

The importance of thyroid scanning in neck lumps - a case report of ectopic tissue in the right submandibular region

N. J. MORGAN, M.Sc., F.R.C.S., Ed.(ORL), P. EMBERTON, F.R.C.R.*, R. P. E. BARTON, F.R.C.S.

Abstract

We describe the case of a 50-year-old previously well female, who presented with a slowly growing mass in the right submandibular region. Imaging confirmed the absence of a normally placed thyroid and the presence of a lingual thyroid. The submandibular mass was excised and histological examination confirmed ectopic thyroid tissue. The embryological descent of the thyroid and the Sistrunk procedure are discussed as well as the importance of thyroid scanning in neck lumps.

Key words: Head and neck neoplasms; Thyroid gland, ectopic; Radionuclide imaging

Introduction

Thyroglossal duct lesions and submandibular swellings are commonly presented to otolaryngologists. In most cases they are quite separate entities, thyroglossal duct lesions being midline and submandibular lesions lateral. Our case shows that in rare cases this is not true, and thyroglossal duct lesions can present laterally.

The standard management of both thyroglossal duct lesions and submandibular swellings is excision if appropriate. Thyroid scanning is not considered to be relevant in submandibular swellings (Maran, 1987a; Shaheen, 1987). Thyroglossal duct lesions however, are known to contain functioning thyroid tissue, and this may be the only functioning thyroid tissue in the patient. For thyroglossal duct lesions it is suggested that thyroid scanning should be considered (Maran, 1987b). Our case shows that occasionally thyroid scanning should also be considered for submandibular swellings.

Case report

Our patient presented with a one-year history of a painless swelling in the right submandibular region which had gradually increased in size during that time. The history was otherwise unremarkable and, in particular there was no change in her voice and she did not have problems with swallowing. The mass moved on tongue protrusion. The larynx was normal including vocal fold movement.

A clinical diagnosis of a thyroglossal tract lesion was made. Plain radiography demonstrated a soft tissue mass in



FIG. 1

CT showing the absence of thyroid in the normal position (arrow).



FIG. 2

CT showing the mass in the submandibular area (arrow).

From the Departments of Otolaryngology and Radiology*, Leicester Royal Infirmary, Leicester.
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FIG. 3

CT showing the enhanced area in the tongue base (arrow).

the upper right side of the neck. Ultrasound examination demonstrated absence of any thyroid gland in the normal site, and a 5 cm, well defined, mass of mixed echogenicity

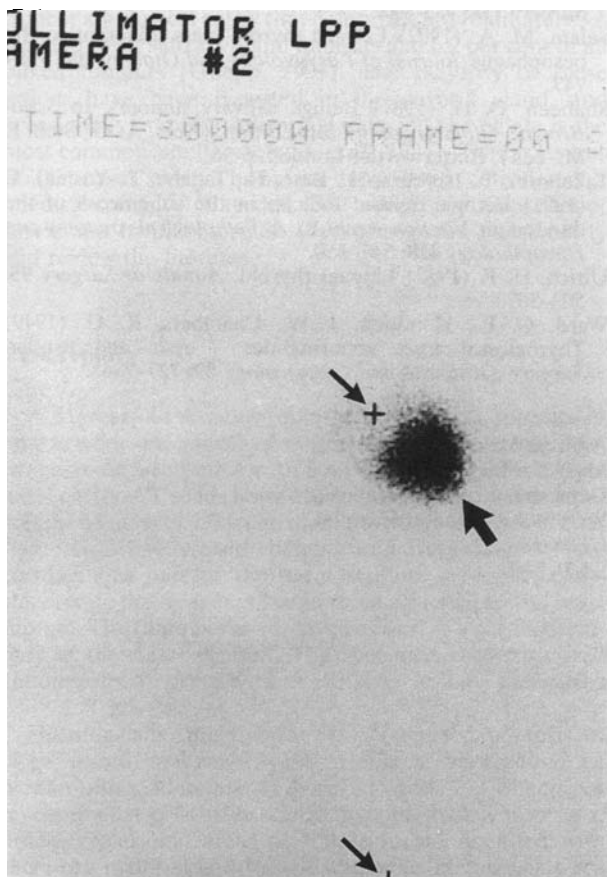


FIG. 4

Radioiodine scan showing uptake in the region of the mass and tongue base (large arrow). No uptake in the lower neck. (Upper small arrow marks position of chin, lower the sternal notch.)

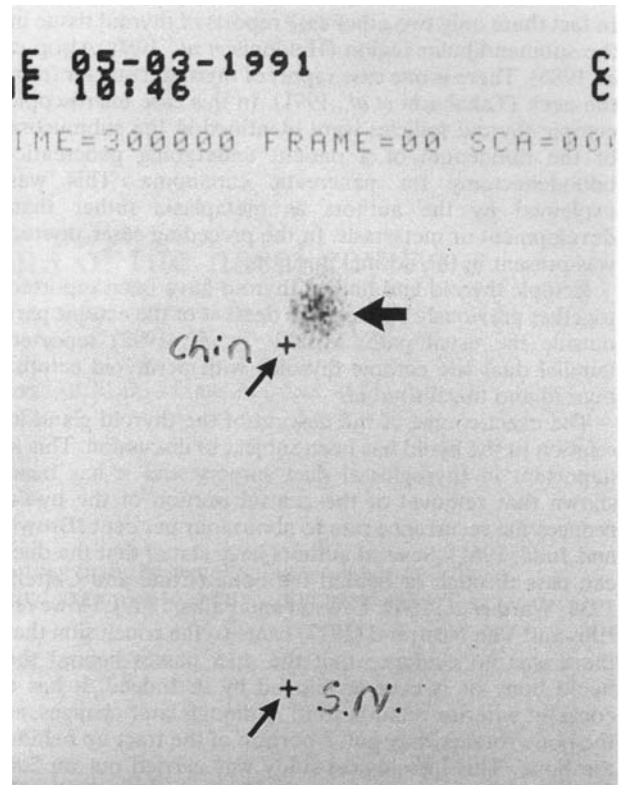


FIG. 5

Post-operative radioiodine scan showing persistent uptake in the tongue base (large arrow). (Upper small arrow marks position of chin, lower the sternal notch.)

in the right submandibular region. No adenopathy could be found. Dynamic CT with contrast also confirmed the absence of a normally sited thyroid (Figure 1). The anatomical position of the mass was better defined by CT and the absence of nodes confirmed (Figure 2). A 1 cm uniformly enhanced area was noted in the tongue base (Figure 3) and a lingual thyroid was postulated. This was confirmed by radioiodine scan which showed uptake only in the base of the tongue and the site of the submandibular mass (Figure 4).

The submandibular mass was excised. Histological examination confirmed that the tissue was ectopic multinodular goitre. Post-operative radioiodine scanning confirmed the persistence of the area of uptake in the base of the tongue (Figure 5). However subsequently the patient developed hypothyroidism.

Discussion

Ectopic multinodular goitre is uncommon. Lingual thyroid is also uncommon but well recognized. Lahey (1923) found two cases of lingual thyroid in a series of 7800 at the Mayo Clinic; Ulrich (1932) one case in 4000. The embryological descent of the thyroid gland from the tongue base to its position in the neck is well known. To our knowledge no one has reported ectopic multinodular goitre and a lingual thyroid in the same patient. This ectopic site is outside the normal path of thyroid descent. The presence of the lingual thyroid as well might suggest that the thyroid had never descended during development.

There are several other reports of ectopic thyroid tissue away from the path of descent. Most are reported in the neck; intratracheal (Al-Hajjaj, 1991; Ogden and Goldstraw, 1991), upper oesophagus (Salam, 1992) and, as in this case, the submandibular region (Aguirre *et al.*, 1991).

In fact there only two other case reports of thyroid tissue in the submandibular region (Heldonis *et al.*, 1980; Alsop *et al.*, 1986). There is one case report of thyroid tissue far from the neck (Takahashi *et al.*, 1991). In this case microscopic ectopic thyroid follicles were identified in the submucosa of the duodenum of a patient undergoing pancreaticoduodenectomy for pancreatic carcinoma. This was explained by the authors as metaplasia rather than development or metastasis. In the preceding cases thyroid was present in the normal position.

Ectopic thyroid and lingual thyroid have been reported together previously but not with descent of the ectopic part outside the usual path. Misaki *et al.* (1992) reported familial dual site ectopic thyroids with perihyoid ectopic thyroid and lingual thyroid.

The exact course of the descent of the thyroid gland in relation to the hyoid has been subject to discussion. This is important in thyroglossal duct surgery and it has been shown that removal of the central portion of the hyoid reduces the recurrence rate to about four per cent (Brown and Judd, 1961). Several authors have stated that the duct can pass through or behind the bone (Clute and Cattell, 1930; Ward *et al.*, 1949; Lawson and Fallis, 1969). However Ellis and Van Nostrand (1977) came to the conclusion that there was no evidence that the duct passes behind the hyoid bone or is ever enveloped by it. Indeed, it has a constant anterior relation to it. Although later changes, as the bone rotates, may pull a portion of the tract up behind the bone. This histological study was carried out on 200 adult larynxes, 30 embryos and 20 surgical specimens of cysts and fistulae. Thus, it is presumably possible to remove all the duct remnants without excising a portion of the bone provided the tissue behind is removed.

In our case ultrasound scan only was performed because the mass moved on tongue protrusion. Further imaging was undertaken as it became clear that ectopic thyroid tissue was a possibility. This demonstrates the high index of suspicion that is necessary and value of investigations when dealing with neck lumps. A recent survey in the American literature showed that pre-operative scanning was not requested by a considerable proportion of surgeons in presumed thyroglossal duct cysts whilst 28 per cent of paediatric surgeons and 65 per cent of paediatric otolaryngologists routinely ordered scans in this situation (Pinczower *et al.*, 1992).

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Address for correspondence:
Mr N. J. Morgan, F.R.C.S.,
Department of Otolaryngology,
West Wales General Hospital,
Carmarthen,
SA31 2AF.