International Surgery Journal
Uthirakumar G et al. Int Surg J. 2019 Aug;6(8):2999-3001
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20193359

Case Report

A rare case of multinodular goitre turning in to anaplastic carcinoma

Uthirakumar G., Reshma S.*, Muthu Chithra

Department of General Surgery, ACS Medical College, Chennai, Tamil Nadu, India

Received: 07 May 2019
Accepted: 02 July 2019

***Correspondence:**
Dr. Reshma S.,
E-mail: surgeonreshma@gmail.com

ABSTRACT

Anaplastic thyroid carcinoma is highly aggressive, undifferentiated carcinoma that may arise from normal or abnormal thyroid. Making the diagnosis of anaplastic thyroid carcinoma by FNAC of the thyroid with long standing multinodular goiter is very rare. We report a rare case of multinodular goiter turning in to anaplastic thyroid carcinoma.

Keywords: Anaplastic thyroid carcinoma, FNAC, Multinodular goitre

INTRODUCTION

Thyroid diseases are commonly seen in patients attending surgical outpatient department. It includes hyperthyroidism, hypothyroidism, thyroiditis, goiter and neoplasms. Thyroid enlargement is the most common sign, and multinodular goiter is the most common disease leading to the enlargement of thyroid. Although benign tumors are more common than malignant, primary thyroid carcinomas are not uncommon. Among the different primary carcinomas, anaplastic carcinoma stands out as the least frequent and the most aggressive.[1] In fact, anaplastic thyroid carcinoma is one of the most aggressive and ultimately fatal malignancies known.[2] Essentially there are no long-term survivals, and most patients die within months from the time of diagnosis.[3] Clinically, they present with a rapidly enlarging mass and consequent upper aero digestive obstructive symptoms. Actually, 15-50% of patients presenting with anaplastic thyroid carcinoma have extensive local invasion and distant metastasis at the time of diagnosis. Of these, up to 90% will have lung and pleural metastasis. The diagnosis of anaplastic thyroid carcinoma can be achieved utilizing fine needle aspiration. However, the presence of pre-existing thyroid disease may complicate the issue and make the diagnosis more challenging. Anaplastic thyroid carcinoma arising in multinodular goitre is very rare. We report a rare case where the patient had a long-standing history of multinodular goitre which turned in to anaplastic thyroid carcinoma. The cytopathologic features and the relationship between anaplastic thyroid carcinoma, pre-existing multinodular goiter are discussed.

CASE REPORT

A 70 year old woman presented to the outpatient department with swelling in front of neck for 10 years duration. Swelling was insidious onset, gradual in nature and there was sudden increase in size of swelling since last one month. On examination, painless swelling measuring 10×7 cms, with firm consistency was palpable at thyroid region extending to left side of neck, which moves with deglutition. The skin over the swelling were normal. Multiple fixed lymph nodes left side of level 2, 3 and 4 largest measuring 3x3 cm were palpable. Pembertons sign negative. It was not associated with thyrotoxicosis. She developed recent symptoms of dyspnea, dysphagia and voice change. Patient is a known case of hypertensive since seven years on medications. On investigation, Ultrasound neck showed enlargement of both lobes of thyroid with left lobe showing internal

calcification and heteroechoic lesion at level 2, 3 and 4 with normal isthmus. Computed tomography of the neck was done revealing a large soft tissue lesion with heterogeneous enhancement at left lobe of thyroid with retroclavicular extension and calcifications. FNAC was performed which showed anaplastic cells with large pleomorphic nuclei, neutrophils and occasional papillary fragments. Chest X-ray shows tracheal shift to right side (Figure 1). Thyroid function tests were normal. All routine blood investigations were within normal limits. In view of the above findings, diagnosis of anaplastic thyroid carcinoma was made. The patient was given neoadjuvant radiotherapy and later total thyroidectomy done. Patient is on regular follow up.

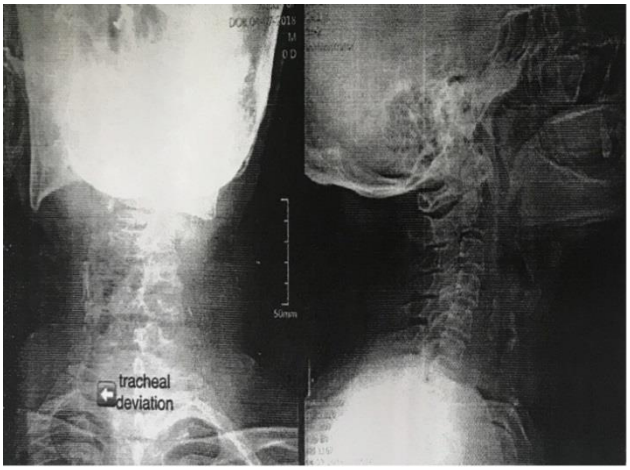

Figure 1: Chest X-ray shows tracheal shift to right side.

DISCUSSION

Thyroid diseases include hyperthyroidism, hypothyroidism, thyroiditis, goiter, (which can be diffuse and multinodular) and thyroid tumors, including adenomas, papillary carcinoma, follicular carcinoma, medullary carcinoma and anaplastic carcinoma. Some thyroid diseases have impaired synthesis of thyroid hormone, and most often this abnormality is caused by dietary iodine deficiency. Anaplastic thyroid carcinoma accounts for <5% of all thyroid malignancies and is almost always fatal. Typically most patients die within 3-6 months after diagnosis, and long-term survival is unheard of. Longer survival should always raise the possibility of a mistaken diagnosis. The tumor cells are usually undifferentiated thyroid follicular epithelium, composed of highly anaplastic cells, which can be pleomorphic giant cells, spindle cells with sarcomatoid appearance, mixed spindle and giant cells, or small cells very similar to those seen in small cell carcinoma. In our case anaplastic cells with large pleomorphic nuclei, neutrophils and occasional papillary fragments seen. Typically the tumor quickly infiltrates the surrounding structures, and lung metastasis is quite common at the time of diagnosis. Symptoms and signs of upper aero digestive compression usually ensue rapidly. Involvement of recurrent laryngeal nerve leading to hoarseness may occur. This aggressive thyroid carcinoma usually affects the elderly. A previous history of MNG has been reported in as much as 50% of the cases. In 20% of the cases a preexisting differentiated thyroid carcinoma is present, usually of the papillary type.[4,5] The pathogenesis of the fore mentioned dedifferentiation from papillary carcinoma to anaplastic thyroid carcinoma has been attributed in some cases to acquiring additional genetic changes that included the mutation in the p53 tumor suppressor gene.[5] In the few cases where resection was performed, MNG and foci of papillary carcinoma were found on histologic examination in addition to anaplastic thyroid carcinoma.[5]

In some cases, anaplastic thyroid carcinoma can be associated with the presence of low grade differentiated cancer in the thyroid, and it was reported that radiation therapy to the differentiated tumor plays a role in the transformation to an undifferentiated tumor.[6]

Due to the dismal prognosis and lack of any effective treatment, FNA is a very attractive diagnostic tool and is highly recommended. The sensitivity is very high, and an accurate diagnosis can be achieved in the vast majority of cases. In a review of 20 cases of anaplastic thyroid carcinoma, Chang et al were able to make the diagnosis in 18 cases (90% sensitivity).[7]

Because of its rarity, large series with detailed immunohistochemical evaluation are not available. However, from the few that were studied, anaplastic thyroid carcinoma thyroid tumor cells usually express cytokeratin 7 but are not immunoreactive for cytokeratin 20.[8] Lack of expression of thyroglobulin and thyroglobulin transcription factor is not unusual and is explained by the lack of differentiation.[8] Since medullary thyroid carcinoma can be an important mimic and is treatable, it should always be ruled out. Simple use of amyloid stain and calcitonin is usually adequate. In summary, anaplastic thyroid cancer can occur after long-standing Multinodular goitre. Establishing the diagnosis by FNAC can be achieved and will save these patients major surgical intervention.

CONCLUSION

Anaplastic thyroid carcinoma is an aggressive, undifferentiated thyroid carcinoma that can be diagnosed by FNAC. A background of long standing multinodular goitre is a very rare presentation.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Werneau JL, Do Cao C. Anaplastic thyroid carcinoma. Ann Endocrinol (Paris). 2008;69:174-80.

2. Cannizzaro MA, De Mari A, Fazzi C, Mazzone G, Terminella A, Fiorenza G, et al. Anaplastic carcinoma of the thyroid: long-term survival. Minerva Chir. 1993;48:1293-9.
3. Vescini F, Di Gaetano P, Vigna E, Pascoli A, Cacciari M. Anaplastic thyroid carcinoma in a 49 year-old woman with a long-standing goiter: a case report. Minerva Endocrinol. 2000;25:81-3.
4. Kapps DS, LiVolsi VA, Sanders MM. Anaplastic carcinoma following well-differentiated thyroid cancer. Etiological considerations. Yale J Biol Med. 1982;55:521-8.
5. Shingu K, Kobayashi S, Yokoyama S, Fujimori M, Asanuma K, Ito KI, et al. The likely transformation of papillary thyroid carcinoma in to anaplastic carcinoma during postoperative radioactive iodine-131 therapy: report of a case. Surg Today. 2000;30:910-3.
6. Crille G Jr, Wilson DH. Transformation of a low grade papillary carcinoma of the thyroid to an anaplastic carcinoma after treatment with radioiodine. Surg Gynecol Obstet. 1959;108:357-60.
7. Chang TC, Liaw KY, Kuo SH, Chang CC, Chen FW. Anaplastic thyroid carcinoma: review of 24 cases, with emphasis on cytodiagnosis and leukocytosis. Taiwan Yi Xue Hui Za Zhi. 1989;88:551-6.
8. Miettinen M, Franssila KO. Variable expression of keratins and nearly uniform lack of thyroid transcription factor 1 in thyroid anaplastic carcinoma. Hum Pathol. 2000;3:1139-45.

Cite this article as: Uthirakumar G, Reshma S, Chithra M. A rare case of multinodular goitre turning in to anaplastic carcinoma. Int Surg J 2019;6:2999-3001.