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Journal of Oncology and Cancer Screening

Open Access Case Report

An Incidental Discovery and Exploration of an Anterior Mediastinal Mass

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Article Info

Received: October 10, 2021
Accepted: October 18, 2021
Published: October 28, 2021

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Citation: Keerthy D. Joseph. (2021) "An Incidental Discovery and Exploration of an Anterior Mediastinal Mass", J Oncology and Cancer Screening, 3(4); DOI: http;//doi.org/010.2021/1.1042.

Introduction:

Thymomas and thymic malignancies are rare tumors of the anterior mediastinum, often discovered incidentally on chest imaging. Here, we present the case of a patient who initially came in with complaints of dizziness and dyspnea, later discovered to have a thymoma upon work-up of a mediastinal mass reported on chest-x-ray.

Case:

A 69-year-old African American male with history of coronary artery disease, atrial fibrillation, and diabetes presented to the hospital with complaints of dizziness and balancing difficulties, along with progressively worsening dyspnea on exertion. CT brain was negative for any acute intracranial abnormalities. Upon neurology evaluation, dizziness was deemed to be secondary to positional vertigo, for which vestibular rehabilitation and otolaryngology follow-up were recommended. Chest x-ray done on admission reported a prominent left hilar lesion; follow-up CT chest revealed a large lobulated predominantly solid mass with calcifications, concerning for thymoma. PET scan showed a 5.9 cm cystic and partially calcified malignant mediastinal mass, suggestive of a thymic neoplasm. No lymphadenopathy or distant metastasis was reported. Patient underwent an anterior mediastinoscopy with biopsy; immunohistochemical (IHC) staining was positive for p63 and CK19 and pathology was consistent with thymoma. Patient is referred to undergo surgical resection of the mass. Acetylcholine receptor antibodies have been sent to evaluate for underlying myasthenia gravis; results are currently pending.

Discussion:

Thymic tumors are very rare neoplasms of the anterior mediastinum; its incidence in US is only 1.5 cases per 1 million individuals annually. 5-year survival rate for localized thymoma is 93%, whereas it is 79% for those with metastatic disease. Thymomas are often found as incidental findings on imaging in asymptomatic patients; they may also manifest with local symptoms of chest pain, dyspnea, voice hoarseness, and superior vena cava syndrome, depending on the size of the tumor and their effect on the adjacent organs. Autoimmune paraneoplastic syndromes have been linked with thymic neoplasms, most common one being myasthenia gravis (MG), in which autoantibodies are formed against the acetylcholine receptors of voluntary muscle at the neuromuscular junction, manifesting as weakness, fatigue, diplopia, and ptosis. Approximately 50% of thymoma patients have symptoms consistent with MG; thymectomy usually results in improvement of the MG symptoms. Diagnostic evaluation starts with a CT or MRI to characterize the size of the tumor and to measure the extent of invasion of surrounding structures; definitive diagnosis requires a biopsy. Complete surgical resection is recommended as the initial treatment modality; it also provides additional staging information to guide further therapy. For patients with stage I to III thymic carcinoma, post-operative radiation therapy (PORT) is recommended to prevent local recurrence; neoadjuvant versus adjuvant chemotherapy is also considered for patients with stages III and IV. PORT is only utilized for palliation of local symptoms in stage IV thymoma or thymic carcinoma.

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