterior thorax wall. This appearance was extended into the intercostal space near the subcutaneous tissue. The bulging of the left heart border suggesting large aneurysm is seen on both tomography films and also visually.

Fig. 1: Left ventricular pseudoaneurysm extending through the torax wall.

Patient was operated. The repair was performed with the aid of cardiopulmonary bypass by using the standard aortic and right atrial cannulation technique. The psudoaneurysm was detected on the apical surface of the left ventricle at the site of previous operation region. Firm adhesions were carefully dissected during cardiac arrest period. Dissection was carried out through the left thoracal cavity near to the left ribs. Pseudoaneurysm cavity opened longitudinally (Fig. 3) and previously placed gore-tex patch was removed. Necrotic tissues were debrided and healthy myocardial tissues were approximated and closed by using two Teflon stripes. BioGlue (biological bovine serum albumin and glutaraldehyde glue) (CryoLife International inc, Kennesaw, GA, USA) was applied on the sutures and on the region between these Teflon stripes.

The patient was discharged in 11th postoperative day. In a 6 month and 1 year CT controls no sign of new pseudo aneurysm development was seen.

Discussion

Although there is a significantly high mortality of the pseudoaneurysm cases their repair can and should be performed. Urgent surgical procedure must be applied because of the high probability of risk of fatal rupture and sudden cardiac death. Diagnosis can be done easily with computerized tomography.

The risk of rupture is also higher than the risk of elective surgical operation and repair. Postsurgical pseudoaneurysms can be encountered after previous ventriculo-

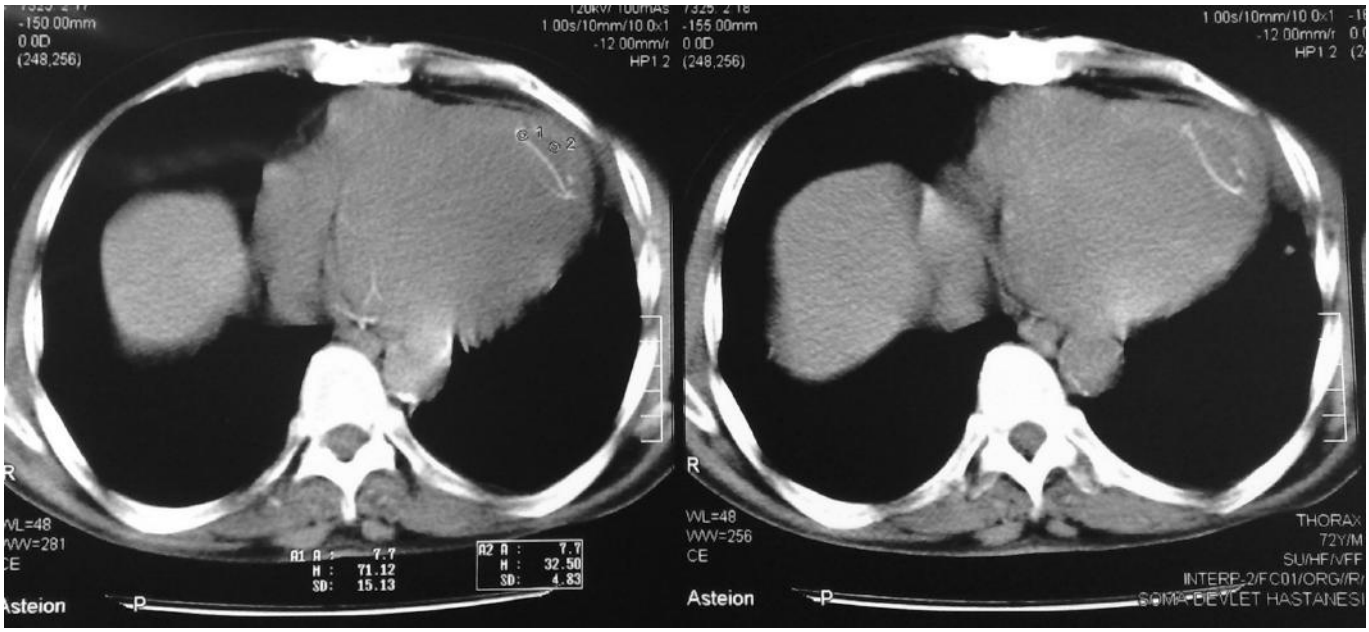

Fig. 2: Computerized tomographic view of the pseudoaneurysm.

Fig. 3: Operative appearance of the myocardial wall.

tomy or mitral valve surgery [1]. In the literature, there are not many reports as a giant pseudoaneurysm after true aneurysmectomy [2].

Tearing of the sutures of the myocardium may be the cause of postsurgical pseudoaneurysm such as our case. Rupture is closely related to the ischemic area and the wall tension of the aneurysm pouch. And also the infection of the sutures or the mechanical factors like separation of the suture lines may be the possible causes of this dangerous complication. In our case there was no sign of infection but the suture lines were separated at the lateral end possibly because of the continuous traumatic effect of the cardiac contractions. To avoid this effect during suturing the surgeon should use the fibrous rim instead of the myocardial tissue because it holds a lot stronger then the live myocardium. If it is necessary to use the myocardium Teflon supported extra suturing must be done. Also sufficient revascularization must be provided in LV aneurysms, if possible LIMA (left internal mammarian artery) should be used because of its tendency to remain open.

LVPA might progress silently if it forms after heart surgery or myocardial infarction. LVPA should be considered in every patient presenting with pulsating mass of the thorax wall after open heart surgery. Computerized tomography is very useful for planning therapy method and very accurate in making the diagnosing of these cases.

Conclusion

Left ventricular pseudoaneurysms should be repaired with urgent procedure in any case and their possibility should be kept in mind in cases of post-cardiac-surgical patients.

Riassunto

Uomo di 70 anni con segni clinici di insufficienza cardiaca congestizia otto mesi dopo aver subito un intervento di aneurysmectomia di un vero aneurisma ventricolare sinistro, si presenta con uno pseudoaneurisma del ventricolo sinistro. Vi era una massa di tessuto molle di 5 x 5 cm sul lato sinistro del torace, vivacemente battente in sincrono con il cuore. La riparazione è stata effettuata in regime di bypass cardiopolmonare, ed i tessuti del miocardio sono state ravvicinati e chiusi con due strisce Teflon. Del collante biologico è stato applicato sulle suture e tra le striscie. Sebbene vi sia un alto tasso di mortalità nei casi di pseudoaneurismi, la loro riparazione può e deve essere eseguita con procedura d'urgenza.

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