Case report - Thoracic general

Video-assisted thoracoscopic surgical excision of paravertebral neurogenic tumour manifesting with unilateral facial and upper limb anhydrosis

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Abstract

A 21-year-old man presented with a recent onset history of tingling and numbness of his left upper limb. He also had a 3 year history of anhydrosis affecting the left half of his face and left upper limb. Clinical and Doppler assessment did not reveal any vascular cause for his symptoms. However, a chest roentgenogram revealed a smooth mediastinal-based shadow in the left upper zone. Further imaging revealed a well-rounded left upper paravertebral tumour with cystic areas. There was no evidence of intraspinal extension. He underwent a video-assisted thoracoscopic surgical (VATS) excision of the tumour. Following this, he made an uneventful recovery.

Keywords: Video-assisted thoracoscopic surgery; Anhydrosis; Neurogenic tumour

1. Case report

A 21-year-old man was referred to the vascular surgeons with a recent-onset history of tingling and numbness of the left upper limb. He was diagnosed to have grand mal epilepsy 3 months prior to presentation and was commenced on medication for the same. Further interrogation revealed a 3 year history of absence of sweating over the left half of his face and left upper limb. Both his grandfather and father had surgical excision of some neurogenic tumour from over the left shoulder and from adjacent to the lower thoracic spine, respectively.

Clinical assessment revealed a weaker left radial pulse. Doppler evaluation did not reveal any vascular or flow abnormality. A chest roentgenogram revealed a left superior mediastinal mass with a smooth lateral border (Fig. 1a). Computerised tomographic (CT) scan confirmed the presence of a 6 cm mass in the left posterosuperior mediastinum abutting on the left subclavian artery (Fig. 1b). This mass was predominantly cystic and was discrete from all adjacent vascular structures, vertebrae and major airways. A magnetic resonance imaging (MRI) scan was performed, which confirmed all the previous findings and did not reveal any extension into the spinal foramen (Fig. 1c and d). He was referred for surgical intervention.

He underwent a video-assisted thoracoscopic surgical (VATS) procedure with two small ports through the fourth intercostal space, one placed half-way between the mid-clavicular line and the anterior axillary line and the other just posterior to the posterior axillary line. Another small utility thoracotomy was made through the third intercostal space in the axillary region. We found a globular cystic mass, sitting right at the apex of the intrathoracic space, which seemed to spring out of the paravertebral gutter. It was covered by the mediastinal pleura (Fig. 2). It was easily dissected out by a combination of sharp and blunt dissection and arose from the sympathetic chain in the region of the stellate ganglion. It was close to the subclavian artery and the arch of the aorta. Excision was followed by a routine closure. The patient made an uneventful recovery and was discharged on the sixth postoperative day. He did not develop any new signs of Horner’s syndrome.

The histology of the resected specimen revealed encapsulated tumour composed predominantly of spindle cells, Antoni A and B areas and focal verocay bodies with

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evidence of degenerative changes, confirming the diagnosis of a schwannoma with ancient change.

2. Discussion

VATS resection of posterior mediastinal tumours has been widely reported as a viable alternative to an open procedure [1–3]. It has also been used in those tumours with intradural extension after a neurosurgical excision has been performed in the neural canal [1,2]. Thoracoscopy has also been used as an approach to the anterior thoracic spine with good outcomes [4,5].

Paravertebral neurogenic tumours are usually asymptomatic. In one of the bigger series by a group of Chinese surgeons, only 38 (27%) out of 143 patients had any
symptoms attributable to the mass. Symptoms when present, are usually due to neurovascular involvement or compression of adjoining structures. The histologic spectrum of these tumours is vast including schwannomas, ganglioneuromas, neurofibromas, and paragangliomas with schwannomas being the commonest in most series [3,6]. However, in the combined Chinese experience, half the patients had a neurofibroma and a little less than 25% of them had a schwannoma [2].

Our patient had an unusual presentation with unilateral anhydrosis affecting the left half of his face and left upper limb with a sensation of tingling and numbness of his left upper limb. These symptoms are akin to those developing after a sympathectomy. The likely cause for this would be the destruction of the sympathetic ganglion by the tumour. However, he did not have a full-blown picture of Horner's syndrome. He also had a strong family history. This presentation and family history are known but unusual in patients with posterior mediastinal paravertebral neurogenic tumours. He made a smooth recovery following VATS removal of the tumour. The procedure was uneventful and technically simple.

3. Conclusion

A young male patient presented with an unusual symptom of unilateral facial and upper limb anhydrosis due to a paravertebral schwannoma. We believe that VATS provides a very efficient and less invasive alternative to thoracotomy in such patients.

References