Case Report

Thoracic Duct Cyst of the Mediastinum

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Thoracic duct cysts of the mediastinum are extremely rare. The etiology may be related to a congenital or degenerative weakness in the wall of the thoracic duct. They are generally asymptomatic but may sometimes cause pressure effects on adjacent structures. Imaging studies are supportive but not diagnostic. Excision of these cysts is required for diagnosis and to prevent complications. We describe a 49-year old man who presented to us with hoarseness and a fixed right vocal cord. Computed tomography (CT) showed a cystic posterior mediastinal mass in the right paratracheal region. We performed a posterolateral thoracotomy and found the cyst arising from the thoracic duct and contained chylous fluid with a high lipid concentration. We dissected the cyst from the surrounding structures and excised it. Histopathology revealed a cyst lined by a single layer of endothelial cells. He is asymptomatic now one year after surgery. (Ann Thorac Cardiovasc Surg 2003; 9: 264–5)

Key words: thoracic duct, cyst, mediastinum

Introduction

Posterior mediastinal masses are predominantly neurogenic tumors. Cysts of the mediastinum are uncommon and are usually developmental in origin. Thoracic duct cysts of the mediastinum are extremely rare and have only been described anecdotally in medical literature.[1,2] They are characterized by communication with the thoracic duct, which may or may not be obvious, and a high lipid concentration in the cyst fluid. We report a case of thoracic duct cyst successfully treated with excisional surgery.

Case Report

A 49-year old man presented to us with a one-month history of vague chest pain and hoarseness. Clinical examination was unremarkable except for a fixed right vocal cord on indirect laryngoscopy. Hematological and biochemical investigations were within normal limits. A chest radiograph showed mediastinal widening due to a right paratracheal shadow (Fig. 1). Computed tomography (CT) scan showed a homogeneous, non-enhancing cystic mass in the right paratracheal region (Fig. 2). Arterial blood gases and pulmonary function tests were normal. We operated on him with a right 5th rib bed lateral thoracotomy. There was an 8×7 cm cyst arising from the thoracic duct in the tracheoesophageal groove, closely related to the superior vena cava. The cyst was dissected on all sides and separated from the vagus, the trachea, esophagus and the superior vena cava. The recurrent laryngeal nerve was however, entrapped within the cyst and could not be preserved. The cyst was opened and chylous fluid aspirated. The aspirate contained cholesterol 1.6 mmol/L, triglycerides 18 mmol/L and protein 60 g/L. The cyst was then removed after ligating the communication with the thoracic duct. The patient had an uneventful postoperative recovery. The histopathology of the cyst wall showed a single layer of endothelial cells and there was no malignancy. He is now asymptomatic on a one year follow-up.

Discussion

Cysts of the thoracic duct are very rare.[1,2] It has been postulated that the etiology is related to a congenital or

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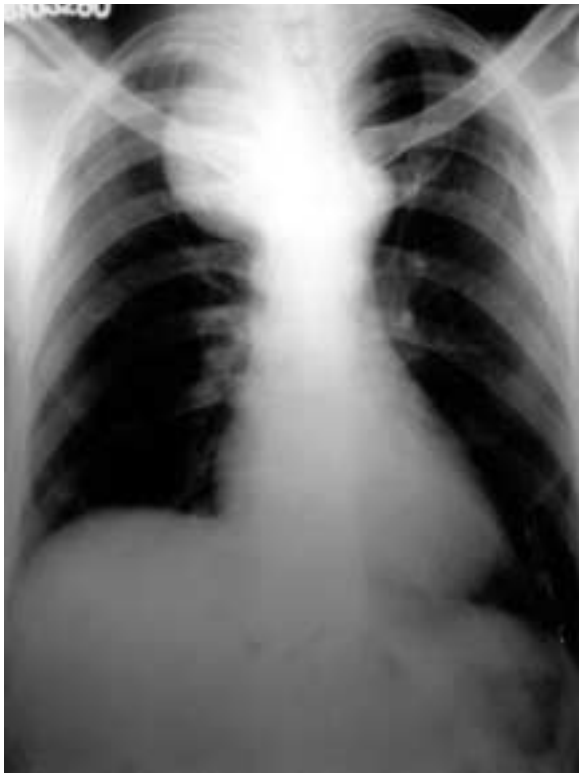

Fig. 1. Chest radiograph showing a homogeneous right paratracheal opacity.

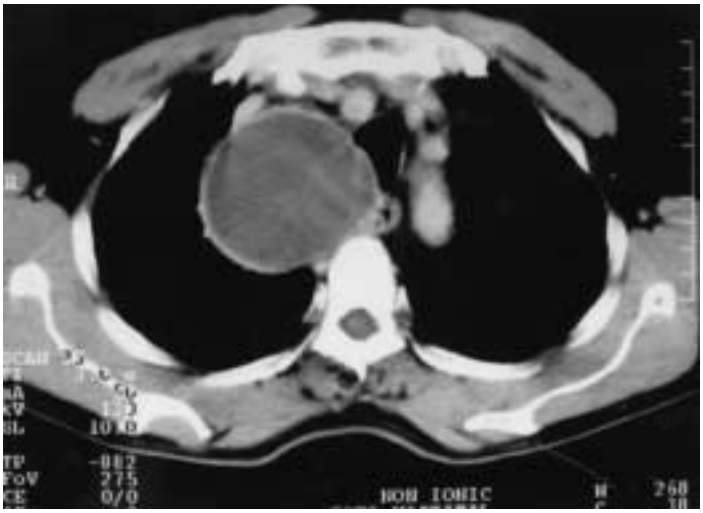

Fig. 2. CT scan showing a well-defined homogeneous, non-enhancing cystic mass in the posterior mediastinum.

degenerative weakness in the wall of the thoracic duct.[3] Thoracic duct cysts are generally asymptomatic, but may cause symptoms due to pressure on the esophagus or the airway like cough, dyspnea, and chest discomfort. It may cause acute respiratory distress through compression of the tracheobronchial tree.[4] Compression and entrapment of the recurrent laryngeal nerve by the cyst as in our case has not been previously described. On CT scans, thoracic duct cysts are seen as smooth homogeneous cystic masses. Magnetic resonance imaging (MRI), especially T2 weighted images, is superior in delineating the anatomic boundaries.[1] Compression of vascular structures may be made out without the use of contrast media. The high signal intensity has been attributed to the high concentration of lipids and proteinaceous material in the cyst.[1] Lymphangiography, though not mandatory, may aid preoperative diagnosis and confirm communication with the thoracic duct.[2] The natural history of these cysts is unknown. Smaller asymptomatic lesions may be followed up while larger, symptomatic lesions should be resected because of the possible complications resultant from traumatic rupture or inflammation.[3] Though not specifically described for thoracic duct cysts, thoracoscopic resection of mediastinal cysts may be done with negligible morbidity.

References

1. Lamers RJS, van Belle AF. Thoracic duct cyst in the middle part of the mediastinum. *AJR Am J Roentgenol* 1993; **161**: 675.
2. Tsuchiya R, Sugiura Y, Ogata T, Suemasu K. Thoracic duct cyst of the mediastinum. *J Thorac Cardiovasc Surg* 1980; **79**: 856–9.
3. Wax MK, Treloar ME. Thoracic duct cyst: an unusual supraclavicular mass. *Head Neck* 1992; **14**: 502–5.
4. Mori M, Kidogawa H, Isoshima K. Thoracic duct cyst in the mediastinum. *Thorax* 1992; **47**: 325–6.