

Thoracoscopic treatment of postoperative chylothorax after coronary bypass surgery

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Abstract

Chylothorax after sternotomy for aortocoronary bypass surgery is a rare but serious complication. To avoid lateral thoracotomy a left sided thoracoscopy was performed and the site of the leakage was immediately found and successfully clipped.

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Chylothorax is defined as an accumulation of fluid in the pleural space caused by leakage from the thoracic duct. After failure of conservative treatment, surgical intervention is inevitable because of nutritional deterioration. Historically, ligation of the thoracic duct via open right thoracotomy has been the procedure of choice. Two reports on the successful treatment of chylothorax by thoracoscopy have recently been published.^{1,2} In one case bilateral chylothorax was successfully treated by transection and ligation of the thoracic duct after right sided thoracoscopy,¹ and in the other chylothorax after aortocoronary bypass surgery was successfully treated by application of fibrin glue under local anaesthesia.² In this report we describe clipping of the thoracic duct at the level of the leak in a patient who suffered a left sided chylothorax after aortocoronary bypass surgery.

Case report

A 58 year old man underwent aortocoronary bypass surgery in another hospital. Operation and postoperative recovery were uneventful. A chest radiograph two weeks after the operation showed a moderate left pleural effusion which was attributed to the coronary bypass operation. Five weeks after the operation the patient complained of dyspnoea, and a chest radiograph showed a large left pleural effusion. Thoracocentesis revealed milky fluid and analysis confirmed chyle. A chest tube was inserted and 2.5 litres of chyle were removed, with a

subsequent production of 500–1000 ml per day. This persisted for two weeks of medium chain triglyceride diet, and therefore thoracoscopic intervention was attempted.

The patient was given four spoons of full cream three hours before the operation. Thoracoscopy was performed under general anaesthesia after double lumen intubation with the patient in the right lateral decubitus position. It was assumed that the leakage was from above the level of the sixth thoracic vertebra and therefore trocars were inserted at that level. A 12 mm trocar was inserted via the fifth intercostal space, midaxillary line, through which a 10 mm optical telescope attached to a video system with two monitors was inserted. Additionally, under endoscopic view a 12 mm trocar was placed via the fourth intercostal space at the posterior axillary line, and a 12 mm trocar in the fourth intercostal space at the anterior axillary line. Through these trocars a retractor (Endo-retract; Autosuture) and a working instrument were introduced.

After collapsing the left lung leakage from the thoracic duct was seen in the posterior mediastinum behind the aortic arch. After clipping the leak drainage continued at 50–100 ml/day postoperatively, perhaps because of leakage from small collaterals of the thoracic duct or because some fluid remained in the hemithorax after thoracoscopy.

After 10 days the drain was removed and the pleural effusion did not recur.

Discussion

Chylothorax is a rare complication after aortocoronary bypass surgery.^{3,4} If conservative therapy fails, surgery is mandatory and normally open thoracotomy would be performed. However, as our patient had just recovered from sternotomy, it was decided to perform a thoracoscopy. The advantages of thoracoscopic treatment in terms of postoperative pain and return to normal activity are obvious. Because of the morbidity associated with thoracotomy, conservative treatment of a chylothorax is usually first tried for 2–6 weeks.⁵ However, with prolonged conservative treatment a significant amount of chyle is lost each day which may lead to malnutrition, making the patient unfit for surgery if this becomes necessary because of failure of such treatment. Early thoracoscopy has two major advantages: the risk of malnutrition is minimised, and post-thoracotomy pain and discomfort are avoided.

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