CASE REPORT

An Ectopic Thyroid Tissue - Parapharyngeal Region: A Rare Entity - Case Report

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Abstract:

An ectopic thyroid encompasses a rare entity due to the defective embryological development and descent of the gland originating from the primitive foregut's floor to its terminal pre-tracheal location. Its prevalence is about 1 per 100000-300000 people but actual incidence is unknown, as it is usually asymptomatic and discovered as an incidental finding and has the potential to be under diagnosed. However the non-midline location is rare. Ectopic thyroid in the retropharyngeal space is extremely rare. An ectopic thyroid must always be suspected and considered in the approach as well as in the differentiation of a mass in the parapharyngeal region. Its diagnosis is usually made with fine needle aspiration cytology with histopathological confirmation.

Keywords: Ectopic Thyroid, Neck Mass, Parapharyngeal Mass, Thyroid Gland

Introduction:

Most lesions in the parapharyngeal space originate from the anatomical structures situated within it. Based on the cases reported in literature most of the prestyloidal space lesions are the salivary gland neoplasms, on the other hand many of the poststyloidal space lesions are neurogenic in origin. Only few cases are reported in literature with ectopic thyroid in parapharyngeal region [1, 2]. In spite of its rare location we should be aware of a potential anomalous development in the parapharyngeal space. We hereby present a peculiar case of an aberrant parapharyngeal mass which turned out to be an ectopic thyroid tissue with a functioning thyroid gland at its normal anatomical location.

Case Report:

A 32 year old woman presented with sleep apnoea, nasal obstruction, dysphagia more for solid foods and obstructive symptom in the oropharyngeal region since two years. Her symptoms were slowly progressive and the swelling increased gradually over the years. There were no other constitutional symptoms or symptoms associated with hyperthyroidism. She was apparently well with no other medical ailments. She didn't had any significant family history of thyroid ailments or malignancies.

On examination - A firm swelling measuring 6.5x5x2.5cm noted in the right side of the oropharynx which was non tender and immobile. The soft palate was pushed anteriorly and also the right pharyngeal wall was displaced medially. There were no palpable lymphnodes in the adjoining region. The routine investigations conducted namely complete blood count, random blood glucose, renal function test and thyroid profiles were within normal limits.

Ultrasonographic (USG) analysis of the neck exhibited a heterogenous intensity mass in the parapharyngeal region with few cystic areas. Magnetic Resonance Imaging (MRI) of the neck

revealed a 50 x 30x 75 mm sized heterogenous intensity mass lesion with few cystic areas in the parapharyngeal space.

Supero-inferiorly the lesion extended from the clivus of the C5 vertebral body. Anteriorly the lateral pterygoid muscle was displaced with obliteration of the nasopharynx and extended upto the oropharynx. The carotid vessels were displaced posterolaterally. A normal- looking thyroid was revealed by MRI and USG studies at the pretracheal space.

On admission, Fine Needle Aspiration Cytology (FNAC) was done intraorally and smears showed moderate cellularity comprised of follicular cells arranged in monolayered sheets, clusters and in follicles. These follicles showed mild nuclear atypia. Also noted moderate amount of colloid in a haemorrhagic background, diagnosed as ectopic thyroid tissue.

Tracheostomy was performed with excision of the parapharyngeal mass through transcervical approach. Grossly an encapsulated mass with elastic consistency measuring 6.5x5x2.5cm was noted. The cut section appeared to be pale pink to yellow, solid with focal areas of haemorrhage.

Histopathological study of the tumour mass showed structure of thyroid parenchyma comprised of thyroid follicles of varying size which are lined by cuboidal epithelium filled with thin colloid. It was histopathologically confirmed as ectopic thyroid tissue.

Fig. 1: Mass Visualised on Oral Cavity Examination

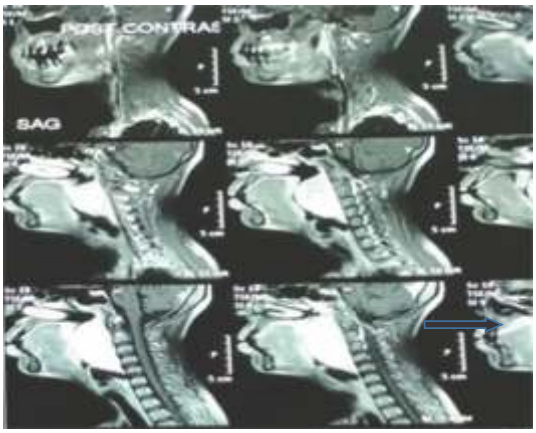

Fig. 2: Parapharyngeal Space Ectopic Thyroid Tissue Illustrated by Arrows shown by Sagittal T1-W MR Image

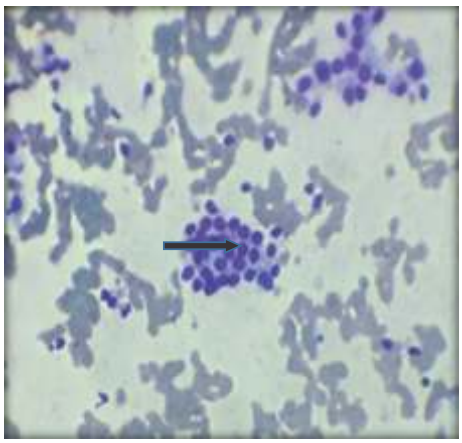

Fig. 3: FNAC Smears showed Moderate Cellularity Comprised of Follicular Cells Arranged in Monolayered Sheets and Clusters

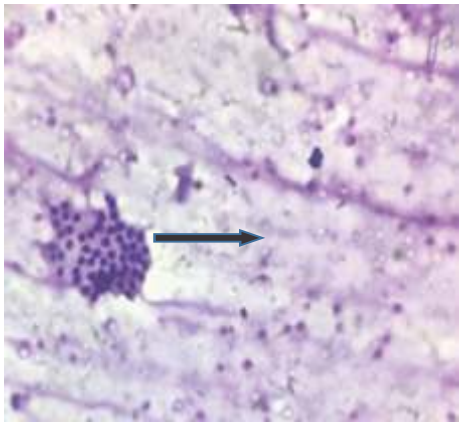

Fig. 4: FNAC Smear showed Follicular Cells with Colloid in the Background Depicted by Arrow (MGG)

Fig. 5: Capsulated Globular Mass Measuring 6.5x5x2.5cm with An Elastic Consistency

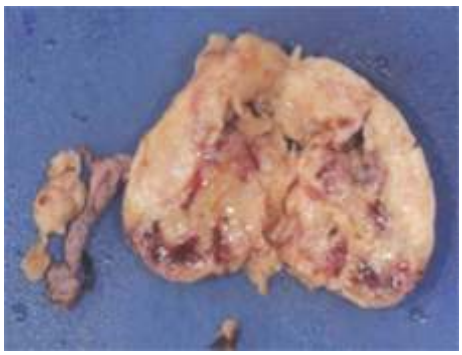

Fig. 6: Cut Section of the Mass was Solid and Pale Pink

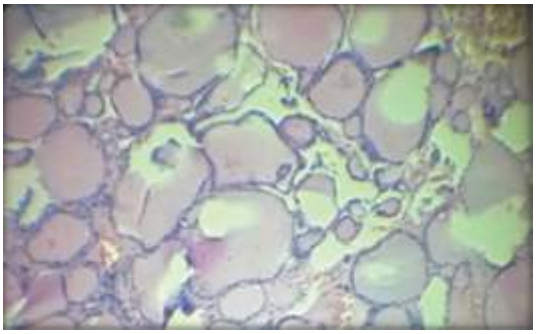

Fig. 7 (A): Thyroid Tissue Comprised of Varying Size Thyroid Follicles Filled with Colloid Lined by Cuboidal Epithelium. H & E Stain 10 x Magnification

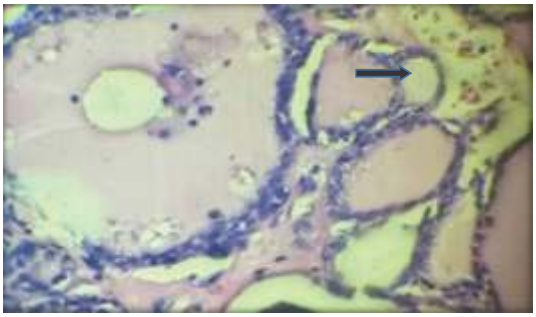

Fig. 7(B): Dilated Thyroid Follicle Filled with Colloid and Hemosiderin Laden Macrophages Depicted by Arrow. H & E Stain 40x Magnification

Discussion:

Ectopia of the thyroid gland is a rarely encountered developmental anomaly. It is associated with the embryological defect of the thyroid anlage during its migrational process from the floor of primitive fore gut to its normal pretracheal position [1, 2]. The prevalence accounts for 1 per 100000-300000 people with an actual unknown incidence as it is asymptomatic and encountered as an incidental finding [1-4].

The term ectopia should be differentiated from other similar terms like choristoma, hamartoma and teratoma. Choristoma is a mass of

histologically normal tissue in an abnormal location. Hamartoma is a disorganised mass of normal tissue in a location which is indigenous to the site of origin and teratoma is a tumor comprising of one or more of the three germinal layers [5].

The prevalence of thyroid ectopias is seen in populations of Asian origin with a slight female sex predilection. The age group ranges from 5 months to 40 years, however it frequently occurs in younger age groups [1]. Out of the several ectopic sites for the thyroid tissue, the majority of the cases are of the sublingual position (80-90%). Rare sites are suprahyoid, infrahyoid, thyroglossal duct (5%).

Sites in the aerodigestive tract like retropharyngeal space, oropharynx, tonsil, tracheal, esophageal sites accounts for only 1% [1, 6]. During its embryological, migration the thyroid gland is affixed to the foramen cecum by the thyroglossal duct which is a narrow tube like structure and eventually obliterates and vanishes normally. During its morphogenesis a pair of two anlagens comes into play, one for each lobe. These two lateral anlagens later merges with the median anlagen of the thyroid, rendering a minute portion of the parenchyma of the thyroid tissue [1-7].

Nevertheless, the concept of the lateral thyroid anlagen and its association with the existence of the ectopic thyroid tissue in a non midline location is still a controversial topic.

Parapharyngeal Space (PPS) is a potential anatomical region shaped as an inverted pyramid, extending from the skull base up to the hyoid bone. Medially it is limited by the buccopharyngeal fascia, medial pterygoid process of sphenoid bone, medial part of pterygoid, parotid gland and posterior belly of digastric muscle forming the lateral boundary. The pterygo-mandibular raphe and pterygoid fascia forms the anterior boundary and posteriorly limited by the cervical prevertebral muscles [8, 9].

The PPS and its association with the first branchial cleft in its embryogenesis can be considered as pathway of the descent of the lateral thyroid anlagen [8-10].

In this case, the patient had a parapharyngeal ectopic thyroids as well as normally functioning thyroid gland at the normal anatomical location. The investigation protocol included USG, MRI of the neck region, FNAC of the mass, thyroid function test, complete blood counts. Following complete excision of the mass histopathological study of the mass was performed which revealed a non neoplastic thyroid tissue. However it is of atmost importance to exclude a malignant lesion because of the possibility of metastasis from a primary thyroid carcinoma in the lateral aberrant thyroid. Ectopic thyroid management solely depends on its exact site of location, size and the associated symptoms and complications due to its mass effect. The patient symptoms are the most important criteria in the treatment of a nonfunctioning thyroid ectopia case along with of a normal thyroid gland. Here in our case the mass was surgically excised mostly due to the aggravating effect of the mass causing dysphagia to the patient.

Conclusion:

Defective development in the embryogenesis of the thyroid leads to the generation of an ectopic thyroid tissue, at any site and along the pathway of its embryological descent. Even though a parapharyngeal ectopic thyroid is rare, it should always be considered as differential of a parapharyngeal mass as highlighted by this current case.

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