THYMIC CARCINOID- A CASE REPORT

KUZHALMOZHI
Department of Pathology,
MADRAS MEDICAL COLLEGE AND GOVERNMENT GENERAL HOSPITAL

Abstract: Thymic carcinoids are uncommon primary neoplasms of neuroendocrine origin that manifest as anterior mediastinal masses in adult patients. It constitutes about 2-5 of thymic epithelial tumors with an estimated incidence of 1.5 to 3 per 10,000,000 persons per year. In contrast to the lung, the great majority of cases are represented by atypical carcinoids. Atypical carcinoids are mainly tumors of adults (mean 48-55 years) in both males and females. It is rarely seen in children (8-16 years of age). The prognosis is generally poor due to late detection and lack of effective treatment. We report a case of thymic carcinoid in a 44 years old male who presented with anterior mediastinal mass.

Keyword: Neuroendocrine tumor- Moderately differentiated- Atypicalcarcinoid - Thymus -Mediastinum.

INTRODUCTION:
Rosai and Higa were the first to acknowledge the existence of carcinoid tumors in the thymus and to separate them from more common tumors arising in this location, such as thymoma. It is believed to arise from neuroendocrine cells of kultschitzky type normally present in thymus. Majority of carcinoids in the thymus correspond to atypical carcinoids. The terminology and criteria for diagnosis are the same as those applied for lung carcinoids.

CASE SUMMARY:
A 44 years old male, admitted with complaints of chest pain, cough, dyspnea for past 2 months. CT chest showed features suggestive of anterior mediastinal mass with differential diagnosis of lymphoma and invasive thymoma. Ultrasound abdomen showed peripancreatic adenopathy. Excision of mediastinal tumor was done. Grossly, the mass was thinly encapsulated, nodular, grey white measuring 23x18x11 cm. Focal capsular breach was seen (Fig.1). Cut surface was solid grey white to tan with necrotic and yellowish gritty areas (Fig.2).
FIG-1. EXTERNAL SURFACE-NODULAR
FIG-2. CUT SURFACE- SOLID, GREY WHITE WITH NECROSIS

Microscopically, the neoplasm showed uniform round to oval cells in nests, trabecular pattern (fig.3 & 4), in festoons (Fig.5) and in solid sheets (Fig.6) separated by thin vascularised fibrous septa. Nuclei were uniform and showed speckled chromatin. Several apoptotic bodies were seen. Extensive areas of necrosis (Fig.7), calcification (Fig.8) and foci of fibrosis seen. Infiltration into adjacent fibro fatty tissue is evident. Four mediastinal lymph nodes studied showed evidence of secondary deposit (Fig.9).
IMMUNOHISTOCHEMISTRY:

Immunohistochemical study on tumor cells showed positivity to NSE, chromogranin and cytokeratin (Fig.10, 11 & 12). With these features a diagnosis of Thymic carcinoid with regional lymph node metastasis was given.

DISCUSSION:
The neuroendocrine tumors of the thymus comprise of typical carcinoid and atypical carcinoid as well as large cell carcinoma (LCC) and small cell carcinoma (SCC). In 2004, WHO categorized typical and atypical carcinoids as well differentiated neuroendocrine carcinomas, whereas small and large cell carcinomas are categorized as poorly differentiated carcinomas. Atypical Thymic carcinoid usually affects patients with mean age of 50 yrs and shows male preponderance. Clinically patients are either asymptomatic or present with symptoms of mediastinal mass or endocrine symptoms. Approximately one third of the patients have Cushing’s syndrome due to ACTH secretion. Upto 25% of thymic carcinoids are
They usually occur in men of heavy smokers and behave aggressively. Typical carcinoids are indolent and rarely show metastasis. Atypical carcinoid shows diffuse growth pattern, increased mitotic activity and necrosis. It is more aggressive with a tendency to recur and metastasize widely to lung, bone, and liver. Macroscopically they are well circumscribed, unencapsulated, and solid with areas of necrosis and hemorrhage. Cut surface will be gritty due to calcifications. Microscopically, typical (classic) carcinoid tumor comprised of polygonal cells with granular cytoplasm arranged in ribbons, festoons, solid nests and rosette-like glands. They have less than 2 mitoses per 2 mm² (10 HPF) and necrosis is absent. Atypical carcinoid tumor show architectural features similar to classic type but exhibits a greater degree of mitotic activity and foci of necrosis (including comedonecrosis). Many morphological variants such as spindle cell variants, pigmented variants, oncocytic variants, sclerotic, diffuse type, medullary thyroid carcinoma like variant, angiomatoid, thymic carcinoid with prominent mucinous stroma and thymic carcinoid with divergent sarcomatoid differentiation have been described. But these variants have no prognostic significance. Immunohistochemically, it is positive for cytokeratin and neuroendocrine markers, ACTH, somatostatin, serotonin and endorphins. Differential diagnoses include metastatic neuroendocrine carcinoma from lung, large cell lymphoma, thymoma, thymic carcinoma and paraganglioma. Thymic carcinoids have a worse prognosis compared with bronchial carcinoids. Surgical excision is the treatment of choice. Adjuvant radio and chemotherapy can be given for recurrence and metastasis. It has poor prognosis with a 10-year survival rate of less than 50%.

CONCLUSION:
Thymic carcinoid is a slow growing tumor with a poor prognosis because of its tendency to local and distant spread. Carcinoid tumor arising in the anterior mediastinum is a rare condition. According to a recent review, approximately 150 cases with thymic carcinoid cases have been reported till date.

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