Thymic teratoma masquerading as a thyroid lump

WS Cho, R Sahota, F Tanweer, P Conboy

University Hospitals of Leicester NHS Trust, UK

ABSTRACT

Teratomas are germ cell tumours commonly found in the sacrococcygeal region, ovary, testicle or, infrequently, the mediastinum. In very rare circumstances, these tumours are found in the neck. This case represents a thymic teratoma presenting as what appeared to be an intrathyroid lesion. This has not been described previously and demonstrates an unusual presentation of a neck lump necessitating two operations and a multidisciplinary approach for management. We would also like to highlight that while patients undergo imaging to guide surgery, the surgeon must always be prepared for the unexpected and recognise situations where the operation should be converted to an exploratory procedure instead of full resection. Often, combined surgical care is the best option for difficult congenital cases.

KEYWORDS

Teratoma – Thymus gland – Thyroid gland

Accepted 29 July 2013; published online XXX

CORRESPONDENCE TO

Sam Cho, Core Surgical Trainee, Leicester Royal Infirmary, Infirmary Square, Leicester LE1 5WW UK
E: sam.cho08@gmail.com

Teratomas are germ cell tumours commonly found in the sacrococcygeal region, ovary, testicle or, infrequently, the mediastinum. In very rare circumstances, these tumours are found in the neck.¹ We report a case where a patient presented with an apparent thyroid mass that was a benign mature thymic teratoma.

Case History

A 24-year-old woman was referred to the otorhinolaryngology department for an asymptomatic neck lump. Physical examination detected a soft 4cm × 3cm swelling in the right thyroid region. Clinically, the mass was part of the lower pole of the thyroid gland and moved appropriately with swallowing. Thyroid function tests were normal while ultrasonography showed a cystic lesion of the right lower pole of the thyroid gland. Three ultrasonography guided fine needle aspirations were inconclusive (Thy1) and she also had radioactive technetium imaging, which showed a cold nodule in the right lower lobe of the thyroid (Fig 1). Following repeated inconclusive fine needle aspirations and, as hypofunctioning or 'cold' thyroid nodules are associated with higher malignancy rates than 'hot' nodules, she was offered a diagnostic hemithyroidectomy.

Primary operation

At surgery, we encountered a multicystic mass extending retrosternally and adherent to the thyroid, right carotid artery and the strap muscles. One of the cysts was filled with hair (Fig 2) while another was filled with brown fluid. Owing to the fixed nature of the mass, incisional biopsy

was performed with the wall of the cyst and fibrotic tissue encasing the common carotid artery sent for histology. Definitive surgery was postponed to await histology of the excised cyst to aid diagnosis and allow further radiological imaging with computed tomography (CT).

CT showed a large infiltrative ill defined predominately soft tissue density abnormality in the superior mediastinum extending into the lower pole of the right thyroid. There was no significant neck or mediastinal lymphadenopathy (Fig 3). The histological appearances were of fibroconnective tissue lined by keratinised squamous epithelium tissue with florid inflammatory infiltrate including multinucleated giant cells. The morphological appearance of the lesion was most likely that of a mature teratoma. Following discussion at the soft tissue cancer multidisciplinary team meeting, it was decided with the patient to proceed with full surgical excision as we could not rule out any immature areas of the teratoma that are associated with a much higher risk of malignancy.

Definitive operation

The tumour was completely excised with the assistance of the thoracic surgeons. The previous collar incision was reopened with further extension of the incision into the manubrium to perform a manubriotomy. The tumour was found to be part of the thymus gland and a full thymectomy was performed. There was extensive scar tissue around the tumour and it was attached to the superior vena cava, which made excision challenging. The patient had an uneventful postoperative recovery and was discharged from the hospital three days after the combined operation.

Figure 1 Radioactive technetium imaging reported as a 'cold' nodule in the lower lobe of right thyroid

The histology report confirmed appearances similar to the initial biopsies. The excised specimen measured 6.8cm × 5.4cm × 2.0cm, and was comprised of fibroconnective tissue with extensive areas of fat necrosis and fibrosis. Several cystic spaces were identified as devoid of any contents but in places lined by multinucleated giant cells and keratinised squamous epithelium, which contained hair shafts. Benign thymic tissue was identified in the excised specimen as well. Overall, the morphological appearance was that of a benign mature teratoma of the

Figure 2 Hair extracted from one of the cysts and around the neck

Figure 3 Axial computed tomography showing the mass (arrow), which was described as a 6.6cm × 7.5cm soft tissue density abnormality in the superior mediastinum with cystic appearances

thymus, which was completely excised with no immature elements seen.

Discussion

Cervical neck teratomas are rare and mediastinal teratomas extending into the neck are even rarer entities but are recognised.^{2,5} However, we describe a thymic teratoma presenting as what appeared to be an intrathyroid lesion, which has not been described previously.

This case demonstrates an unusual presentation of a neck lump necessitating a multidisciplinary approach for management. The limitations of imaging (including CT, magnetic resonance imaging and ultrasonography) have been documented, especially those due to the cystic nature of teratomas, which can lead to misdiagnoses.⁵ A benign teratoma in the neck densely adherent to surrounding structures (as encountered in our case) has been described previously although in that case, the mass was adherent to the trachea, great vessels and recurrent laryngeal nerve.⁴ It is also likely that the dense scar tissue observed in our case was secondary to one of its cysts bursting from a traumatic event (possibly, repeated fine needle aspiration attempts), causing a local inflammatory response. This inflammatory response also led to the local infiltrative component seen in the CT rather than a malignant process.

Conclusions

While patients undergo imaging to guide surgery, the surgeon must always be prepared for the unexpected and recognise situations where the operation should be converted to an exploratory procedure instead of full resection. Often, combined surgical care is the best option for difficult congenital cases.

References

1. Jordan RB, Gauderer MW. Cervical teratomas: an analysis. Literature review and proposed classification. *J Pediatr Surg* 1988; **23**: 583–591.
2. Hazama K, Miyoshi S, Ohta M, Matsuda H. Matured mediastinal teratoma extending into the cervical neck of an adult. *Interact Cardiovasc Thorac Surg* 2003; **2**: 265–267.
3. Bhutta MF, Ching HY, Hartley BE. Cervico-thoracic teratoma masquerading as lymphatic malformation. *J Laryngol Otol* 2006; **120**: 955–958.
4. Kuhel WI, Yagoda M, Peterson P. Benign cervical teratoma in the adult: report of a rare case with dense fibrosis involving adjacent vital structures. *Otolaryngol Head Neck Surg* 1996; **115**: 152–155.