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Case Report

Anaplastic carcinoma of thyroid: with osteoclast like giant cells: an extremely unusual finding in fine needle aspiration cytology

Mourouguessine Vimal[1]*, Tukkaram Chitra[2]

[1]Department of Pathology, Sri Manakula Vinayagar Medical College and Hospital, Kalitheerthalkuppam, Madagadipet, Puducherry 605107, India
[2]Department of Pathology, Karpaga Vinayaga Institute of Medical Sciences, GST Road, Chinna Kolambakkam, Palayanoor PO, Madurantagam Tk, Kancheepuram 603308, Tamilnadu, India

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***Correspondence:**
Dr. Mourouguessine Vimal,
E-mail: drvimalm@gmail.com

ABSTRACT

Anaplastic carcinoma of thyroid is a very rare malignant entity with aggressive behaviour. The FNAC finding of Osteoclast like giant cell in this malignancy is a very rare event with only hand full of cases are reported in the literature. This case report highlights the significance of cytological diagnosis of Anaplastic carcinoma of thyroid with Osteoclast like giant cell in a 70 year old man using simple FNAC technique and its role in determining the treatment plan.

Keywords: Anaplastic carcinoma of thyroid, Osteoclast like giant cells, Fine needle aspiration cytology

INTRODUCTION

Anaplastic carcinoma of thyroid is a very rare and highly aggressive thyroid malignancy with a mortality of more than 90% in 6 months after diagnosis. The presence of Osteoclast like giant cells in Anaplastic Thyroid carcinoma is a rare finding and the diagnosis made with FNAC is reported so far only in 4 cases in medical literature.[1-3] This case is presented to highlight the significance of cytological diagnosis using simple FNAC technique which will aid in determining the treatment plan.

CASE REPORT

A 70 year old man presented with swelling in the neck for the past 30 years and he complained of sudden increase in the size of the swelling for the past 1 month. The patient had history of increasing breathlessness and dysphagia. There was no history of pain or fever. Physical examination revealed an 8x9cm hard, nodular neck mass, moving with deglutition with erythema of the overlying skin. Cervical lymph nodes were not palpable. Patient was euthyroid clinically and his thyroid function tests were within normal limits. Imaging findings were suggestive of an aggressive malignancy.

Fine Needle Aspiration cytology (FNAC) of the swelling was done by standard procedure. The smears were highly cellular with a haemorrhagic background and showed neoplastic cells arranged singly and in dyscohesive clusters. The individual cells were highly pleomorphic with marked nuclear anisokaryosis, clumped chromatin irregular nuclear membranes, prominent nucleoli and brisk mitotic activity. There were many osteoclast like multinucleated giant cells with dense cytoplasm with fuzzy cytoplasmic membrane and round to ovoid multiple bland looking packed nuclei with smooth nuclear membrane and fine chromatin, scattered throughout the smears. The patient denied for surgical intervention and was lost to follow up.

Figure 1: Clinical photograph of the patient with huge neck swelling with erythema of the overlying skin.

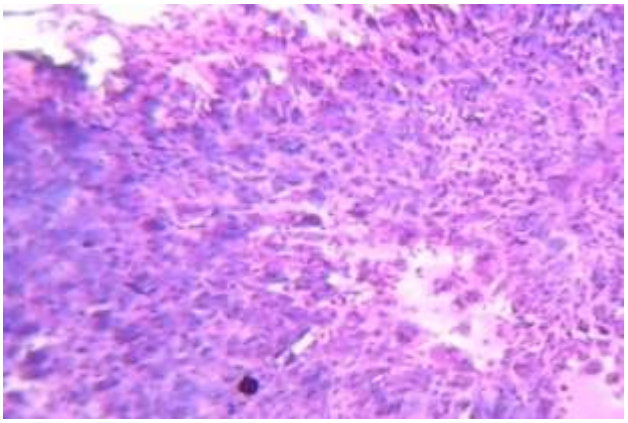

Figure 2: Fine needle aspiration of the swelling – low power view showing hypercellularity and numerous osteoclast like Giant cells.

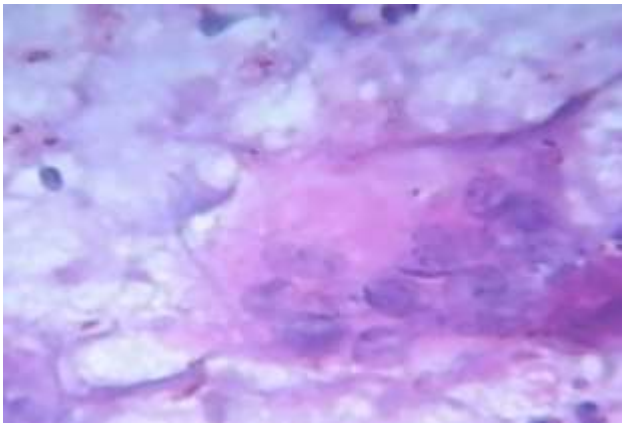

Figure 3: Fine needle aspiration of the swelling – high power view showing osteoclast like giant cell.

DISCUSSION

Anaplastic carcinoma of the thyroid is a very rare and one of the most aggressive of all human malignancies.[4,5] Though it accounts for only less than 5% of all thyroid malignancies, but contributes to more than half of all mortalities due to thyroid cancer. The mortality rate is more than 90% with a survival rate of only 6 months after making the initial diagnosis.[6] The histogenesis of anaplastic carcinoma of the thyroid has been a controversial issue for many years. Previously some authors thought it to be a form of thyroid sarcoma and some postulated its origin from C cells and therefore as a form of Medullary carcinoma. Now currently most pathologists agree its origin from the follicular cells of the thyroid gland.[7] But the tumour cells do not retain the biological characteristics of the normal follicular epithelial cells including iodine uptake and thyroglobulin synthesis.[8]

Histologically, most cases of anaplastic carcinoma of the thyroid show spindle cell, giant cell and squamoid cell patterns; all these 3 subtypes may coexist in many instances and they does not predicts the patients outcome.[9] Multinucleated giant cells are found on thyroid aspirates in cases of anaplastic carcinoma of the thyroid, papillary carcinoma, subacute thyroiditis, Hashmoto's thyroiditis, nodular hyperplasia and Langerhans cell histiocytosis. Giant cells of pleomorphic type is usually seen in conventional Anaplastic carcinoma and usually there are not so many osteoclast-like giant cells.[10] The multinucleated giant cells encountered in Benign nodular hyperplasia of the thyroid with cystic degeneration usually appears foamy which can be contrasted with the dense appearing cytoplasm in osteoclast like giant cells in anaplastic carcinoma of the thyroid.

Presence of co-existing well differentiated follicular or papillary thyroid carcinoma in many cases suggests the fact that Anaplastic carcinoma can have its origin from pre-existing differentiated carcinomas of the thyroid.[7] Anaplastic Thyroid carcinoma is well known for its wide invasiveness with extensive infiltration of the adjacent soft tissue and vasculatures of the neck region. The tumour can have extensive areas of necrosis and haemorrhage.

CONCLUSIONS

The association of multinucleated giant cells with Anaplastic carcinoma of the thyroid is a rare event[7] and the presence of Osteoclast like giant cells is even much more rarer.[3] The diagnosis was made with FNAC cytology is so far made only in 4 cases reported in medical literature.[1-3] Hence this case was presented to highlight the significance of cytological diagnosis using simple FNAC technique which will aid in determining the treatment plan.

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REFERENCES

1. Mehdi G, Ansari HA, Siddiqui SA. Cytology of anaplastic giant cell carcinoma of the thyroid with osteoclast-like giant cells—A case report. Diagn Cytopathol. 2007;35(2):111-2.
2. Lee JS, Lee MC, Park CS, Juhng SW. Fine needle aspiration cytology of anaplastic carcinoma with osteoclastlike giant cells of the thyroid. A case report. Acta Cytol. 1996;40(6):1309-12.
3. Joseph L, Ravi A, Rekha A, Rao S, Aarthi R, Panicker V. Osteoclastoma-like anaplastic carcinoma of the thyroid. J Cytol. 2008;25(2):65.
4. Batori M, Chatelou E, Straniero A, Ruggieri M. Anaplastic thyroid carcinoma: a case of a young women that reports a survival exceeding 6 years. Eur Rev Med Pharmacol Sci. 2007;11(1):69.
5. Güneş P, Aker FV, Erkan M, Demirtürk P, Dulundu E. Incidental anaplastic thyroid carcinoma: a case report. Turk J Pathol. 2008;24:54-8.
6. Ragazzi M, Ciarrocchi A, Sancisi V, Gandolfi G, Bisagni A, Piana S. Update on anaplastic thyroid carcinoma: morphological, molecular, and genetic features of the most aggressive thyroid cancer. Int J Endocrinol. 2014:790834.
7. Valand AG, Ramraje SN, Shedge R, Aware S. Anaplastic thyroid carcinoma with osteoclast-like giant cells. J-Assoc Physicians India. 2004;52:585-6.
8. Chiacchio S, Lorenzoni A, Boni G, Rubello D, Elisei R, Mariani G. Anaplastic thyroid cancer: prevalence, diagnosis and treatment. Minerva Endocrinol. 2008;33(4):341-57.
9. Han KM, Kim DH, Lee W. Aspiration Cytology of the Osteoclastic Variant of Anaplastic Thyroid Carcinoma: with Special Emphasis on the Undifferentiated Mononuclear Cells. Korean J Pathol. 2010;44(6):682.
10. Esmaili JH, Hafez GR, Warner TF. Anaplastic carcinoma of the thyroid with osteoclast-like giant cells. Cancer. 1983;52(11):2122-8.

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