Osteochondroma of the rib: an unusual cause of haemothorax


Abstract
The case is described of a 36 year old woman who presented with a large left sided haemothorax. A thoracic computed tomographic (CT) scan suggested there was a bony outgrowth arising from the fourth rib. This was resected surgically and found to be an osteochondroma which was surrounded by blood clot. No definite site of bleeding was identified, but it is thought that the tumour may have traumatised the lung, the pericardioephrenic artery, or the superior pulmonary vein, resulting in life threatening haemorrhage.

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Osteochondroma of the rib

Case report

A 36 year old woman presented with sudden onset of severe left sided pleuritic chest pain and breathlessness. On physical examination she had the signs of a left sided pleural effusion. There were no palpable abnormalities of the chest wall and she had no evidence of exostoses elsewhere. A chest radiograph confirmed a large left pleural effusion. A chest drain was inserted and 2·51 of blood was removed. Her haemoglobin concentration was 9·1 g/dl, white blood count 16·3 × 10⁹/l, platelets 341 × 10⁹/l. A clotting screen was normal as were urea, electrolytes, and biochemical tests of liver function. A computed tomographic scan of the thorax showed a mass of soft tissue density, 5 cm in diameter, abutting the left lower anterior chest wall and mediastinum. Projecting into the centre of this mass was a calcified spur continuous with the cortex of the underlying fourth rib (fig 1). The anterior mediastinum was normal and there was no lymphadenopathy. She underwent an exploratory thoracotomy. At operation a bony exostosis was found arising from the posterior aspect of the anterior end of the fourth rib. There was clot lying between the medial aspect of the lingular segments and the pericardium and the bony spur extended into this clot. On one side lay the pericardio-phrenic artery and on the other the lingual tributary of the superior pulmonary vein. There was no active source of bleeding but the position of the tumour suggested that it may have traumatised either the lung or blood vessels in its proximity. The abnormal segment of rib was excised and the clot removed. Her postoperative recovery was uneventful and there has been no recurrence of haemorrhage on follow up.

Histopathological examination of the rib revealed a 3 cm mass of bone covered by a cap of cartilage protruding from its surface (fig 2). Microscopic examination revealed features in keeping with an osteochondroma and there was no evidence of malignancy.

Discussion

Osteochondromas of the ribs are exceedingly rare. They may present as a swelling in the chest wall or as an incidental finding on the chest radiograph. Most are symptomless but they can give rise to pain and there has been a report of one affecting the first rib which gave rise to thoracic outlet syndrome. They occur more commonly in patients with multiple exostoses, but when solitary they are rarely diagnosed preoperatively. Furthermore, they can undergo malignant change giving rise to chondrosarcomas. As far as we are aware this is the first report of an osteochondroma causing a haemothorax. Although the CT scan suggested that a partially calcified tumour was related to the fourth rib, surgery was necessary to evacuate the blood clot, to establish the diagnosis, and to prevent further problems in the future. The site of bleeding in this case remains in doubt as no active bleeding was observed during surgery, but the proximity of the tumour to the lung and related vessels suggests that one of these structures was traumatised.

3 Teitelbaum SL. Twenty years’ experience with intrinsic tumours of the bony thorax at a large institution. J Thorac Cardiovasc Surg 1975;70:776–82.