Journal of
Endocrinology and Thyroid Research
ISSN: 2573-2188

Juniper Publishers
key to the Researchers

Case Report
Volume 1 Issue 2 - March 2017
DOI: 10.19080/JETR.2017.01.555560

J Endocrinol Thyroid Res

Sporadic Carcinosarcoma of Thyroid Gland Resistant to Chemotherapy: A Case Report

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Submission: February 07, 2017; **Published:** March 21, 2017

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Abstract

Thyroid carcinocasarcoma (TC) is a very rare, aggressive epithelial and mesenchymal cell thyroid malignancy similar to anaplastic carcinoma. Very limited information was appeared in literature about its behaviour and therapeutic strategies, although it has a high mortality rate despite of the multi-directional therapeutic approach. All types of thyroid malignancies originate from thyroid glands epithelial element while this rare neoplasm, thyroid carcinosarcoma (TCS) arise from both epithelial as well as stromal cells of thyroid gland and accounts for less than 0.1 percent of all thyroid carcinomas, more commonly observed in elder women [1,2]. According to WHO classification for thyroid tumours, carcinosarcoma stands in the variant of anaplastic carcinoma [2,3]. Carcinosarcoma protrudes; when these carcinomatous epithelial elements attain the morphology of sarcoma cells, mostly resemble spindle and giant cells. Intruding behaviour of this carcinoma leads to poor prognosis and survival after surgery [4]. In this case report a 54-year old person with history of TC with symptoms of thyroid ulcerated mass with active bleeding is being presented.

Keywords: TCS (Thyroid carcinosarcoma); Malignancy

Case Report

A case of 54 years old male came with the history of thyroidectomy in November 2014, who was diagnosed case of malignant neoplasm thyroid gland. Histopathology reported carcinosarcoma of the thyroid gland (high grade) with pulmonary metastastatic deposits. Scattered multinucleated giant cells, bizarre cells with areas of fibrosis and osteoid formation were also identified in pathology. He had no any family history of thyroid cancer or any other cancer in the past.

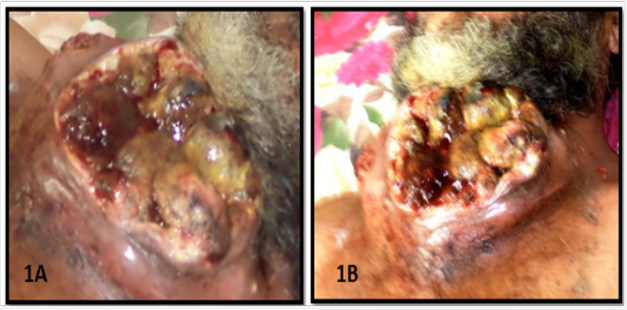

Figure 1: Showing TC in different views.

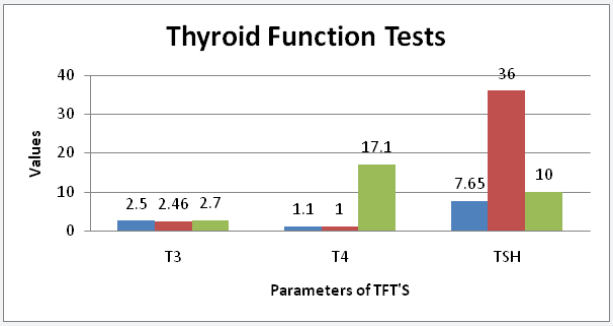

Figure 2: Levels of thyroid functions tests: Blue bar) Pre Iodine ablation, Red Bar) Post iodine ablation, Green bar) Post-thyroxin replacement.

After thyroidectomy in November 2014, patient came with the situation presented in figures (Figure 1a & 1b) in Feb 2015. Subsequent after the surgery TFT (Thyroid Function Test) (Figure 2), MUGA (Multigated Acquisition) scan (Figure 3) and CBC (Complete Blood Count) has been done. Immuno-chromatographic assay of patient showed that he is anti HCV

positive and HbsAg negative, predicting the patient a known case of hepatitis. Thyroid scans show a large thyroid mass with retro-sternal extension revealing that the patient has residual thyroid tumor which further spread with local extension into thoracic inlet (Figure 4).

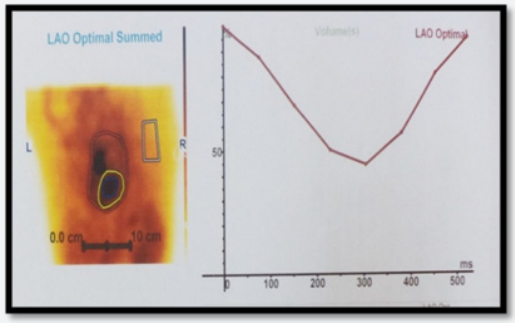

Figure 3: Multi-gated acquisition scan (MUGA) showing ejection fraction 55%.

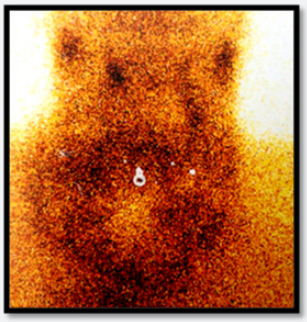

Figure 4: Thyroid scan showing extensive local spread of TC with significant uptake of technetium 99m.

Pre-chemotherapy MUGA scan showed adequate cardiac function as doxorubicin based chemotherapy was planned. Post-test evaluation the concerned oncologist decided to give 4 cycles of chemotherapy of the combination of cisplatin and doxorubicin from Feb to May 2015. C.

Figure 5: I-131 whole body scan (anterior view) showing uptake in thyroid however no uptake is seen in extensive CST.

First cycle of the chemotherapy (CISPLASOL 60mg and ADRIABLASTINA 80mg) was received by patient on 24th February, 2015 and the second cycle was received on 19th March, 2015. The third cycle was received on 11th April, 2015. There was minimal response of the patient to three cycles. The oncologist referred the patient for Iodne-131 ablation therapy trial. After three cycles of chemotherapy, iodine-131 scan of patient was conducted to see uptake in the TC (Figure 5). Gamma camera scanning revealed no uptake of iodine-131 at tumor site when compared to the thyroid scan and clinical spread. After negative I-131 scan next chemotherapy was planned on 6th May, 2015.

After Two cycles of chemotherapy TFT showed significant changes with rise in TSH levels upto 36. However thyroxin replacement was promptly started which stabilized TSH levels after one month as shown in the Figure 2.

Discussion

Thyroid carcinosarcoma (TCS) is well known for its invasiveness and high fatality rate, seen most commonly in elder patients. Literature predicts that this sort of patients survive hardly for six months or less after diagnosis or even surgery [4]. Carcinosarcoma of thyroid gland aggravate when epithelial cell morphology acquire resemblance of sarcomatoid elements. Studies revealed that in this neoplasm follicular carcinoma presents intermixed with osteosarcoma and chondrosarcoma [5] and is related to the undifferentiated anaplastic thyroid carcinoma. Limited clinical knowledge about neoplasm is available in the literature makes us unable to declare the aetiology of its poor prognosis. Due to resemblance to anaplastic carcinoma of thyroid gland, estimate can be made that probably the p53 mutation leads to this aggressive malignancy. p53 point mutations accounts for 60-80% of anaplastic thyroid carcinoma leaving a clue towards this neoplasm [6]. Evidence of immunohistochemical stains of vimentin, PAX-8, pan-keratin, and p63 positivity towards undifferentiated anaplastic carcinoma with sarcoma is also observed [4].

Complete thyroidectomy of the patient in this report has been performed due to diagnosis with carcinosarcoma with associated high grade sarcoma. Proper diagnostic report from authentic laboratory was available along with detailed immune-histo-chemical pathological examination [7,8]. Patient unfortunately could not receive any chemotherapy at the time of diagnosis due to socio economic factor. Hence on second presentation of patient this aggressive carcinosarcoma after 3 months post-surgery was un-resectable and only palliation could be offered. On the basis of evaluation of scans, palliative chemotherapy was offered to handle the aggressiveness of neoplasm. Patient carcinoma was resistant to any chemotherapy with minimal response even after four cycles. No case of such a resistance has been reported earlier. And due to such a poor prognosis, very less survival rate is seen in these patients [9-11].

How to cite this article: Rashid R, Zainab s, Nidda S, Ali R N, Saqib R.Sporadic Carcinosarcoma of Thyroid Gland Resistant to Chemotherapy: A Case Report. J Endocrinol Thyroid Res. 2017; 1(2): 555560. DOI: 10.19080/JETR.2017.01.555560

Conclusion

Further study is needed for such cases. Multidisciplinary approach with detailed immunohistochemistry is required to manage these resistant cases.

Acknowledgement

We acknowledge the help of Miss Anum Bukhari and Dr. Ameer Fawad zahoor for compilation of data and Dr. Tatheer Fatima for help in investigations.

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