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*Case Report*

# Metastatic Thyroid Lump - A Dangerous Entity

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## ABSTRACT

Thyroid gland being at the receiving end of metastasis from a lung primary is an extremely unusual entity. The presentation is often subject to misdiagnosis and requires coordination on different departmental levels for proper and vigorous management. We report an uncommon clinical picture of a non- thyroid primary malignancy to shed light on importance of the same.

***Keywords:*** metastatic thyroid, non- thyroid malignancy, thyroid lump, lung cancer, midline neck swelling

## INTRODUCTION

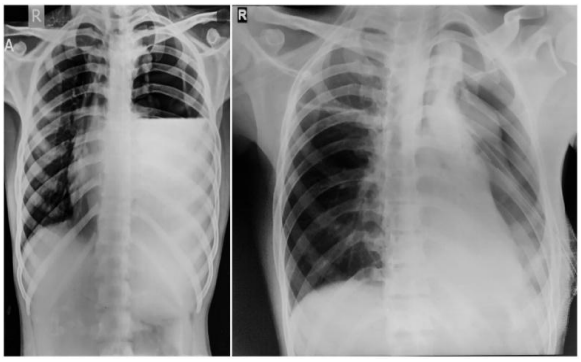
Not only midline neck swellings are a common presentation they also an attention requiring entity. They demand a proper and detailed workup for a surgeon or a physician to arrive at an apt diagnosis and hence proceed with correct line of treatment. Metastatic thyroid swellings can not only be misdiagnosed but also can herald an impending emergency along with a hidden primary. Hence a complete clinical lookout is of extreme importance considering neck swellings.

## CASE REPORT

A 24 year old male was referred to us from the department of pulmonary medicine in view of evaluating a midline neck swelling since 6 years. The swelling was insidious in onset and had gradually progressed to the current size. The patient did not give any history of odynophagia or dysphagia, neither was there any pain associated with the swelling. A detailed history and further examination revealed he was admitted with complaints of left sided chest pain, breathlessness and low grade fever since 3 days. The patient also had a noticeable hoarseness in voice. Blood work up was sent for the patient which came out to be normal. A chest roentgenogram revealed left sided pleural effusion. Patient underwent ICD (Intercostal Drain) insertion and 750ml fluid, reddish in colour, was drained and sent for cytology. The results however, were not significant. Patient was, later, also diagnosed with sputum positive pulmonary TB and started on AKT (AntiKoch's Treatment) under DOTS (Directly observed treatment, short-course) category I. On a free thyroid profile, TSH was raised (7.9mmol/l, normal 0.4-4.2 mmol/l) and T3 and T4 were within normal limits. Ultrasound examination of the neck for the swelling was done that revealed a bulky right lobe of thyroid measuring 3.8x 2.7cm sized heterogeneously hypoechoic lesion with multiple punctate calcific foci and cystic or necrotic areas within and moderate internal vascularity. This was suggestive of neoplastic aetiology. We proceeded with a contrast CT study of neck.

Running in congruence with the USG report the CT was also suggestive of a well-defined heterogeneously hypodense lesion with few non-enhancing areas and few foci of calcification within. Medially the lesion was causing mass effect in the form of compression and displacement of trachea contralaterally with mild luminal compromise. Laterally, it was also seen displacing the right carotid vessels posterolaterally without any thrombosis or narrowing. FNAC correlation was demanded for on CT scan. On an USG guided FNAC the features came suggestive of metastasis of epithelial malignancy most probably Adenocarcinoma lung. Patient was started on 50mcg of Tab Levothyroxine for 6 weeks, along with the ongoing treatment for other comorbidities. He was referred out to the department of Medical Oncology for further management of the cancer.

**CT SCAN FINDINGS SHOWING THYROID LUMP**



**CHEST X-RAY FINDINGS PRE AND POST ICD**

## DISCUSSION

Thyroid abnormalities giving birth to neck swellings is a mundane presentation in an Otorhinolaryngology setup. The gland being a recipient to metastasis is however an extremely unusual finding in opposition to primary thyroid tumors. This is established by the fact that less than 1% are seen in clinical incidence. [(1)] Virchow in 1871 has given the earliest description of a secondary in thyroid. The cancer dissemination can occur from direct or lymphatic spread or from a distant focus. Talking of distant foci, thyroid mostly receives secondaries from kidneys (renal cell carcinoma being the commonest). [(2)] The various sites acting as a source of these non-thyroid malignancies (NTM) are breast, lung, esophageal, gastric, pancreatic, head and neck carcinomas, Burkitt's lymphomas and melanoma, among many others. [(3)] This phenomenon is caused by the virtue of an extensive vascular supply to the gland. Fried has stated that the blood stream stands as the essential mode of tumor transfer to distant locations. [(4)] NTM are frequently associated with parallel metastatic lesions to other organs though hardly clinically noticeable. These are mostly brought to medical attention in the females in the age group 50- 70 years. [(5)] Majority of these tumors are metachronous (time interval: 2 months- 10 years) although synchronicity has also been commonly observed.

NTM can exist in a masquerade of benign thyroid conditions. The symptoms could be modestly scanty or the first presentation could be dyspnea, dysphagia, change in voice [(6)] which mainly signifies its compressional nature and hence a late stage. It is thus of high mandation that any thyroid condition parading as an evident swelling should be brought under an immediate spectrum of investigations.

In our case, the patient was brought to initial medical attention because of his pulmonary pathology. One of the leading causes of deaths attributed to cancers is lung carcinoma. [(7)] Talking about lung cancers, the most frequent sites of hematogenous dissemination include nervous system, bone,

liver, respiratory system, adrenal glands, contralateral lung, thyroid, spleen, stomach, intestines in no particular order and hilar nodes being lymphogenous. The most prone blood-borne site is liver (34.3 %) followed by adrenals (33.6 %). Tumor transfer to thyroid attributes to only 1.7%. [(8)] Histological types of lung cancer include adenocarcinoma, squamous cell carcinoma, small cell carcinoma and large cell carcinoma. [(9)] Of these the one that frequently metastasizes to the thyroid is adenocarcinoma, followed by squamous and large cell carcinomas. [(10)] Extremely unusual behind the causation of NTM is the small-cell undifferentiated type. These can be missed in their earlier stages. An array of manifestations such dyspnea, generalized weakness, weight loss, cachexia and hemoptysis can bring it under the light of clinical attention. Lung carcinomas are an aggressive neoplasm. They have a known propensity for early and wide blood-borne dissemination. [(11)]

A primary from the lung portraying through a thyroid neoplasm can show normal thyroid function tests. To start with, USG usually describes focal or diffusely-infiltrating hypoechoic lesions. With further management using a CT scan heterogeneous hypodense areas with mild contrast enhancement are observed. Calcifications of various kinds can coexist within the lesion and stand as a caveat for a malignancy. [(12, 13)] FNAC of such lesion provides the ultimate diagnostic standpoint. [(14)]

The challenge not only lies in the timed diagnosis of the condition but also in the early and right management. The prognosis is highly dependent on the primary focus as well as the secondary malignancy, their tied manifestations and the time of presentation. The intervention can be surgical or nonsurgical. With lung cancer as the primary, the foremost aim is provision of palliative therapy. [(15)] The balance should be weighed between the primary, the secondary and the outcome of proposed treatment, beneath the curtain of patient's fitness. Patients with presence of multiorgan metastasis do not anyhow fare well. When there are no signs of any extraglandular extension thyroid surgeries are asserted upon. The discrepancy lies in the choice of approach. While many offer to go for a total thyroidectomy in view of achieving tumor free margins and a complete local tumor removal, others advocate subtotal/ partial thyroidectomy or a lobectomy even so, to preserve the function of the laryngeal nerves and conserve parathyroids. Neoadjuvant or adjuvant chemotherapy can be adopted taking into consideration the type of the primary and secondary lesion, association and time of presentation of the tumors. [(11, 16-19)] Palliative therapy still holds ground as the last resort, along with tracheostomy if the patient first turns up with stridor.

## CONCLUSION

It is not uncommon to misdiagnose a midline neck lump in a quotidian OPD setup. A malignant, secondary thyroid can easily present with a façade of a benign thyroid condition. It is associated with significant morbidity and is met with even poorer outcome. We support a voracious workup to be lined up for the same to not only direct us towards proper and timed diagnosis but also help in reaching the primary with such metastatic disposition.

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