ISOLATED MIDLINE THYROID IN THE THYROGLOSSAL DUCT

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Isolated midline thyroid nodules may be confused with thyroglossal duct cysts and excised with resulting myxedema. An awareness of the possibility of this congenital anomaly may prevent such an error. The following case report is offered as an example of this condition and as a reminder of the potential hazard involved in the removal of a midline nodule in the neck.

CASE REPORT

A healthy 6-year-old Negro girl was admitted on the Halsted Surgical Service for the removal of a midline cervical nodule present since birth. This mass had retained its relative size with the child's growth, had never been infected, and had never drained. Because of the cosmetic deformity she was admitted for elective excision. A round, rubbery, smooth, midline mass one inch in diameter was noted immediately below the hyoid bone to which it was loosely adherent (Fig. 1, A and B). It was nontender. It was not attached to the overlying skin or subcutaneous tissue and moved slightly upward when the tongue was extruded. There was no palpable mass at the base of the tongue. The patient was considered to have a typical uninfected thyroglossal duct cyst.

Under endotracheal ether anesthesia a 2-inch transverse incision was made overlying the mass which was exposed beneath the anterior cervical fascia. The mass was grayish red with several dilated veins emerging from each lateral surface. Because of its consistency and unusually rich blood supply, the nodule was thought to be the superior portion of the pyramidal lobe of the thyroid. The strap muscles were retracted to visualize the normal thyroid lobes, but no thyroid tissue was present in either lateral fossa. When it became apparent that the mass represented the total thyroid tissue, it was carefully elevated from the trachea and the bilateral superior thyroid vascular pedicles were identified and mobilized laterally (Fig. 1, C). The mass was then bisected in the midline, several bleeding points were suture ligated, and the two halves were inserted into the lateral thyroid fossae, which had been deepened by stretching the overlying strap muscles (Fig. 2). The wound was then closed with fine silk. Histologic examination of the biopsy taken from the mass showed normal thyroid tissue. The patient was discharged from the hospital the following day and continued an uneventful recovery. Six months following operation there was no evidence of hypothyroidism and a very satisfactory cosmetic result was noted (Fig. 1, D and E).

DISCUSSION

In the 105 cases of thyroglossal tract anomalies reviewed by Ward and associates, only 6 contained fragments of thyroid tissue. One intralingual cyst apparently contained all of the patient's thyroid gland, for after removal the 14-year-old boy was myxedematous and continues to require thyroid extract 21 years after the cyst excision. Gross reported a series of 198 cases of

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Fig. 1.—A and B, Preoperative photographs of patient with midline cervical nodule. C, Operative photograph of biopsy proved isolated midline thyroid. D, and E, Postoperative photographs of patient at 6 month follow-up visit.

Fig. 2.—Diagrams of anatomic relationships and method of bisection of thyroid mass with bilateral implantation.
thyroglossal duct excision, in one of which the excised mass apparently represented the only thyroid tissue in the patient. This patient also became myxedematous following excision and still requires thyroid extract. Gross has had two more recent cases of midline thyroid nodules, which were fortunately recognized as such and handled in a manner similar to the case reported here.\(^1\) In his further comments on these 3 cases Gross emphasized the necessity of aspirating or biopsying the atypical nodule and, if thyroid tissue is present, carefully exploring the lateral fossae before excision.

The embryology of the thyroid gland and its descent through the neck is well-known, but a failure of normal lateral lobe formation when the medial thyroid anlagen fail to descend is not constant and not well understood.\(^2\) This failure of descent from the foramen cecum level, which may result in a lingual thyroid, does not exclude the presence of normal lateral lobes, but the high incidence of myxedema following removal of lingual thyroid tissue suggests that normal lateral thyroid tissue is rarely found. Thus patients with large lingual thyroid glands must be considered to have no thyroid present in the normal neck position.\(^3\) Many such cases of midline lingual thyroid have been reported and every attempt has been made to preserve this tissue unless its bulk produced obstruction in the hypopharynx or ulceration resulted in serious hemorrhage. Location of the thyroid gland in the position of a thyroglossal duct cyst in this child is similar to the cases of lingual thyroid in that there was no identifiable lateral gland and myxedema would have resulted had its true nature not been recognized and the tissue preserved.

CONCLUSION

Isolated midline thyroid tissue may occur anywhere between the base of the tongue and the supra-ternal notch. It is usually confused with a thyroglossal duct cyst or benign tumor and is excised. The resulting myxedema is an emphatic but belated reminder of the necessity for careful identification of both thyroid lobes prior to removal of any such atypical cervical mass.

The problem has been illustrated by several cases from reported series of thyroglossal duct excisions in which myxedema developed following mistaken removal of the sole thyroid tissue in the position of a thyroglossal duct cyst. The proper handling of this problem is exemplified by this little patient in whom the midline thyroid tissue was split and each half with its vascular pedicle was inserted in a recess developed beneath the strap muscles.

REFERENCES