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### ABSTRACT

#### **Surgical Resection of a Giant Papillary Thyroid Carcinoma with Sternal Metastasis: A Case Report and Review of the Literature.**

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**Background:** Papillary thyroid carcinoma is a differentiated form of thyroid carcinoma and the most common malignant thyroid cancer. It is characterized by indolent biological behavior and slow growth, with only a few cases reporting sternal metastasis. This study aims at reporting a rare case of huge papillary thyroid carcinoma that presented with sternal metastasis, with a review of the relevant literature.

**Case presentation:** Here, we report a case of a 69-year-old male patient, who was incidentally diagnosed with papillary thyroid carcinoma and sternal metastasis one year before his admission to our hospital. Physical examination revealed a central neck swelling measuring about 18\*10 cm oval transversely and extending to the upper chest. CT scan demonstrated a mass measuring



approximately 6\*8.5\*8.7 cm and located at the anterosuperior mediastinum. Fine needle aspiration biopsy was performed with a histopathology report of papillary thyroid carcinoma, staged VI Bethesda, and confirmation of sternal metastasis. A total thyroidectomy, radical dissection of the cervical lymph nodes, and manubriosternal resection were performed as a one-stage procedure. This was followed by radioactive iodine therapy and substitution with L-thyroxine. Post-operatively, the patient was in a good general condition without any complications and is euthyroid after the substitution.

**Discussion:** Papillary thyroid carcinoma is one of the most curable cancers. Its prognosis is directly related to the tumor size and age of the patient, with masses less than 1.5 cm in patients less than 55 years old having the best prognosis of PTC cases. Distant metastasis from DTC is not very common and usually arises in the lung and bones. Bony metastasis to the sternum is rare in general and most of the cases are reported in patients with breast cancer rather than thyroid cancer. Thus, manubriosternal metastasis from PTC is more uncommon. There is no consensus on the management of sternal metastasis, although surgical resection and radioactive iodine therapy form important potential options for the treatment.

**Conclusion:** The patient highlighted in this report presented with multiple qualifications of very poor prognosis: Advanced age, huge tumor burden, locally advanced and rapidly progressive disease with multiple cervical lymph node metastases, and a bone lesion in the sternum presented as the initial presentation, which is generally unusual in cases of conventional Papillary thyroid carcinoma. Finally, although this is a challenging case where therapeutic guidelines are limited, we describe its successful surgical management at our center.

**Key Words:** Papillary thyroid carcinoma, sternal metastasis, thyroidectomy, radical dissection, manubriosternal resection.