

Case Report

Carcinoma larynx with thyroid gland metastasis: a rare case report

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ABSTRACT

Thyroid gland (TG) metastasis by laryngeal cancer is uncommon. However, now a days following concept of 'organ preservation', so ipsilateral hemithyroidectomy is not required in every case with total laryngectomy (TL) for laryngeal cancer. Studies for T3 and T4 laryngeal cancer having, anterior commissure involvement, transglottic growth or subglottic extension indicates thyroidectomy in the majority of cases. Hemithyroidectomies are linked to hypothyroidism in 23–63% of cases and hypoparathyroidism in 25–52% of cases. There is no recognized link between tumour differentiation and TG involvement. According to reports, the prognosis in cases of TG involvement is poor. The tumour differentiation determines whether the spread is contiguous or noncontiguous. Contiguous spread is more likely in well-differentiated carcinomas, while non-contiguous spread is more likely in poorly or moderately differentiated carcinomas. Anatomically, direct TG invasion is only possible through extralaryngeal soft tissue, which includes the cricothyroid and cricopharyngeus muscles. Non-contiguous spread only possible through lymphovascular invasion which is not necessarily, but seen in 87-91% of cases with subglottic extension over 10 mm, as seen in our case also.

Keywords: Total laryngectomy, Laryngeal carcinoma, Subglottic extension, Thyroid gland metastasis

INTRODUCTION

Total laryngectomy (TL) is the recommended treatment for operable advanced laryngeal carcinoma (LC). In many situations, TL is performed in conjunction with total or ipsilateral hemithyroidectomy or isthmectomy. The need for thyroidectomy during TL is disputed, given the rarity of thyroid gland (TG) metastasis and the fact that thyroidectomy is linked to long-term morbidity. Among patients who undergo hemithyroidectomy, hypothyroidism has been recorded in 23–63% cases, while in adjuvant radiation cases the prevalence rises to 70–91%.¹⁻³ Hypothyroidism necessitates medical assistance throughout one's life, and the cost of that care rises dramatically.

Because the thyroid gland is so close to the larynx, it is frequently invaded contiguously, or rarely non-contiguous

spread might develop lympho-vascularly. In absence of clinically or radiographically TG metastasis, hemithyroidectomy is only indicated with a subglottic extension of more than 10 mm, according to a recent meta-analysis of eight retrospective studies by Mendelson et al.⁴

Unless distant metastasis has occurred, metastasis to TG is classified as T4a by the American Joint Committee on Cancer (AJCC) TNM classification system, with group stage IVa. We hereby present a rare case that we came across, at our center, of laryngeal carcinoma with non-contiguous, ipsilateral thyroid gland metastasis.

CASE REPORT

A 62-year-old male patient presented to the department of surgical oncology, KLE's Dr. Prabhakar Kore Hospital and Medical Research Center, with underlying chronic obstructive pulmonary disease (COPD), chronic smoker

and chronic alcoholic, was diagnosed with carcinoma left vocal cord in August 2018, received radical radiation and chemotherapy then complete resolution of disease noticed. Patient lost follow up and presented to our department in February 2022, with complaint of difficulty in breathing for 4 days and hoarseness of voice since 2-month, with no history of dysphagia. General examination revealed- patient conscious, oriented, B/L reduced air entry, audible stridor, voice appeared hoarse with cough.

A mass in the anterior two-thirds of the left vocal fold, extending all the way down to the left subglottic region, was found during flexible nasopharyngolaryngoscopy.

There was no extension of disease in the anterior commissure and the right vocal fold.

Biopsy left vocal cord revealed- moderately differentiated squamous carcinoma.

The left vocal cord lesion extending to the subglottic region was confirmed by a computed tomography (CT) scan, which revealed no erosive changes in the thyroid or cricoid cartilage. In the left lobe of the thyroid, there is a well-defined heterogeneously enhancing nodule measuring 1.0×1.0 cm. There was no evidence of a distant metastasis (Figure 1).

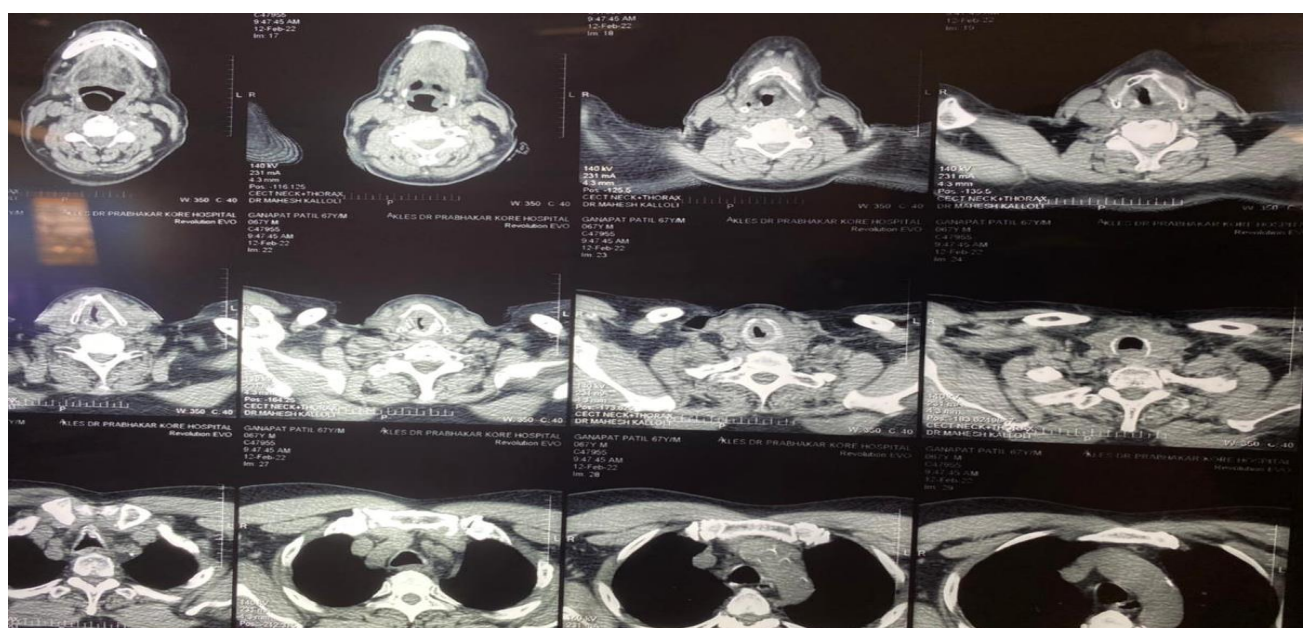


Figure 1: CECT neck (heterogenous enhancing thickening lt.-vocal cord+well defined heterogenous enhancing nodule left lobe of thyroid (1×1 cm).

As the lesion was only extending subglottically to the left side and the CT scan revealed no erosive changes over the thyroid or cricoids cartilage, the patient had total laryngectomy with left hemithyroidectomy. The right thyroid lobe was preserved. This was accomplished by first exposing the right thyroid lobe and then splitting it from the isthmus medially, about 1 cm from the midline. The superior side of the right thyroid lobe was freed from the larynx and tracheal cartilage. Berry's ligament on the lobe was freed, and the remainder of the laryngotracheal framework was dissected from the right thyroid lobe. All of the right thyroid vasculature were retained, including the vascular pedicles of the superior and inferior thyroid arteries.

Standard total laryngectomy performed, the right SCM was positioned medial to the intact thyroid lobe (Figure 2). The neopharynx has been constructed, and the layer wise closure done.

Histopathological analysis of the specimen revealed a moderately differentiated Squamous cell carcinoma

involving the glottis and infraglottic region. There is lymphovascular and perineural invasion. Surgical resection margins are all free. Metastatic squamous cell carcinoma was found in the left thyroid lobe.

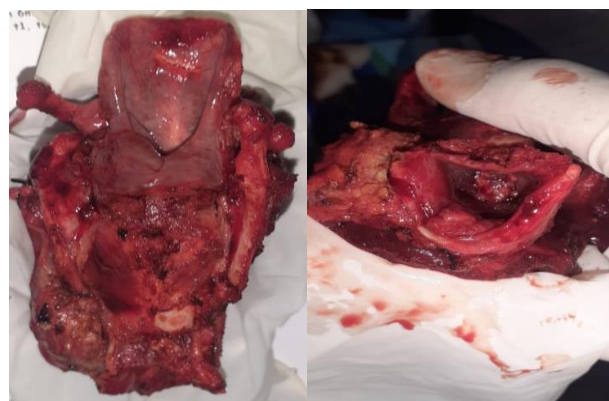


Figure 2: Total laryngectomy+left hemithyroidectomy.



Figure 3: Post operative profile picture.

DISCUSSION

In 1955, Ogura was the first to characterize ductless gland involvement as a metastatic hallmark of laryngeal cancer, recommending that it should be excised routinely to ensure appropriate local control.⁶ According to the literature involvement of thyroid gland non contiguously in advanced SCC of the larynx varies between 1% to 8%.^{7,8} The decision to address ipsilateral versus complete thyroidectomy as part of the surgery in all of these situations is still up for debate.^{2,8,9} Protocol directed at management of advanced SCC larynx, with no evidence of thyroid cartilage erosion and no clinical or radiographic evidence of thyroid metastasis but with evidence of tumour progression into the subglottic region, involves surgical excision of thyroid along with total laryngectomy. Subglottic cancers, or tumours with a subglottic extension of more than 10 mm shows upto 91% negative predictive value. Endocrine gland invasion, via lymphovascular route, as seen in our case is rare and upredictive.¹⁰ Our patient shows thyroid mets with infraglottic extension of disease underwent total laryngectomy and ipsilateral hemithyroidectomy, and is on regular follow up. It is well established that thyroidectomy, whether partial or total, increases morbidity due to chances of post-operative hypothyroidism and hypoparathyroidism, so to be performed only when indicated.

CONCLUSION

Thyroid gland metastasis is not a common characteristic of advanced laryngeal cancer. There is no necessity for thyroidectomy in every case of total laryngectomy. Thyroidectomy may be required only in certain situations with a subglottic extension more than 10 mm during total

laryngectomy with no any other evidence of thyroid metastasis. Subglottic extension is not definitive criteria but it has having high predictive value for thyroid metastasis.

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