An apical left ventricular aneurysm rupture presenting as left breast mass 11 years after surgical repair

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ABSTRACT

Left ventricular (LV) pseudoaneurysm is a rare entity and, consequently, there is limited knowledge of the condition's natural history. The most frequent mode of presentation for LV pseudoaneurysm is heart failure with chest pain. However, the variable presentation of this condition requires a high index of suspicion for diagnosis.

We report the case of a 75-year-old woman who had suffered an acute myocardial infarction 23 years previously, which resulted in a calcified LV apical aneurysm. Three weeks prior to being referred to our hospital, she was noted by her general practitioner to have a left-sided breast mass although mammography was negative. One week later, she attended the accident and emergency department; she was haemodynamically unstable but was resuscitated successfully. Contrast enhanced computed tomography showed a large haematoma located in the left chest wall communicating with the left ventricle. She underwent emergency cardiac surgical repair. On arrival at the intensive care unit following surgery, her haemodynamic status was unstable, and she deteriorated rapidly and died.

With this report, we aim to raise the level of awareness for an apical LV pulsatile mass that could anatomically expand and present as a breast mass or tumour. An early diagnosis and timely surgical intervention is essential in order to achieve better outcomes and avoid detrimental complications.

KEYWORDS

Thoracic aortic aneurysm – False aneurysm/surgery – Heart ventricles/surgery

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Case History

We report the case of a 75-year-old woman who had suffered a myocardial infarction 23 years previously, which resulted in a calcific left ventricular (LV) apical aneurysm, severe LV dysfunction and postinfarction angina. She had undergone coronary artery bypass surgery and a LV aneurysmectomy, and continued to do well. A year later, she returned to the clinic complaining of symptoms of heart failure, and she was put on maximal anti-heart failure treatment. Two years ago, she had a biventricular device with a defibrillator fitted. At the time, computed tomography (CT) coronary angiography demonstrated patent grafts, a dilated left ventricle, a calcification at the apex and no evidence of a LV aneurysm.

Three weeks prior to being referred to our hospital, the patient was noted by her general practitioner to have a left-sided breast mass but mammography was negative. A week later, she attended the accident and emergency department owing to a hypotensive episode with a systolic blood pressure of 80mmHg. She had a heart rate of 108 beats per minute, a

respiratory rate of 24 breaths per minute and her oxygen saturation was 90% on 35% oxygen. Electrocardiography demonstrated biventricular pacing and sinus tachycardia. On examination, it was revealed that she had a large, non-tender, pulsatile mass located in the upper right quadrant of the left breast with extensive ecchymosis. She was successfully resuscitated and stabilised.

Ultrasonography of the chest showed a 6.5cm × 4.7cm heterogeneous mass located at the site of the swelling on the left breast consistent with a haematoma. Contrast enhanced CT of the thorax demonstrated a 6.5cm × 8cm mass located in the left chest wall and consistent with a large haematoma. It was also noted that there was a communication with the pericardium overlying the left ventricle where there was evidence of previous LV aneurysm repair (Figs 1 and 2).

The patient was referred urgently for cardiac surgical repair of the recurrent aneurysm. Intraoperatively, a femoro-femoral cardiopulmonary bypass was established. A patch repair to her left ventricle was performed. She required an insertion of an intra-aortic balloon pump and ample inotropic support to come off the cardiopulmonary bypass. She

Figure 1 Contrast enhanced computed tomography showing a pseudoaneurysm in the soft tissue of the left breast. There is a communication between the pericardium overlying the left ventricle, through the chest wall into the posterolateral aspect of the mass (arrow).

Figure 2 Sagittal contrast enhanced computed tomography showing the maximal diameter of the pseudoaneurysm in the left breast

was transferred immediately to the critical care unit. On arrival, her haemodynamic status was stable. Despite this, she deteriorated rapidly and died.

Discussion

LV pseudoaneurysms are a rare entity and, consequently, there is limited knowledge of the condition's natural history. The reported incidence of a pseudoaneurysm following cardiac surgery is lower than 0.5%.¹ The most frequent mode of presentation for LV pseudoaneurysm is heart failure with chest pain.² However, the variable presentation of this condition requires a high index of suspicion for diagnosis. LV free wall rupture is usually a complication of acute myocardial infarction although previous cardiac surgery is a significant risk factor.² It is well documented that without surgical repair, affected patients have a high predilection to rupture, carrying a high mortality rate.³ Typically, LV rupture results in tamponade, heralding a poor prognosis. Conversely, there are isolated cases of prolonged survival in patients with LV pseudoaneurysm.⁴

Conclusions

With this report, we aim to raise the level of awareness for an apical LV pulsatile mass that could anatomically expand and present as a breast mass or tumour. An early diagnosis and timely surgical intervention is essential in order to achieve better outcomes and avoid detrimental complications.

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