Unusual presentations of thyroid malignancies – a case series

G. Raju · Mohan Kameswaran

Abstract Unusual presentations of thyroid neoplasms have been reported from time to time. Four such cases of bizarre presentations of thyroid malignancies seen in the ENT Department of ESIC Hospital, K.K. Nagar, Chennai, India are presented. These cases highlight certain important issues concerning the diagnosis and management. A review of the literature on the subject is discussed.

Keywords Carcinoma, Papillary · Carcinoma, Anaplastic · Riedel's thyroiditis · Paucicellular variant · Carcinoma, Adenoid cystic · Lingual thyroid · Trachea

Introduction

Patients with thyroid malignancies present in one or more of the following ways: as a solitary nodule, enlargement of an existing nodule, cervical lymph node metastases, vocal cord palsy and pressure effects on the trachea and esophagus. Malignancies arising from ectopic thyroid tissue found along thyroglossal tract, lateral cervical regions, branchial cyst, trachea and myocardium have been reported in the literature [3, 6, 7, 9, 10, 16]. Four such unusual case scenarios are presented.

Case 1

A 57-year-old woman presented with complaints of change of voice and dysphagia for 4 months and difficulty in breathing for 15 days. Examination showed a firm mass in the midline from the level of the 2nd tracheal ring extending below the suprasternal notch. Few small lymph nodes were palpable in the posterior triangle on the left side. Routine hematological examination and chest X-ray were normal. An X-ray neck showed compression of lower tracheal air space. Barium swallow showed an extrinsic compression of the esophagus. A computerized tomogram (CT) scan of the neck showed a mass arising from the thyroid gland completely encircling the trachea extending up to the level of carina (Fig. 1). Thyroid function tests showed a marked reduction of TSH levels. Reduced uptake of isotope with patchy distribution was seen on thyroid TC⁹⁹ scan. Fine needle aspiration cytology (FNAC) of the mass and of the lymph nodes was not contributory. Flexible laryngo-tracheo-bronchoscopy showed bilateral vocal palsy and a bulge in the posterior wall of the trachea. Bronchi were normal. Tracheostomy was performed for stridor under local anesthesia due to difficulty in intubation. During surgery it was seen that the entire neck was filled with a hard woody mass. Trachea was identified with difficulty after excision of the surrounding mass. The patient expired after two

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Fig. 1 CT scan of the neck showing the mass arising from thyroid encircling the trachea

days due to suspected pulmonary embolism. A diagnosis of anaplastic carcinoma of thyroid was made on histological examination.

Case 2

A 62-year-old man presented with complaints of change of voice, neck swelling for six months and hemoptysis for fifteen days. Examination showed a single hard fixed Lymph node of the posterior triangle on the left side. No thyromegaly was noted. Routine hematological examination and X-ray of the chest were normal. X-ray of the soft tissues of the neck showed an ill-defined soft tissue shadow in the trachea.

Direct Laryngoscopy done under local anesthesia revealed left vocal cord palsy. Flexible tracheo-bronchoscopy done under local anesthesia showed a mass arising from the trachea almost completely occluding the lumen. During the procedure, the patient developed severe stridor, necessitating a tracheostomy which was also done under local anesthesia. On opening the trachea, a soft mass filling the lumen was seen. Debulking of the mass was done to facilitate the insertion of tracheotomy tube. Histopathology of the mass showed papillary carcinoma of the thyroid. FNAC of the lymph node showed metastatic papillary carcinoma.

Case 3

A 45-year-old woman presented with increasing difficulty of swallowing and change of voice of one year's duration

and swelling in the tongue for six months. Examination showed a large smooth mass arising from the posterior one third of the tongue on the right side and was found to be crossing the midline (Fig. 2). The mobility of the tongue was not impaired and the larynx was normal. All routine investigations and X-rays were normal and thyroid functions were within normal limits. The mass did not concentrate the radioactive isotope during thyroid scan. FNAC of the mass showed a picture of papillary carcinoma of thyroid. The mass was excised by lateral pharyngotomy approach and the diagnosis was confirmed histologically (Fig. 9). A preliminary tracheostomy was done and the patient anesthetized through the cuffed tracheostomy tube.

Case 4

A 63-year-old woman presented with a swelling on the dorsum of tongue for three years, a right-sided neck mass for six months and increasing dyspnea for 15 days. Examination showed a large, firm, circumscribed mass arising from the dorsum of the tongue at the junction of anterior 2/3rd and posterior 1/3rd (Fig. 3). Tongue mobility was not impaired and the larynx and hypopharynx were normal. Examination of the neck showed a 4 cm by 4 cm mobile level III node on the right side. Thyroid gland was normal. Other than the presence of diabetes, routine blood and urine examination were normal. X-ray chest showed the presence of multiple metastases on both sides (Fig. 4). FNAC of the neck mass showed a papillary carcinoma. Open biopsy of the tongue mass was consistent with adenoid cystic carcinoma. Thyronormalcy was seen on thyroid function tests. Thyroid scintigraphy however, showed the presence of a cold nodule in the right lobe of the thyroid gland (Fig. 5). Ultrasound scan revealed the presence of a partly cystic nodule in the right lobe of the thyroid gland.

Fig. 2 Tongue mass of a case of papillary carcinoma of lingual thyroid

Fig. 3 Tongue mass that turned out to be an adenoid cystic carcinoma

Fig. 4 X-ray chest showing multiple pulmonary metastases

Discussion

Benign, self-limiting autoimmune conditions such as Hashimoto's thyroiditis and Riedel's thyroiditis present as rapidly enlarging neck masses with signs and symptoms of extrinsic compression of trachea, esophagus and the

Fig. 5 Thyroid scan showing a cold nodule in the right lobe of thyroid

recurrent laryngeal nerves. These conditions are self-limiting and carry good prognosis. On the other hand, anaplastic carcinomas of the thyroid gland are uncommon representing only about 5% of all thyroid malignancies. These tumors have a very poor prognosis [14]. However, association of Riedel's thyroiditis with follicular carcinoma of thyroid has also been reported [1, 2]. Wan et al. (1996) reported two cases of anaplastic thyroid carcinoma that closely mimicked Riedel's thyroiditis. Histologically, these tumors were predominated by acellular fibrotic tissue along with atypical spindle cells. The term "paucicellular variant" was used to describe this uncommon variant of anaplastic thyroid carcinoma [2]. The first case in our series was similar to the ones described by Wan et al. This patient also presented with a hard woody mass infiltrating into and replacing all the neck structures, presenting with signs and symptoms of compression typical of Riedel's thyroiditis. Histologically, however the tumor consisted of fibrotic tissue along with the presence of malignant cells diagnostic of paucicellular variant of anaplastic thyroid carcinoma (Fig. 6).

Lingual thyroid is one of the common sites of ectopic thyroid tissue. Many patients with this condition are asymptomatic. The disorder presents during times of growth and increased metabolic activity such as puberty and pregnancy. Obstructive symptoms include foreign body sensation, dysphagia, dysphonia and dyspnea. Both follicular and papillary carcinomas in lingual thyroid have been reported [7, 8]. These studies underline the fact that malignancy must be excluded in all the cases of lingual thyroid since the

Fig. 6 Histopathology of the mass showing acellular fibrous tissue and anaplastic cells – paucicellular variant of anaplastic carcinoma (H&E 400X)

presence of malignancy completely changes the management of this rare condition irrespective of the presence or absence of a functioning thyroid gland. Our case is an example of this rare entity of a papillary carcinoma in lingual thyroid that was diagnosed by fine needle aspiration cytology (FNAC). Excision of this tumor was successfully carried out by a lateral pharyngotomy approach.

Although ectopic thyroid tissue is found along the normal path of development, the presence of ectopic thyroid tissue at extrathyroidal sites such as mediastinum and heart has been widely reported [12, 13]. Rare instances of thyroid malignancies from extrathyroidal sites such as myocardium and ovarian dermoid have been reported [3, 4]. Cases of thyroid malignancies presenting as primary tracheal tumors have also been reported. These malignancies are believed to arise from the ectopic thyroid rests from the submucosa of the trachea [5, 6]. In our series, this rare case of papillary carcinoma arising from the trachea presented clinically like a laryngeal neoplasm with cervical metastases and was detected only when the trachea was examined since larynx did not show any evidence of malignancy on endoscopic examination. Enlargement of a part of or the entire thyroid gland was not observed in this case.

Airway management was challenging the first three cases. In the first case, the patient developed severe stridor due to

bilateral vocal cord palsy. Emergency tracheostomy was done under local anesthesia since endotracheal intubation was not possible. In the second case also, the patient developed severe stridor during fiberoptic bronchoscopy and emergency tracheostomy had to be done under local anesthesia. In the third case, general anesthesia was given through a cuffed tracheostomy tube after a preliminary tracheostomy.

The case that presented as a tongue mass and a cervical mass with pulmonary metastases was a diagnostic challenge. While the tongue lesion showed an adenoid cystic carcinoma (Fig. 7), the cytological picture of the neck mass was consistent with papillary carcinoma of thyroid. (Fig. 8). The problem was compounded by the detection of a non-functioning nodule in the right lobe of the thyroid gland.

Instances of thyroid neoplasms arising from branchial cysts presenting as lateral neck masses, with normal thyroid glands have been reported by Matsumoto et al. and Sidhu et al. [9, 10]. In our case with a similar picture, it was not possible to determine whether the neck mass was a primary malignancy arising from an ectopic thyroid tissue in the neck or was a metastasis from the right lobe of the thyroid gland as the patient did not permit investigations for further evaluation of thyroid gland and lungs. The pulmonary metastases in this case could be from either of the two primary malignancies, adenoid cystic carcinoma of the tongue or papillary carcinoma of thyroid as both these malignancies produce pulmonary metastases [11, 15].

Fig. 7 Histopathology of the tongue mass showing adenoid cystic carcinoma (H&E 400X)

Fig. 8 FNAC of the neck mass showing papillary carcinoma of thyroid (H&E 400X)

Fig. 9 Histopathology of papillary carcinoma of lingual thyroid showing orphan Annie cells (H&E 400X)

This was a rare case where two different primary tumors were found in the head and neck region had a lot of prognostic implications. The cervical mass of papillary carcinoma with a focus likely in the thyroid gland was potentially curable with a combination of surgery and radio nucleotide ablation, but the presence of a second malignancy (adenoid cystic carcinoma) and extensive pulmonary metastases contraindicated any surgical management of the thyroid malignancy.

These cases illustrate rare presentations of thyroid neoplasms and underline the importance of recognizing these conditions as important differential diagnoses in different head and neck lesions.

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