therefore highlights the importance of considering an underlying cause of cancer in any patient presenting with culture-negative endocarditis.

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No Air Leak on PPV does not Exclude Tracheobronchial Injury after Blunt Chest Trauma

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Tracheobronchial injuries are commonly associated with persistent air leak with pneumothoraces especially when on positive pressure ventilation (PPV).

Injuries with absence of these features together with collapse of the lung and consequent low arterial oxygen tension while on PPV are less well recognised.

We present a patient with traumatic aortic dissection and preoperatively undiagnosed complete transaction of the left main bronchus following blunt chest trauma. He had no persistent air leak with lower lung lobe collapse despite undergoing PPV and had low arterial oxygen tension which failed to respond to appropriate oxygen therapy.

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Keywords. Tracheobronchial injury; Transaction of bronchus; Blunt chest trauma; Airway injury; Air leak; Pneumothorax; Bronchoscopy; Positive pressure ventilation

Introduction

A pneumothorax with a persistent air leak after tube thoracostomy is a recurrent clinical feature of tracheobronchial injury, especially when the patient is subjected to positive intrathoracic pressure as in positive pressure ventilation (PPV).

Collapse of the lung with consequent continuing low arterial oxygen tension has not previously been noted as a significant characteristic of tracheobronchial injury.

We report a patient with traumatic aortic dissection and preoperatively undiagnosed complete transection of the left bronchus following blunt chest trauma. He had no persistent air leak and lower lobe lung collapse despite undergoing IPPV and persistent low arterial oxygen tension which failed to respond to appropriate oxygen therapy.

Case Report

A 29-year-old Chinese man was involved in a road traffic accident. He had respiratory rate of 20/min and pulse oximetry of 90% on 15 L/min non-rebreather mask. There was decreased breath sound over the left chest with no subcutaneous emphysema. Chest radiograph (CXR) showed left haemopneumothorax and fractures of the left scapulae and 5th rib. The heart size was within normal limits. The mediastinum, however, was widened and there was loss of aortic outline definition. (Fig. 1) Left tube thoracostomy was performed.

Computerised tomographic (CT) angiography showed dissection of the thoracic aorta involving the distal aortic arch from the left subclavian artery to just before the bifurcation of the abdominal aorta (Stanford Type B). There was

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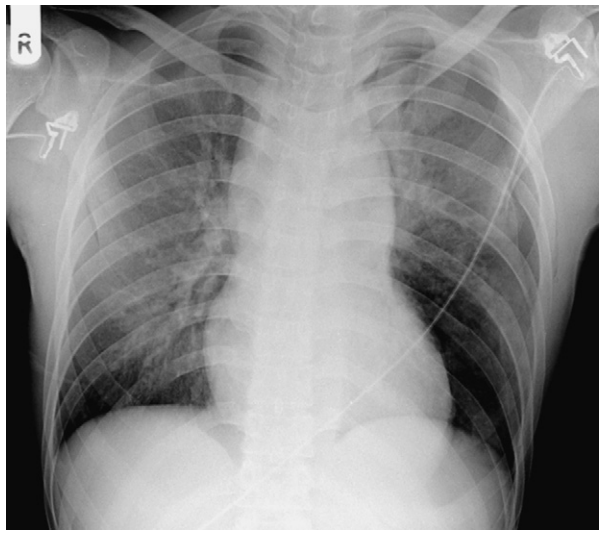

Figure 1. *Supine chest X-ray in Emergency Department showing left haemothoraces, bilateral haemothoraces and fracture left 5th rib. Note the widened mediastinum and loss of aortic outline definition.*

a large anterior mediastinal haematoma with no extravasation of contrast demonstrated, extensive lung contusion with bilateral haemothoraces and small residual left sided pneumothorax. (Fig. 2)

He underwent aortic stenting under general anaesthesia with positive pressure ventilation. Intra- and postoperative recovery was uneventful. No continual air leak was noted as evidenced by absence of continuous bubbling within the tube thoracostomy set. CXR and CT thorax done post aortic stenting showed resolution of pneumothorax with deployment of the aortic stent in the correct position. (Figs. 3 and 4)

Postextubation the left chest revealed decreased breath sounds and a deteriorating oxygenation despite oxygen therapy. This was attributed to atelectasis and he was treated with continuous positive airway pressure (CPAP) therapy. Despite CPAP of 7.5 cm H_20 and

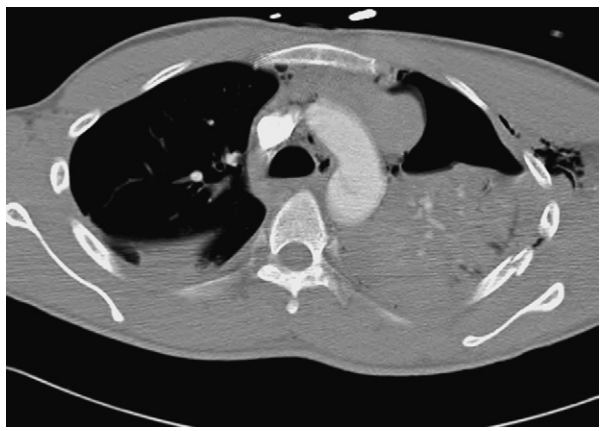

Figure 2. *CT thorax showing left pneumothorax and bilateral haemothoraces.*

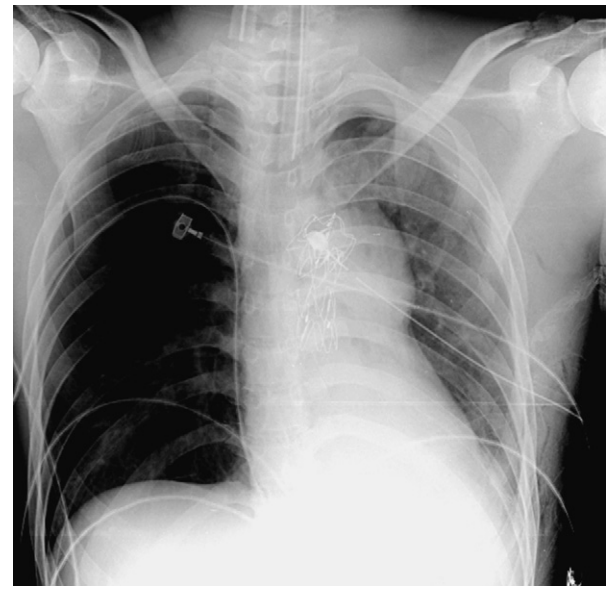

Figure 3. *Portable CXR showing resolution of left pneumothorax but persistence of left lung field haziness (due to haemothorax).*

F_i0_2 1.0, the arterial oxygen tension remained in the low 40s.

Fibreoptic bronchoscopy showed slit like orifice of the left mainstem bronchus occluded by thick mucus plugs.

CXR on day 4 poststenting showed collapse of the left lung field with no pneumothorax. (Fig.5)

Rigid bronchoscopy revealed complete compression of the left main bronchus and collapsed left lung. The distal left main bronchus could not be visualised. There was a small tear along the posterior membrane of the trachea with stenosis of mid left main bronchus about 1–2 cm from the carina The impression was that of an extrinsic compression of the bronchus as result of mediastinal haematoma.

He underwent left thoracotomy while ventilated on a right-sided double lumen Mallinckrodt size 7F endotracheal tube. Intraoperative findings revealed contusion and

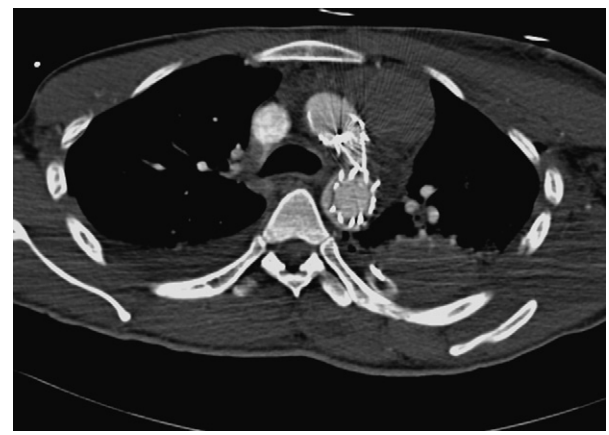

Figure 4. *CT thorax showing deployment of the aortic stent and resolution of left pneumothorax.*