Transcervical excision of a giant mediastinal parathyroid adenoma

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DESCRIPTION

A fit and active 53-year-old man was referred to his endocrinologist with incidentally identified hypercalcaemia (2.8 mmol/L) detected on routine blood tests. He reported a history of non-specific malaise and fatigue but no other symptoms. His history was only of surgery for a lumbar disc prolapse. Further laboratory tests revealed inappropriately raised parathyroid hormone (PTH) levels of 19 pmol/L, normal vitamin D levels and raised urinary calcium in keeping with a diagnosis of primary hyperparathyroidism. Imaging demonstrated an asymptomatic 8 mm left renal calculus and normal bone density.

Parathyroid localisation studies revealed an unremarkable neck ultrasound, but technetium sestamibi imaging demonstrated an unusual linear region of increased intensity to the left of the mediastinum (figure 1) with similar washout to thyroid tissue suggesting possible ectopic thyroid tissue. A CT thorax with contrast was performed and demonstrated a well-defined, bilobed, uniformly enhancing mass to the left of the oesophagus, extending from the suprasternal notch and descending in the posterior mediastinum to the level of the carina, consistent with a giant mediastinal parathyroid adenoma (figure 2).

The patient underwent surgical excision of the lesion via a transcervical approach alone where a normal left superior parathyroid gland was seen and a giant posteroinferiorly prolapsed inferior parathyroid adenoma was found. The left recurrent laryngeal nerve was adherent to the anterolateral aspect of much of the adenoma and was carefully dissected off its surface to allow complete intact removal of the tumour. The intraoperative PTH measurements

Figure 2 Axial and coronal CT thorax with contrast, demonstrating a well-defined, bilobed, uniformly enhancing mass in the posterior mediastinum to the left of the oesophagus, extending from the suprasternal notch to the level of the carina.

Figure 3 Macroscopic appearance of giant parathyroid adenoma excised at surgery.

Figure 1 Technetium sestamibi imaging demonstrating an abnormal increased linear intensity to the left of the mediastinum.

fell from 36 pmol/L pre-excision to 9 and 7 pmol/L at 5 and 10 min postexcision, respectively. Postoperative calcium and PTH levels normalised, and he was discharged the day after surgery. Outpatient follow-up showed a full recovery, normal postoperative laryngoscopy and normal biochemistry. Histological review of the specimen revealed an 80×30×30 mm, 30.9 g parathyroid adenoma with no features of atypia or malignancy (figure 3).

Giant (>3.5 g) mediastinal parathyroid adenomas are extremely rare entities, with published instances limited to a handful of case reports.^{1 2} They are predominantly located in the anterosuperior mediastinum and may require a range of surgical approaches including transcervical, thoracoscopic, median sternotomy and thoracotomy.³ The latter three approaches are often preferred in deeper set adenomas, although sternotomy and thoracotomy

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Images in...

have been shown to result in longer hospital stays and higher complication rates.

In our case, although deep set and posteroinferiorly prolapsed, the commencement of the adenoma in the anterosuperior mediastinum allowed for cautious stepwise retrieval via a transcervical approach. Inferior parathyroid glands normally descend into the anterior mediastinum. The case described is highly unusual in that owing to its size, much of this inferior adenoma prolapsed

into the posterior mediastinum, a feature that can be encountered in large non-thymic inferior parathyroid adenomas. To our knowledge, the case described represents the largest non-cystic mediastinal parathyroid adenoma to be excised via a transcervical approach and underlines the importance of keeping an open mind when excising large mediastinal parathyroid adenomas.

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Learning points

- ▶ Giant mediastinal parathyroid adenomas are a rare cause of primary hyperparathyroidism.
- ▶ Diagnosis rests on appropriate biochemistry and imaging including ultrasound, sestamibi but cross-sectional imaging of the neck and thorax may be required.
- ▶ A transcervical approach may be considered even in deep-set mediastinal adenomas extending from the superior mediastinum with a low threshold for conversion to more invasive approaches if required.

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