Case Report

Treatment of Delayed Chylothorax Complicating Oesophagectomy

Sukumar Nadesan, Teoh C. Ming, Gunasegaran Thangaveloo and Ali Yaakub Jasmi, Department of Surgery, Faculty of Medicine, Hospital University Kebangsaan Malaysia, Kuala Lumpur, Malaysia.

A patient with carcinoma of the cardia underwent Ivor-Lewis oesophagogastrectomy. He developed right chylothorax postoperatively, which is a rare complication. Attempts to treat the chylothorax by conservative means and thoracoscopic ligation failed. Finally, pleurodesis using bleomycin successfully sealed the leak and he was discharged. [Asian J Surg 2005;28(2):142–4]

Key Words: chylothorax, oesophageal carcinoma, pleurodesis

Introduction

Chylothorax is a rare and dreadful complication of oesophagectomy.1–3 It can be a difficult clinical management problem and is a debilitating condition as patients become severely malnourished and immunocompromised due to massive loss of immunoglobulins, lymphocytes, proteins and fat. Compression of the lung and mediastinal shift may also have disastrous consequences.2,3 Chylothorax presents early in the postoperative period and treatment should be quick to prevent patient deterioration. Management of chylothorax is controversial.1–3 Conservative treatment has been successful, but the trend towards early intervention seems to be safer and also effective.1–4 We present the case of a patient with refractory chylothorax post-oesophagectomy who was treated successfully using pleurodesis with bleomycin. Treatment of chylothorax with bleomycin in this situation is rare and few cases have been reported. The options for treatment of chylothorax are discussed.

Case report

A 54-year-old man presented with altered bowel habit for the past 3 months, significant weight loss and pallor. There were no significant physical findings. A diagnosis of colonic carcinoma was made but colonoscopy was normal. Surprisingly, oesophagogastroduodenoscopy revealed a tumour at the cardia which was confirmed to be a poorly differentiated adenocarcinoma. Computerized tomogram revealed a large mass at the cardia with lower para-oesophageal lymphadenopathy but no other metastasis. The patient underwent Ivor-Lewis oesophagogastrectomy with gastric tube-oesophageal anastomosis. Postoperatively, he recovered well, though the chest tube drained about 400 mL of straw-coloured fluid daily. He tolerated diet well after 1 week. Though we suspected thoracic duct injury, the drain never contained chylous fluid even after a fatty meal and eventually dried up by 2 weeks. He was discharged uneventfully. He returned 3 weeks later with a massive right chylothorax (Figure 1). A chest tube was inserted and drained 6 L of chylous fluid; it continued to drain 1 L of chyle daily. He was started on parenteral nutrition and kept fasted, but the tube continued to drain 400 mL daily. Five days later, we performed a thoracoscopic examination. Fresh cream was instilled in the nasogastric tube but there was no obvious leak in the pleural cavity to indicate the site of thoracic duct injury and the procedure was abandoned. There were dense adhesions of the lung to the gastric tube. A small closed-tube drain was placed in the pleural cavity but the...
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suggest that the amount of chest drainage may predict the outcome of non-operative treatment, but drainage of more than 1 L/day usually leads to failure.1–3 Conservative treatment should not be instituted for more than 2 weeks,1–3 as patients become debilitated when it fails, with a high mortality of 50–80%.1–3 Early surgical intervention has a better outcome1–4 and thoracoscopic ligation is safe and effective,1,3–5 with a mortality rate of less than 0.5%.5 A fat-rich liquid administered orally intraoperatively helps to localize the leak.1–3,6 The leak can then be ligated thoracoscopically. Fibrin glue applied via the thoracoscope has been used successfully.1,3 Open surgery and ligation is common, but the morbidity and mortality are higher than with thoracoscopy, with a risk of damage to the gastric tube.1–4 In our patient, thoracoscopy failed to identify the leak despite instilling cream via a nasogastric tube. This was most likely due to the adhesions that had formed as a result of the delay in performing the thoracoscopy.

Pleurodesis has been tried with various reports of success, using agents such as talc, tetracycline and bleomycin.1,2,5,7 Talc is very effective but has the complication of acute respiratory distress syndrome and talc pneumonitis.1,5 Bleomycin is advised for malignant effusion and it is rarely toxic.5,8 Pleurodesis with bleomycin has a success rate of 0%5,8 for malignant effusion but there are very few reports advocating bleomycin for chylothorax.9 Pleurodesis is successful only if the drainage is minimal (< 150 mL) and the lung fully expanded. Bleomycin at 60 U mixed in saline is sufficient and the chest tubes must be clamped for 1 hour after instillation.5

Pleural decortication has also been used with success1–3,5 and has a mortality of 13%.5 Pleuroperitoneal shunts have been reported to be fairly successful,1,5,7 with low morbidity. If chest tube was not removed. He recovered uneventfully and both the drains were dry for 2 days. Unfortunately, the chest tube began draining copiously again at 1 L/day. He was fasted for 2 days, after which the tubes drained about 100 mL/day and chest radiography revealed a fully expanded lung. Bleomycin (60 U) was instilled through the chest tube, which was clamped for 1 hour. His drains were subsequently dry and were removed 2 days later. He was discharged after 4 days of observation and the chest radiograph revealed no further effusion (Figure 2). Follow-up 1 month later revealed no further chylothorax.

Discussion

The incidence of thoracic duct injury after oesophagectomy is about 3%.2,3 Mortality is high, up to 50%.1,3 Thoracic duct injury is easily confirmed by giving the patient a fatty meal so that the drainage increases significantly and becomes chylous,1–3 which we did not see in our patient. Most chylous leaks present early, within a few days, but late leaks have been reported and are presumed to be due to an early occult leak into the mediastinum that later discharges into the pleural cavity and chest drain.3 Fluid sampling reveals high triglyceride and lymphocyte levels. Localization of the thoracic duct injury by lymphangiography1–3 or lymphoscintigraphy3 may be attempted but is difficult, time-consuming and may be unsuccessful.1,2

Most reports advise early intervention1–4 as the success rate is high, up to 90%, with a low mortality of up to 16%.2,3 Conservative treatment by chest tube drainage, fat-free diet or fasting with intravenous parenteral nutrition may succeed in 80% of cases, but the outcome is difficult to predict.1–3 Reports

Figure 1. Right chylothorax.

Figure 2. Four days post pleurodesis (right lung).
all means fail, then long indwelling catheters may be the only option.

References