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Is 'lateral aberrant thyroid' always metastatic tumour?

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Abstract
It is now a widely held belief that so-called 'lateral aberrant thyroid' tissue actually represents a metastasis from a malignant tumour of the thyroid gland. A case is presented which suggests that this is not always true, and an extensive review of the relevant literature is discussed.

Introduction

Ever since the seminal paper by King and Pemberton (1942), it has been generally held that so-called 'lateral aberrant thyroid' tissue represents metastatic deposits of papillary adenocarcinoma of the thyroid in cervical lymph nodes. The following case demonstrates that this is not always true.

Case report

A previously fit 34-year-old woman presented with a four month history of a lump and a feeling of tightness in the left side of the neck. She denied dysphagia or respiratory difficulty. Examination revealed a bulky thyroid gland with a palpable mass 3 cm in diameter in the left lobe. No other masses were palpable. A full ENT examination was otherwise unremarkable and the recurrent laryngeal nerves were intact.

Investigations showed that she was biochemically euthyroid. An isotope scan (^{99m}Technetium) revealed an irregular cold area in the lower pole of the left thyroid lobe. An ultrasound scan confirmed a large nodule in the left lower pole, which was poorly defined, solid, and with a complex echo-texture suggestive of neoplasm.

Operation was undertaken via a collar incision. The whole left lobe of the thyroid gland was found to be enlarged with an obvious mass at the left lower pole. After identification and preservation of the recurrent laryngeal nerve, the left lobe and isthmus were removed. During this dissection, a further mass was identified within the lower part of the carotid sheath approximately 3 cm from the lateral border of the thyroid lobe. There was no evidence of a connection between this mass (which was dark blue in colour) and the thyroid. The macroscopic appearance more closely resembled thyroid tissue than a cervical lymph node. It was removed separately, and subjected to histological examination along with the thyroidectomy specimen. Post-operatively, the patient made an uneventful recovery with no evidence of recurrent laryngeal nerve injury.

Pathology

Two specimens were received (Fig. 1). The larger (approximately 5 × 3 × 2 cm and weighing 18 g) was a left lobe of thyroid containing a well-defined, partly cystic mass 2 cm across. The smaller was a discrete lobulated mass of thyroid tissue (approximately 3 × 2× 2 cm and weighing 13 g) which on section presented a coarsely nodular cut surface with areas of haemorrhage.

On histological examination both specimens were essentially similar (Figs. 2 & 3) and showed features consistent with nodular hyperplasia of the thyroid with a dominant nodule in the left lower pole. There was no evidence of malignancy, and no lymphoid tissue was found in either specimen.

Discussion

The presence of apparently aberrant deposits of thyroid tissue in the lateral part of the neck has been recognized since the early part of the 19th century (King and Pemberton, 1942). The prevailing view at that time was that they represented a persistent lateral thyroid anlage which had failed to fuse with the main body of the gland during development. At times they were recognized to be papillary tumours of thyroid tissue, but it was felt that they were primary tumours of aberrant thyroid tissue rather than secondary deposits from tumours of the thyroid proper (Barker, 1896). Low (1903) was the first to point out that lateral papillary thyroid tumours may be associated with similar lesions in the ipsilateral thyroid lobe. King and Pemberton (1942) then

Fig. 1

Macroscopic appearances of the cut surface of the left lobe of thyroid (left) and separate mass of thyroid tissue (right).

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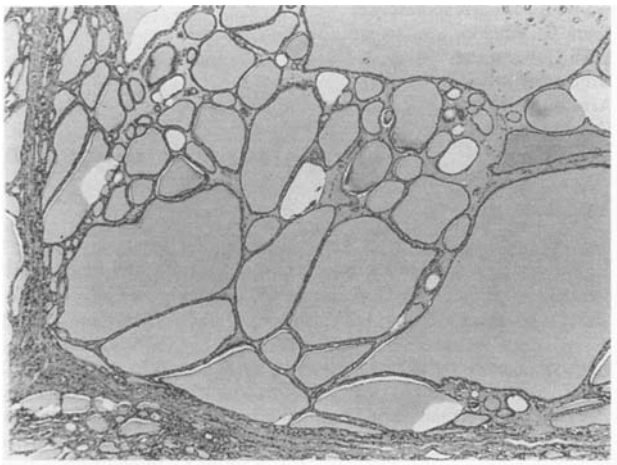

FIG. 2

Nodular hyperplasia (dominant nodule) left lobe of thyroid. H&E × 25.

showed that most 'lateral aberrant thyroids' were cervical lymph node metastases from primary thyroid tumours. The word 'most' in this description is important: 51 out of 54 cases they reported were found to be malignant, but the other three were simple benign thyroid nodules with no evidence of neoplasia.

Ectopic thyroid tissue usually occurs in the mid-line, anywhere from the tongue base to the mediastinum (Fish and Moore, 1963; Larochelle *et al.*, 1979) although occasional examples in the lateral part of the neck have been described (Rubenfeld *et al.*, 1988; Feinmesser *et al.*, 1990). Cases have been reported involving the larynx/trachea (Beeson, 1937; Waggoner, 1958; Bone *et al.*, 1972; Myers and Pantangco, 1975), the oesophagus (Whale 1921; Pôrto 1960), the mediastinum (Arriaga and Myers, 1988), the right cardiac ventricle (Doria *et al.*, 1989), and possibly the right lung apex (Simon and Baczako, 1989). Block *et al.* (1966) reported two cases very similar to the one we have described: both had lateral masses of nodular goitre buried deep within the carotid sheath, and no evidence of thyroid tumour. They speculated that these masses may indeed represent ectopic thyroid tissue: the developing gland is located very close to the carotid arteries, and a portion of it may remain 'stuck' to the vessels, becoming separated from the main thyroid mass during descent of the gland into the neck. Such lateral masses would then be exposed to the same physiological goitrogenic factors as the main gland. (The idea of a separately-derived lateral thyroid anlage failing to fuse with the main (medial) anlage has long been discredited (Larochelle *et al.*, 1979)).

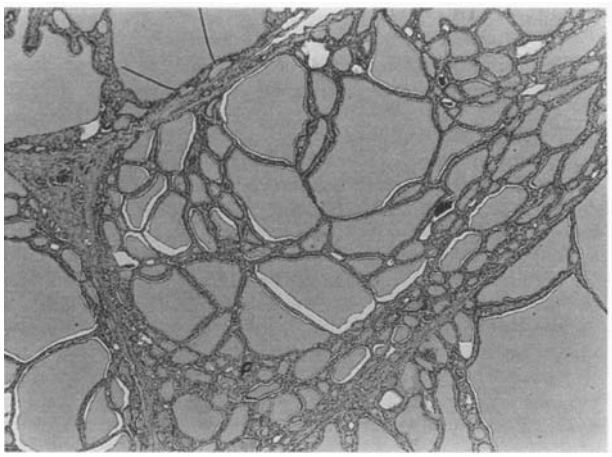

FIG. 3

Nodular hyperplasia, lateral aberrant thyroid tissue. H&E × 25.

Other cases (Sisson *et al.*, 1964) similar to ours have been reported, and described as 'sequestered nodular goitre': the lateral mass of nodular thyroid tissue is thought to be derived from a projecting nodule from a diffusely nodular thyroid gland which is sheared off by movements of the neck muscles. It has also been suggested that benign thyroid tissue may 'metastasise' to cervical lymph nodes (Gerard-Marchant, 1964; Nicastri *et al.*, 1965) though other authors maintain that these deposits represent metastases from an occult sclerosing thyroid carcinoma (Reed *et al.*, 1966).

Conclusion

A mass of thyroid tissue lateral to the gland proper is not necessarily a secondary tumour. The aetiology of benign lateral thyroid masses is unclear, as neither the embryological origin nor the sequestration theory described above are particularly attractive. If such a mass is discovered unexpectedly at surgery, it may be worthwhile postponing a decision on radical surgery for a supposed thyroid carcinoma until histological findings are known: in one series of 'sequestered nodular goitre' where radical surgery was employed (Sisson *et al.*, 1964) significant complications (hypoparathyroidism or recurrent nerve palsy) occurred in two out of four cases.

References

Arriaga, M. A., Myers, E. N. (1988) Ectopic thyroid tissue in the retroesophageal superior mediastinum. *Otolaryngology—Head and Neck Surgery,* **99:** 338–340.

Barker, A. E. (1896) Sequel of a case of cystic accessory thyroid body. *Transactions of the Pathological Society of London,* **47:** 225–229.

Beeson, H. B. (1937) Aberrant goitre—with report of an instance of intralaryngeal thyroid tumour. *Archives of Otolaryngology,* **25:** 447–454.

Block, M. A., Wylie, J. H., Patton, R. B., Miller, J. M. (1966) Does benign thyroid tissue occur in the lateral part of the neck? *American Journal of Surgery,* **112:** 476–481.

Bone, R. C., Biller, H. F., Irwin, T. M. (1972) Intralaryngotracheal thyroid. *Annals of Otology, Rhinology, and Laryngology,* **81:** 424–428.

Doria, E., Agostoni, P., Fiorentini, C. (1989) Accessory thyroid tissue in the right ventricle. *Chest,* **96:** 424–425.

Feinmesser, R., Smith, O., Mullen, B., Freeman, J. (1990) Aberrant thyroid in the lateral neck. *Ear, Nose and Throat Journal,* **69:** 769–770.

Fish, J., Moore, R. M. (1963) Ectopic thyroid tissue and ectopic thyroid carcinoma: A review of the literature and report of a case. *Annals of Surgery,* **157:** 121–222.

Gerard-Marchant, R. (1964) Thyroid follicle inclusions in cervical lymph nodes. *Archives of Pathology,* **77:** 633–637.

King, W. L. M., Pemberton, J. de J. (1942) So called lateral aberrant thyroid tumours. *Surgery, Gynecology and Obstetrics,* **74:** 991–1001.

Larochelle, D., Arcand, P., Belzile, M., Gagnon, N. B. (1979) Ectopic thyroid tissue—A review of the literature. *Journal of Otolaryngology,* **8:** 523–530.

Low, H. C. (1903) Papillary adenocystoma of the thyroid and accessory thyroid glands. *Boston Medical and Surgical Journal,* **149:** 616–623.

Nicastri, A. D., Foote, F. W., Frazell, E. L. (1965) Benign thyroid inclusions in cervical lymph nodes. *Journal of the American Medical Association,* **194:** 113–116.

Myers, E. N., Pantangco, I. P. (1975) Intratracheal thyroid. *Laryngoscope,* **85:** 1833–1840.

Pôrto, G. (1960) Esophageal nodule of thyroid tissue. *Laryngoscope,* **70:** 1336–1338.

Reed, R. J., Russin, D. J., Krementz, E. T. (1966) Latent metastases from occult sclerosing carcinoma of the thyroid. *Journal of the American Medical Association,* **196:** 143–145.

Rubenfeld, S., Joseph, U. A., Schwartz, M. R., Weber, S. C., Jhingran, S. G. (1988) Ectopic thyroid in the right carotid triangle. *Archives of Otolaryngology Head and Neck Surgery,* **114:** 913–915.

Simon, M., Baczako, K. (1989) Thyroid inclusion in the lung. Meta-

stasis of an occult papillary carcinoma or ectopia? *Pathology Research and Practise*, **184:** 263–267.
Sisson, J. C., Schmidt, R. W., Beierwaltes, W. H. (1964) Sequestered nodular goitre. *New England Journal of Medicine*, **270:** 927–932.
Waggoner, L. G. (1958) Intralaryngeal intratracheal thyroid. *Annals of Otology, Rhinology, and Laryngology*, **67:** 61–71.
Whale, H. L. (1921) Oesophageal tumour of thyroid tissue. *British Medical Journal*, **2:** 987.

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