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SHORT COMMUNICATION

Rapidly Enlarging Thyroid Mass

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Anaplastic Thyroid Carcinoma (ATC) is an uncommon and highly aggressive malignancy. These tumors present annual incidence of 1-2 cases/million and 2%-5% of thyroid cancer [1]. The mean age at presentation is 63-71 years with a female-to-male ratio of 1.5-3.5:1. ATC is marked by rapid growth and extensive local invasion. Early recognition of the disease is essential to allow prompt initiation of therapy. We present a case of anaplastic thyroid carcinoma and discuss the epidemiology, risk factors, prognostic factors of the disease and the approach to treatment.

An 83-year-old man come to our observation because of a rapidly enlarging anterior neck mass at the last two weeks, dysphagia, dysphonia and neck pain. Patient didn't mention about previous irradiations on the neck either familiarity with thyroid and neoplastic diseases. He had a past medical history of diabetes mellitus type 2. Physical examination revealed one palpable formation (7 × 5 cm) over the right lower neck.

Computed tomography scan revealed the presence of one solid formation (10 × 5 × 6 cm) at the base of the right neck originating from the right thyroid lobos, extending up to the mediastinal area with some enlarged lymph nodes at the right sides. Computed tomography of chest revealed multiple tiny nodules in both lungs. Fine needle aspiration biopsy was carried out. Histological examination showed multinucleated giant cells and with necrosis and hemorrhage areas. The immune-histochemistry showed positive markers cytokeratin and vimentin in the neoplastic cells and negative markers thyroglobulin, calcitonin, S100 protein, CK IT, CD30 and CD3. Due to ATC with lung metastasis our patient received palliative chemotherapy and he died three weeks later.

ATC is one of the most aggressive solid tumors known to affect humans, in recent years the incidence has declined; however, it may be higher in areas of endemic goiter [1,2]. Prolonged stimulation by TSH may account for the higher of ATC in these areas. Approximately 20% of patients with ATC have a history of differentiated thyroid cancer.

Mutations of tumor antigen p53 are frequently. This tumor is typically composed of varying proportions of spindle, polygonal and giant cells, often harboring squamous cells and sarcomatoid foci. Clinically, most patients have a dominant mass of 5 cm or more, multiple nodules in thyroid lobes and many enlarged lymph nodes. Symptoms are related to mechanical compression, such as dyspnea, stridor, dysphagia, neck pain, and hoarseness [3]. Unusual presentation includes the compression sign of jugular vein, vague nerve with bradycardia, skin infiltration and/or the irradiation in history. Constitutional symptoms can occur, including anorexia, weight loss, fatigue, and fever of unknown origin [1,3]. Rarely, rapid growth of the tumor within the thyroid causes thyroiditis, with symptoms of hyperthyroidism. On physical examination, most patients have bilateral but asymmetric thyroid enlargement; the goiter is typically hard and nodular and may be tender.

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Approximately 50% of patients have enlarged cervical lymph nodes. Distant metastases are present in a one quarter to two-thirds of patients. The most common site is the mediastinum and lungs (42%), followed by bone (32%) and brain (9%).

The ATC diagnosis includes clinical examination, ultrasound investigation, blood analysis and biopsy. Appropriate imaging is critical for defining the extent of disease, planning therapy, and monitoring the response to treatment. Ultrasound scans provide information about the location and nature (cystic vs. non-cystic) of the tumor; Computed Tomography and Magnetic Resonance Imaging are necessary to determine the staging and extent of the disease. In patients with bony metastases, skeletal radiographs typically show lytic lesions.

Laboratory evaluation in patients with ATC should include complete blood count, basic metabolic profile, liver function, coagulation factors, and thyroid function tests. Thyrotoxicosis, hypocalcemia, and leukocytosis have all been described in patients with ATC. ATC tumor is not expressed in thyroglobulin level and usually does not concentrate radioiodine isotopes.

The diagnosis is usually confirmed by fine needle aspiration biopsy (sensitivity for thyroid malignancy ranges from 61-97.7%). If result is uncertain the patient should undergo to incisional biopsy [4]. Microscopically, the tumors are composed of anaplastic cells with marked cytologic atypia and high mitotic activity. There is typically extensive necrosis [1,4].

Cytokeratin is a useful epithelial immunohistochemical marker and present in 40-100% of tumors. Vimentin and carcinoembryonic antigen are another's helpful immunohistochemical marker [4].

All anaplastic cancers are considered stage IV cancers, if intrathyroidal anaplastic cancers are designated IVA, whereas anaplastic cancers with gross extrathyroidal extension are IVB and with distant metastases IVC.

A diagnosis of ATC is usually fatal with a mean survival of 3-9 months and only 10-15% alive at 2 years. Advanced stage, male gender, older age, leukocytosis, hypoalbuminemia, and hypothyroidemia were described as poor prognostic factors. In our case, male gender, and lung metastasis were poor prognostic factors. The age at diagnosis, the rapid growth and the impossibility of a surgical treatment are common in this tumour type [1,3].

Multimodality treatment is the recommended treatment although it seems to have only slightly improved outcomes. It consists of surgery, external beam radiation and chemotherapy [3]. Besides tumor resection tracheostomy may be indicated for advanced disease. Doxorubicin has become established as a standard chemotherapy often in combination with cisplatin [3].

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