Case report

Video-assisted control of haemorrhage post coronary artery bypass surgery

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Abstract

Excessive bleeding post coronary artery bypass surgery (CABG) remains a major source of morbidity and mortality. Approaching this bleeding with a resternotomy, while necessary in the vast majority of cases, is associated with an increased incidence of infections and sternal wound complications. A thorascoscopic approach in select patients with a pleural based collection is described. © 1997 Elsevier Science B.V.

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1. Introduction

Recent advances in video-assisted and minimally invasive access technology have allowed greater visualization and mobility within the thorax leading to a resurgence of interest in thoracoscopy for diagnostic and therapeutic uses. One such use may be in managing bleeding post cardiac surgery when its origin is confined to a pleural cavity.

2. Case history

A 65-year old lady with three vessel coronary disease and an ejection fraction of 45% was recently admitted for coronary artery bypass surgery (CABG). After median sternotomy the left pleural cavity was opened and the left internal mammary (LIMA) was harvested. The right pleural cavity was not entered. Saphenous vein grafts were anastomosed to the distal right main coronary artery and to the first marginal branch of the circumflex system. The LIMA was anastomosed to the left anterior descending coronary artery. Two chest tubes were used, one in the mediastinum and one in the left pleural cavity. The patient was extubated 6 h later. Total chest tube drainage on the first post-operative night was 660 mls. However, chest roentgenogram on the first postoperative morning revealed a large right sided haemothorax (Fig. 1(a)). The chest tubes placed at operation were not draining and a right tube was inserted which drained 950 ml of blood. The patient was transfused and transferred back to the operating theatre.

After placement of a double lumen endotracheal tube the patient was positioned in the left lateral decubitus position and draped in standard fashion for thoracoscopy [1]. The right chest tube was removed. An incision 1.5 cm in length was made in the sixth intercostal space at the mid-axillary line for insertion of the scope. The right lung was deflated, the residual haemothorax was evacuated and a diagnostic thoracoscopy was performed which revealed an intercostal...
Fig. 1. (a) Chest roentgenogram 1 day post CABG with large right haemothorax. (b) Chest roentgenogram 1 day post VATS.

arterial bleeding point beside the third sternal wire. A second incision was now made in the fifth intercostal space at the anterior axillary line and an electrocautery forceps passed through it coagulated the bleeding point. A chest tube was placed through the first incision and the second was closed.

The patient was extubated later that day, her chest tube was removed one day later, subsequent chest roentgenogram (Fig. 1(b)) was normal and she was allowed home 7 days later.

3. Comment

Excessive post-operative bleeding after open heart surgery requiring surgical intervention occurs in 3–4% of patients [2,4,5] and is associated with considerable morbidity and mortality [5]. Resternotomy is the standard approach for reexploration for bleeding, but this in itself is associated with an increased incidence of wound complications, sternal dehiscence and mediastinitis, which results in significant morbidity and may have fatal consequences [3].

This patient had a right haemothorax, despite not having this pleural cavity formally opened at operation, and was haemodynamically stable. It appeared that the source of bleeding was confined to the right pleural cavity. Because of the large volume of blood in the pleural cavity we elected to explore the patient. By using thoracoscopy, potential complications of resternotomy were avoided.

This approach allowed swift identification and control of the bleeding and full evacuation of blood clot. The operation was associated with minimal post-operative morbidity and facilitated early discharge. Whilst we do not propose this method as an alternative to resternotomy, video-assisted exploration for bleeding post CABG in those select patients who have a pleural based collection is a useful addition to the surgeon’s armamentarium and allows one to combine the aspirations of minimal morbidity and control of the haemorrhage.

References