

Large Subpectoral Hematoma: Possible Complication of Sternotomy Post-Cardiac Surgery

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A 62-year-old female patient developed a significantly enlarged left breast 6 hours after sternotomy for a coronary artery bypass graft operation. This was the result of subpectoral bleeding caused by a sternal wire. (Ann Thorac Cardiovasc Surg 2009; 15: 192–193)

Key words: coronary artery bypass graft, sternotomy, subpectoral hemotoma, bleeding, wire

Case Report

A 62-year-old female patient underwent a coronary artery bypass graft (CABG) with the left internal mammary conduit, using a midline sternotomy incision. Six hours postoperatively she became hemodynamically unstable with an unexplained drop in hemoglobin, despite minimal chest drain output. A clinical examination of the patient to establish the cause of her hemodynamic instability revealed a significantly enlarged left breast compared with the right. Its appearance resembled a post-enlargement procedure with subpectoral implant (Fig. 1). A surgical exploration revealed 1,000-ml of left subpectoral hematoma caused by bleeding from a sternal wire site. The bleeding was from one of the internal mammary artery perforator branches at the external surface of the fourth left intercostal space just lateral to the sternum. This bleeding from the high-pressure arterial system dissected through the least resistant plane into the left subpectoral space, creating a large subpectoral hematoma (Fig. 2). The patient had an otherwise uncomplicated

recovery after the operation.

Discussion

The percentage of re-exploration for bleeding following cardiac surgery is 3–5%.^{1,2)} The causes can be multifactorial: full anticoagulation, operation on large vascular structures, and negative intra-thoracic pressure formed by the vacuum effect created by the chest wall.²⁾ The rate of bleeding into the chest drains positioned in both the pleural and mediastinal spaces determines the need for re-exploration, along with the patient's coagulation profile and hemodynamic stability. The sternal wires are a common site where bleeding might occur. Generally, the bleeding tends to occur on the internal side of the sternum into the thoracic cavity where the blood finds its way out through the chest drains and makes the diagnosis of bleeding easier. In this case, the bleeding caused by the sternal wire was on the external side of the sternum. The high pressure arterial system enabled the hematoma to expand and spread in the least resistant plane through the well-defined, easy-to-dissect subpectoral plane. Hence, the subpectoral space is the space of choice for breast enlargement implantation,³⁾ and it is also used to implant pacemakers.⁴⁾ Thus subpectoral hematoma can be one of the complications after breast enlargement surgery³⁾ and permanent pacemaker implantation.⁵⁾ In the context of sternotomy, however; this is the only reported case to date, which emphasizes the importance of performing a general clinical examination, requiring the best exposure so as not to miss such an unusual complication.

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Fig. 1. Left breast enlargement after sternotomy.

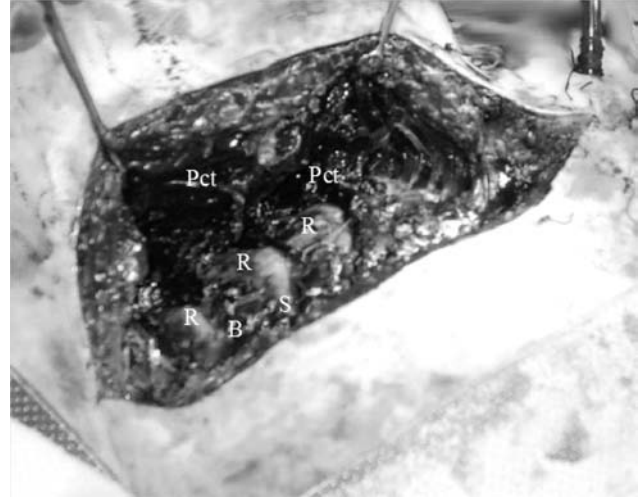


Fig. 2. Surgical exploration and drainage of the subpectoral hematoma.

R, ribs; B, bleeding point; S, sternum; Pct, the roof of the subpectoral space with clots after draining the collection, which required dividing the medial insertion of the pectoralis major muscle onto the lateral border of the sternum and the costosternal cartilages.

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