An interesting case of follicular cell carcinoma thyroid present as rib secondary.

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Abstract:
thyroid malignancies typically present as clinically evident thyroid masses, it's not uncommon for patients to present with a distant metastasis from a clinically occult thyroid. We present an interesting case which presented as acute appendicitis and on routine operative assessment checkup was found to have a rib mass. The FNAC from the rib mass pointed towards a secondary lesion from a follicular carcinoma of the thyroid

Keyword:
RIB secondary, follicular cell carcinoma of thyroid

INTRODUCTION:
Mrs Parimala 50 yrs female patient presented to surgical outpatient depot with the futures of appendicular mass lesion, without evidence of thyroid mass as well chest wall mass lesion. on routine examination of investigation she was diagnosed as having follicular cell carcinoma thyroid and rib secondary.

CASE PRESENTATION:
Parimala 50 yrs old lady from Madurai, presented with abdominal pain for the past 3 days. She was diagnosed as having appendicitis, and was planned for appendectomy. While investigating for surgery her chest x ray showed a homogenous opacity in left chest wall involving the 4th rib.
She underwent CT chest for complete evaluation it showed mass lesion involving 4th rib, which was intrathoracic, and extrapleural in position.

**CT showing intrathoracic extrapleural rib mass**

FNAC from chest mass revealed follicular thyroid carcinoma. USG thyroid showed small nodule in left lobe of thyroid but FNAC of the nodular lesion did not yield confirmative result. She was planned for total thyroidecomy and resection of 4th rib.

Intraoperatively there was nodule in right lobe of thyroid with adjacent lymph nodes. Total thyroidecomy along with lymph node dissection was done, followed by anterolateral thoracotomy done, 15cm x 10cm x 7cm mass present in 4th rib without visceral pleural breech, and the mass along with 3, 4, and 5th ribs were resected along with intercostal muscles. Chest wall was reconstructed using prolene mesh.

Pathological examined revealed picture suggestive of minimally invasive follicular carcinoma of one lobe of thyroid with secondary follicular carcinoma of thyroid in the rib.
CASE DISCUSSION:
The follicular cell carcinoma can present with occult primary with secondary in bone clinically, commonly skull, pelvic bone, long bone ends were affected but in this patient rib has involved which was very rarely reported in literature. Thyroid carcinoma is most common endocrine malignancy. Follicular cell carcinoma has 5 to 10% incidence. Pathological examination showing capsular or vascular invasion may be required to differentiate it from adenoma. Despite its well differentiated character follicular carcinoma may be overtly or minimally invasive. Point mutation in the ras oncogene seen in follicular cell carcinoma. Histochmical study of delta N p 73 is effective marker to differentiate follicular adenoma and carcinoma. PCR a prognostic indicator of significant value may be ras genotyping by PCR help in the clinical and histological reassessment of these tumor.

Mean mortality rates are 1.5 in females and 1.4 % in males. Mean survival rate after 10yrs is 60%. At diagnosis 10 to 15% patients have distant metastases to bone and lung. Total thyroidectomy is the treatment of choice for minimally invasive disease. Bone metastasis is more common in well differentiated carcinoma of thyroid than undifferentiated malignancy of thyroid. Bone is a large repository for immobilized growth factors, including transforming growth factor, insulin-like growth factor-I and -II (IGF-I and -II), fibroblast growth factors, platelet-derived growth factors, bone morphogenetic proteins, and calcium. Released and activated during bone resorption these factors render the bone fertile for tumor growth. More than 80% of bone metastases from all tumors including DTC are located in axial skeleton red marrow where blood flow is high (vertebrae, ribs, and hips). Tumor cell adhesive molecules bind the tumor cells to marrow stromal cells and bone matrix allowing them to grow and produce angiogenic and bone-resorbing factors Molecular biology studies try to explain the higher propensity of follicular ca bone metastasis. One hypothesis was the difference in the expression of tumor suppressor genes, caveolin-1 and caveolin-2, is up-regulated in FTC and down-regulated in PTC. The latter group expresses in large amounts focal adhesion kinase (FAK). FAK affects adhesion, motility, and distant site tumor growth. Follicular thyroid cancer cells express less fibronectin resulting in higher cell adhesion and migration. Chest wall tumors fall into one of four categories: primary tumors; adjacent tumors with local invasion; metastatic lesions; and non neoplastic disease. The majority of chest wall lesions are the result of metastasis or invasion from adjacent lesions. Primary lung and breast cancer is made up of 51%. While 22% metastatic lesions, sarcomas were the most frequent metastatic tumors. The most common site of involvement for all chest wall lesions is the rib cage. Criteria for curative resection are:

1. the chest wall is the only site of disease
2. locoregional disease is controlled
3. if complete resection with negative margins is possible.
4. defects of <5 cm in greatest diameter anywhere on the thorax are usually not reconstructed.
5. posterior defects of less than 10 cm likewise do not require reconstruction because the overlying scapula provides support.
6 arger defects, however, should be re-constructed, with autogenous tissue such fascia lata or ribs and prosthetic material such as the various meshes, metals, or methylmethacrylate has been used. In this case the rib secondary as well as thyroid were resectable so the rib resection and total thyroidectomy was done.

Conclusion:
Follicular cell carcinoma of thyroid can present as occult with secondaries, in this patient both primary and secondaries were diagnosed after investigation only that is the uniqueness of this case. In literature rib secondary of follicular carcinoma is rarely represented, the secondary are amenable to resection and radioablation. We have plan to followup this pt after TSH estimation and withholding of thyroid drugs, wholebody isotope scanning and further management.

REFERENCE:


1 Shield’s general thoracic surgery, chapter 46, 47.
2 Sabiston’s textbook of surgery
3 Schwartz’s textbook of surgery