



A RARE DRAMATIC PRESENTATION OF ANAPLASTIC CARCINOMA OF THYROID: CASE REPORT

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ARTICLE INFO

Article History:

Received 20th March, 2018

Received in revised form

26th April, 2018

Accepted 22nd May, 2018

Published online 28th June, 2018

Key Words:

Anaplastic
Thyroid
Aetiopathogenesis,

ABSTRACT

Anaplastic carcinoma of thyroid are highly aggressive and lethal tumors and carries a dismal prognosis. We report a case of anaplastic carcinoma of thyroid in a 53 year old male patient with simultaneous lung and small bowel metastasis presented as small bowel perforation in a short span of time leaving us bewildered. We are presenting this case because we were unable to find a report of simultaneous metastases of anaplastic carcinoma of thyroid to lung and small bowel in English literature. We also made an effort to review the literature of aetiopathogenesis and management of anaplastic carcinoma of thyroid.

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Citation: Sreejayan, M.P., Sidharth Matad and Noor Mehandi, 2018. A rare dramatic presentation of anaplastic carcinoma of thyroid: case report. International Journal of Development Research, 8, (06), 20788-20791.

INTRODUCTION

A 53 year old male skilled construction worker by profession with long standing history of asymptomatic thyroid swelling for about 20 years presented to our outpatient department with a rapidly enlarging swelling over the anterior neck with mild compression symptoms and chronic cough. He was an occasional smoker with a social alcohol consumption habits, there was no significant family history. On clinical examination he had a 7*8cms swelling over midline neck moving with deglutition of hard consistency with level 2,3,4 multiple nodes of approximately 1-1.5cms. On systemic examination decreased air entry was noted on right lower hemi thorax, clinical diagnosis of carcinoma thyroid with lymph node metastasis was made. Investigations revealed euthyroid status (biochemically and clinically), routine blood investigations were normal. Fine needle aspiration cytology of thyroid and right side lymph node showed a poorly differentiated carcinoma and metastasis to lymph node.

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Lateral neck x ray showed a soft tissue swelling over anterior neck with internal calcification chest x ray revealed a mass lesion in the right middle lobe and left lower lobe suggestive of metastasis. Contrast enhanced computed tomography of neck showed enlarged thyroid gland with multiple ill defined heterogeneously enhancing lesions, largest lesion in the right lobe of 2.7*2.9cms with absent fat plane with strap muscles and sternocleidomastoid on right side, fat plane posteriorly with trachea was preserved and multiple well defined rounded lymph nodes with central hypodense areas noted on right level 1b,2,3,4,5 of varying sizes approximately 0.5-1.5 cm. Ultrasound of abdomen with thorax showed right pleural effusion. Panendoscopy was done to rule out other possible site of metastasis which was normal. He was given date for flexible fiberoptic bronchoscopy to take biopsy from lung lesion, next day patient presented in our casualty with complaints of sudden onset of abdominal pain and vomiting. Clinical examination findings were tachycardia, diffuse guarding and rigidity. Erect xray was inconclusive but CECT abdomen showed pneumoperitoneum and free fluid in the abdomen. Emergency laparotomy was done, there was an ileal perforation of size 3*2*2 cms about 50cms from the ileocaecal junction with gross peritoneal contamination, 9cms of ileal

resection with primary anastomosis was done .post operative day 5 patient succumbed secondary to SIRS .Gross findings of resected specimen were an ulceration with overlying perforation, histopathology revealed infiltrating lesion in the submucosa with cells showing round to pleomorphic and vesicular nucleus, pleomorphic giant cells, necrosis reaching upto serosa suggestive of high grade poorly differentiated carcinoma. Now we had three possibilities viz;

- Primary small bowel malignancy with lung and thyroid mets.
- Primary lung malignancy with thyroid and small bowel mets.
- Anaplastic carcinoma of thyroid with lung and small bowel mets.

Immunohistochemistry played an vital role cracking this mystery which was negative for synaptophysin, chromogranin, cytokeratin, ck7, ck20, galectin, TTF1. Correlating with FNAC from thyroid we arrived at most probable diagnosis of anaplastic carcinoma of thyroid with simultaneous metastasis to lung and small bowel.



Figure 1. Lateral neck x ray showed a soft tissue swelling over anterior neck with internal calcification

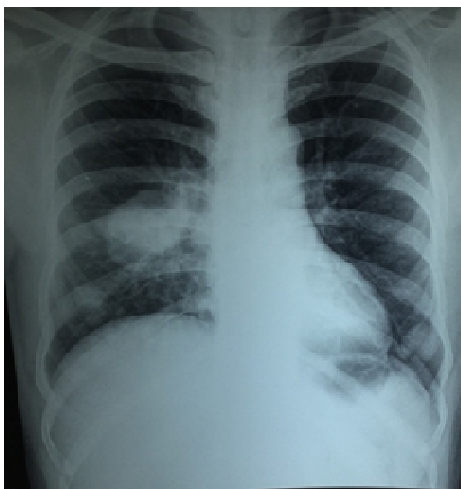


Figure 2 chest x ray revealed a mass lesion in the right middle lobe and left lower lobe suggestive of metastasis

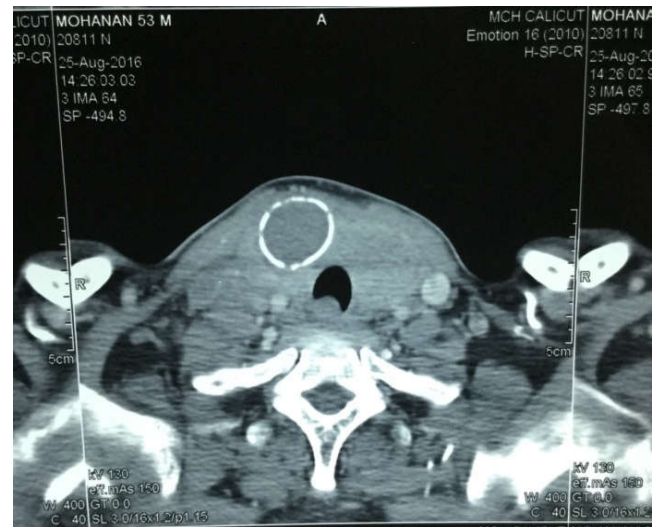


Figure 3. Contrast enhanced computed tomography of neck showed enlarged thyroid gland with multiple ill defined heterogeneously enhancing lesions.



Figure 4 . Resected specimen showing an ulceration with overlying perforation

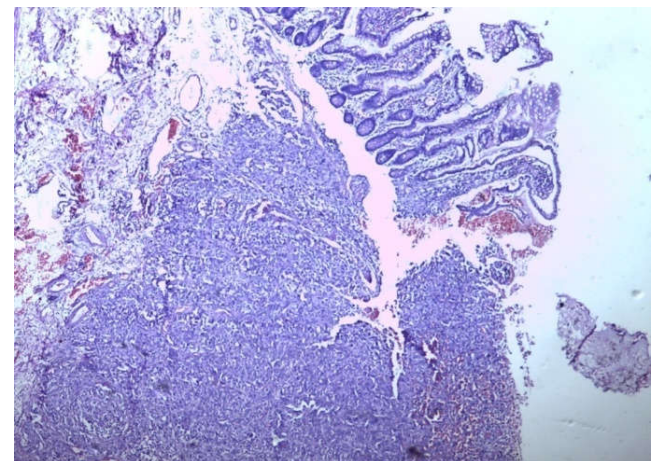


Figure 5 H & E showing infiltrating lesion in the submucosa cells, necrosis reaching upto serosa suggestive of high grade poorly differentiated carcinoma

DISCUSSION

ATC accounts for approximately 1% of all thyroid malignancies (Philip *et al.*, 2016). ATC typically presents with a rapidly enlarging thyroid mass, which frequently involves cervical lymph nodes and surrounding neck structures leading to compressive symptoms, it is an undifferentiated thyroid malignancy of the follicular epithelium (Caroline *et al.*, 2015).

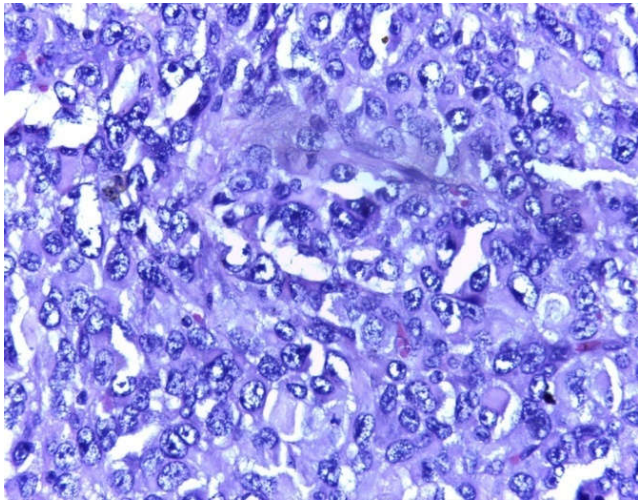


Figure 6 . Cells showing round to pleomorphic and vesicular nucleus, pleomorphic giant cells

The most common site of metastases is the lung and bone with occasional involvement of the heart, adrenals, pleura, kidneys, and pancreas (Silverberg *et al.*, 1970). A case of ATC with isolated metastasis to the small bowel is very rare, as only two cases have been reported in the PubMed database to date (Phillips, 1987; Ricciardelli, 2006). One case of Simultaneous occurrence of distant metastases to the small intestine and the thoracic esophagus from anaplastic thyroid carcinoma is reported (Kobayashi *et al.*, 2005). Patients frequently have a history of prior or coexistent DTC, and up to 50% have history of goiter (Philip *et al.*, 2016). Anaplastic thyroid tumors represent only a small percentage of the cases of thyroid carcinoma and the worldwide incidence is decreasing (Lampertico, 1993; Rossi, 1978) This could possibly be due to the earlier surgical removal of differentiated forms of thyroid cancer as there is a known association between a previous history of well differentiated thyroid cancer and the later development of ATC (Swamy *et al.*, 1990;). FNA is accurate in 90% of cases, making open biopsy an uncommon surgical indication (Philip *et al.*, 2016) as per the ATA guidelines, (Smallridge *et al.*, 2012) initial imaging includes a neck ultrasound, cross-sectional imaging of the neck and chest, imaging of the brain, and 18FDG-PET. 18FDG-PET has been shown to be very useful in the management of ATC, with intense uptake seen in both primary tumors and metastases (Bogsrud *et al.*, 2008). ATC is fortunately rare, but is aggressive and has a very poor prognosis with median overall survival of <6 months (Granata *et al.*, 2013). All ATCs are classified as stage IV, with stage IVA limited to the thyroid, stage IVB with local invasion, and stage IVC with distant metastases (Smallridge, 2012). In some clinical situations like in our case, its difficult to determine whether a tumor developed primarily at the site of detection or metastasized from another malignancy. Often there is no specific morphological pattern associated with an undifferentiated carcinoma; thus, such histological ambiguity makes it more difficult to identify the origin of a tumor. In our case microscopic findings of high grade poorly differentiated carcinoma was present in both FNAC from thyroid and small bowel resection specimen, but characteristic findings of adenocarcinoma, squamous cell carcinoma, and PTC were absent. Immunohistochemical findings of negative TTF-1, synaptophysin, chromogranin and galectin suggest that the tumor did not have typical patterns of either papillary or follicular thyroid carcinoma or adenocarcinoma.

The negative results for cytokeratin, ck 7,ck20 suggested that the tumor did not likely originate from the gastrointestinal tract. Moreover, the findings of negative HMW-CK expression indicated that these undifferentiated cells were not derived from squamous cell carcinoma of the lung. Death is mainly caused by distant metastases (51.5%), local complications (24.7%), or both (26.2%) (Granata *et al.*, 2013) Multimodal therapy with chemotherapy and radiotherapy is the mainstay of treatment for a disease that conveys a prognosis of less than 6 months in most series (Siironen *et al.*, 2010). Postoperative externalbeam radiation or adjunctive chemotherapy adds little to the overall prognosis but should be considered (Pasioka, 2003).

Conclusion

Imaging techniques and FNACs will be helpful in diagnosis of thyroid lesions. Immunohistochemistry plays a major role in diagnosing simultaneous metastasis when we have a doubt regarding origin. An intensive follow up of such patients is required as anaplastic carcinoma of thyroid is highly aggressive and death is usually due to distant metastasis. Unfortunately, we could not get permission for an autopsy and were compelled to make a final diagnosis from clinical evidence.

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