International Journal of Academic Multidisciplinary Research (IJAMR)
ISSN: 2643-9670
Vol. 8 Issue 7 July - 2024, Pages: 105-106

Anaplastic Carcinoma and Hyperthyroidism: A Rare Association about a Case Report

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Abstract*: Anaplastic carcinoma of the thyroid is an aggressive and extremely rare malignancy. Meanwhile, hyperthyroidism is a prevalent endocrine disorder. The co-occurrence of these two conditions is exceptionally uncommon. We present a case report about a patient diagnosed with both anaplastic carcinoma and hyperthyroidism for emphasizing the diagnostic difficulties and management tactics employed.*

Keywords: Anaplasic, hyperthyroidism, carcinoma

1. INTRODUCTION:

Anaplastic thyroid carcinoma (ATC) accounts for less than 2% of all thyroid cancers and is identified by rapid tumor growth and poor prognosis. Conversely, hyperthyroidism is commonly caused by toxic multinodular goiter. The link between anaplastic carcinoma and hyperthyroidism is an uncommon event, with only a few cases documented in the literature. In this article, we present an exceptional occurrence where a patient manifested both conditions concurrently. We place particular emphasis on the diagnostic process employed and the corresponding therapeutic interventions.

2. CASE PRESENTATION:

A 62-year-old female patient with no noteworthy medical history presented with a cervical mass which had been developing over a period of 20 years. Recent 20 days saw the mass grow rapidly, consequently causing inspiratory dyspnea, dysphagia for solids, and dysphonia. During physical examination, the patient displayed an overall deterioration of her condition, a heart rate of 90 bpm, and blood pressure of 130/60 mmHg. A thyroid-like swelling with plunging features and collateral venous circulation was identified during cervical examination. endoscopy confirmed normal vocal cord appearance, but also revealed right-sided, unilateral recurrent laryngeal nerve paralysis.
The patient was hospitalized and positioned in a semi-sitting position, with nebulization and intravenous methylprednisolone (120 mg/day) being initiated. Thyroid function assessments identified hyperthyroidism, with a TSH level of 0.01 mIU/L and T4 level of 49.12 pmol/L.
The goiter was classified as EU-TIRADS 5 in the cervical ultrasound.
The cervical-thoracic CT scan displayed a substantial goiter extending around the left cervical vascular axis. Carbimazole 40 mg/day was administered to the patient for hyperthyroidism management. A biopsy of the thyroid was undertaken utilizing local anesthesia, with histopathological examination revealing an undifferentiated carcinoma with sarcomatous features, indicating anaplastic carcinoma as a possibility.

The patient was referred to the oncology department and underwent a combination protocol of paclitaxel and carboplatin with growth factors in an attempt to manage the anaplastic carcinoma. However, the patient's condition deteriorated rapidly due to the progression of the disease, leading to admission to the intensive care unit requiring intubation and sedation. Despite aggressive management, her condition deteriorated and, unfortunately, she passed away.

Figure A: Images showing a large cervical mass

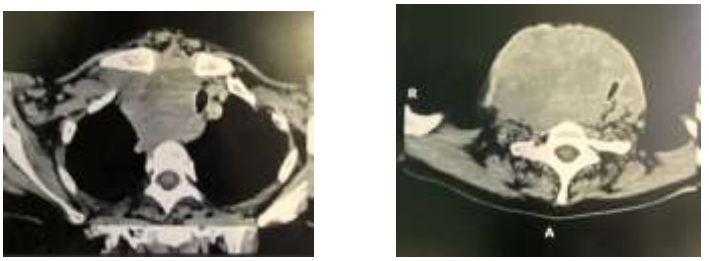

Figure B: Computed tomography scan of the neck (axial section) showed a large right lobe retrosternal goiter and narrowing of the trachea.

3. DISCUSSION:

Anaplastic thyroid carcinoma is a rare and highly aggressive malignancy that accounts for approximately 2-5% of all thyroid cancers [1]. It exhibits rapid growth, local invasion and distant metastasis, leading to a poor prognosis and limited treatment options. The association between anaplastic thyroid carcinoma and hyperthyroidism is extremely rare, with only a few documented cases in the literature [2][3][4].

In this case, the patient had a cervical mass that had been present for some time and had grown rapidly. The patient had inspiratory dyspnea, dysphagia and dysphonia, suggesting that the growing mass was causing local compression. Elevated T4 and suppressed TSH levels were suggestive of hyperthyroidism, complicating the diagnosis.

The management of anaplastic thyroid carcinoma is challenging because it often presents at an advanced stage with extensive local invasion. Surgical resection is the primary treatment option, although alternative approaches must be considered in cases where surgery is contraindicated, as in this patient. The combination of paclitaxel and carboplatin with growth factors has shown promising results in improving overall survival and reducing tumor burden [5][6]. However, the outlook remains bleak with a median survival of less than one year [7].

Early recognition and diagnosis of anaplastic thyroid carcinoma is essential for prompt treatment. However, due to its rarity and aggressive features, the prognosis is often unfavorable. Therefore, further research is needed to explore innovative therapeutic approaches and targeted therapies that may improve patient outcomes [7][8].

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4. CONCLUSION:

In conclusion, a rare case of anaplastic thyroid carcinoma associated with hyperthyroidism is presented. The disease's aggressive nature, along with the contraindication for surgery, created significant management challenges for the patient. Despite administering the paclitaxel and carboplatin combination protocol, the patient's disease progressed and ultimately led to their unfortunate demise. This case highlights the necessity for timely diagnosis, interdisciplinary treatment, and investigation into innovative therapies for anaplastic thyroid carcinoma.

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