Aberrant Thyroid in the Parapharyngeal Space

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ABSTRACT

Introduction: Aberrant thyroid is a mass of tissue having the structure of a normal or pathological thyroid gland and situated at some definite distance from normal thyroid, with which it has no connection. The prevalence of ectopic thyroid is 1 case per 100,000-300,000 persons1 and the incidence of aberrant thyroid in parapharyngeal space is even rarer.

Materials and Methods: A rare case of aberrant thyroid in parapharyngeal space is reported, which presented as oropharyngeal mass and dysphagia. She also had thyroid gland in the usual position.

Result: She was managed surgically with transcervical approach and was euthyroid postoperatively.

Conclusion: Aberrant thyroid should be one of the differential diagnoses for parapharyngeal space masses.

Keywords: Thyroid Dysgenesis; Neck

Parapharyngeal space is a potential space and the lesions here usually arise from anatomical structures within. The pre-styloidspace lesions frequently arise from salivary gland and almost always arise from the deep lobe of parotid.

The post-styloid space lesions are commonly neurogenic in origin and the most common ones are paraganglioma, schwannoma and neurofibroma. Aberrant means “wandering,” and thyroid tissue anywherein the body outside the thyroid gland can be called aberrant. We present an unusual case of parapharyngeal lesion, i.e. an aberrant thyroid in the presence of a normal functioning thyroid gland, which is extremely rare.

Case report

A 35-year-old female presented with a slowly progressive, painless swelling in the oropharynx since two years. There was associated bilateral nasal obstruction, more in the right side and dysphagia since last one year. There was no history of heat intolerance, palpitations, excessive sweating or anxiety. There was no family history of thyroid disorders or malignancies. On examination, she was comfortable, and no stridor was observed. There was a firm, non tender mass in the oropharynx pushing the right tonsil medially and extending into posterior pharyngeal wall (Fig. 1). There was no obvious swelling in the neck.

Blood investigations, which included a full blood count, renal profile and random blood glucose, were normal. Magnetic resonance (MR) imaging of the neck and thorax showed a heterogeneous mass with few cystic areas, fat components and calcifications involving the right parapharyngeal space. The mass measured 50 x 30 x 75 mm extending from clivus to C5 vertebral body, obliterating the nasopharynx and extending up to the oropharynx (Fig. 2). The left parapharyngeal space was clear. It also showed thyroid in the normal site with few
specks of coarse calcification and few hypodense areas. Following admission, fine-needle aspiration cytology was performed. Histology showed mainly thyroid follicular cells arranged in mononuclear sheets, clusters and in follicles with background of hemosiderin laden macrophages. The thyroid function test performed preoperatively was within normal range.

A transcervical excision of the tumour was performed to remove the tumour in toto from the right parapharyngeal space (Fig. 3). Jugulo-digastric lymph node was sampled. Histological diagnosis of the tumour mass showed normal thyroid follicles lined by cuboidal epithelium and filled with colloid. There was no evidence of malignancy. The enlarged lymph nodes showed reactive lymphadenitis. Postoperative thyroid function, after one week of surgery was within normal limits.

Discussion

Thyroid follicular cells are derived from both a median thyroid and a lateral thyroid bud. These lateral thyroid anlagens are derived from the ultimo-branchial body, a descending diverticulum of the fourth pharyngeal pouch. Aberratn thyroid tissues found in the lateral
Case Report

Neck regions could originate from defective lateral thyroid components, which fail to migrate and fuse with the median thyroid anlage. This failure could lead to the ectopia of the lateral anlage in such unusual sites like parapharyngeal space. The existence of the lateral thyroid anlagen has been a topic of controversy, but its existence may explain the occurrence of non-midline ectopic thyroid tissue in the neck. Many researchers have described that gene of transcription factors TITF-1 (Nkx2-1), Foxe1 (TITF-2) and PAX-8 are essential for thyroid morphogenesis and differentiation. Mutation in these genes may be involved in abnormal migration of the thyroid resulting in ectopic and aberrant thyroid.

These lateral aberrant groups of cells which fail to meet the thyroid proper later become activated and may give rise to tumours. Seventy percent of these aberrant thyroids give rise to neoplasms of papillary type. The other lesions are papillary adenocarcinoma, epithelioma, and alveolar carcinoma. The tumor is usually slow-growing and subject to involutional changes such as cystic degeneration hemorrhage and calcification. A well-defined capsule is usually present. They may undergo malignant changes and give rise to metastases. Such cases of lateral aberrant thyroid malignancies were previously reported by Johnson and Saha. To our knowledge, we are aware of only four published reports of ectopic thyroid in the pharynx.

This patient had an ectopic parapharyngeal thyroid gland in the presence of a normal functioning thyroid. Her main presenting complaint had been a mass in the oropharynx, which was slowly increasing in size over two years. She also developed bilateral nasal obstruction and dysphagia since one year. Following complete excision, no further intervention was planned as the tumour was proved to be benign thyroid tissue by histopathological examination and she was euthyroid on subsequent thyroid function tests. It is important to exclude malignancy because a differential diagnosis of lateral aberrant thyroid is metastasis from a primary thyroid carcinoma. The treatment of ectopic thyroid depends on its location, size and on the presence of symptoms or complications. For a nonfunctioning ectopic thyroid in the presence of a normal thyroid gland, the indication for surgery depends on the patient’s symptoms. Surgical excision was warranted in this patient as the mass effect by the tumour caused nasal obstruction and dysphagia. The transcervical approach to the tumour in this case allowed the surgeons a wider access to post styloid compartment of parapharyngeal region for complete excision of the tumour mass. The surgical team was ready for an extended transmandibular approach if needed. Postoperatively, the histopathology reported no evidence of malignancy and the patient was biochemically euthyroid, thus rendering no further intervention. Thus, an aberrant thyroid should be considered in the differential diagnoses of parapharyngeal neoplasm.

Conclusion

Aberrant thyroid in the parapharyngeal space is a rare disease. Although the cause is not fully known, genetic factors is thought to play an important role in such cases. The majority are asymptomatic; however, symptoms related to tumour size and location may develop. MRI imaging, Fine Needle Aspiration cytology and thyroid function tests are the main diagnostic tools. Surgical excision is the treatment of choice in symptomatic cases, with a role for radioiodine ablation only in recurrent disease. The clinician should always take into account the potential of this rare entity while dealing with parapharyngeal masses.

References

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