

Case Report

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Papillary Thyroid Cancer with distant metastases to Bilateral Pulmonary, Cutaneous and multiple Intramuscular deposits: Case and a Review of the Literature

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Case Report

45 year old Indian male presented with history of swelling in neck and change in voice for one year. He was diagnosed after USG as a case of Multinodular Goitre. Fine-Needle Aspiration Cytology (FNAC) of swelling was reported as follicular neoplasm. Subsequently he underwent total thyroid ectomy and right neck dissection. 10x6.5x4 cm tumour was removed involving right lobe, left lobe and isthmus. Histopathology was not consistent with FNAC and reported as papillary thyroid carcinoma - conventional type. pT3N1bMx. Post surgery patient was ablated with 120 mci of high dose I 131 therapy. (Figure 1). The patient was started on levothyroxine (0.1 mg daily). His thyroglobulin levels were initially low (<4 ng/ml; TSH, 0.3 mU/liter), but increased during the follow-up period. Four months after the initial diagnosis and treatment, he developed small painless, purple colour dermal nodules (Figure 2). Cutaneous and intramuscular nodule cytopathology was positive for Metastatic Papillary Thyroid Carcinoma (Figure 3). Whole body 18 FDG PET/CT was acquired to assess present status as well as progression of disease. 18 FDG PET/CT reported -Abnormal focal increased bilateral Fluorodeoxyglucose (FDG) uptake in multiple bilateral lung nodules (Figure 4). Increased focal FDG uptake in following- multiple intra muscular deposits left 6th intercostal space, Left gluteus intermedius, paravertebral muscle on left side at level of L4 and L5 (Figure 5), right pectoralis major anterior

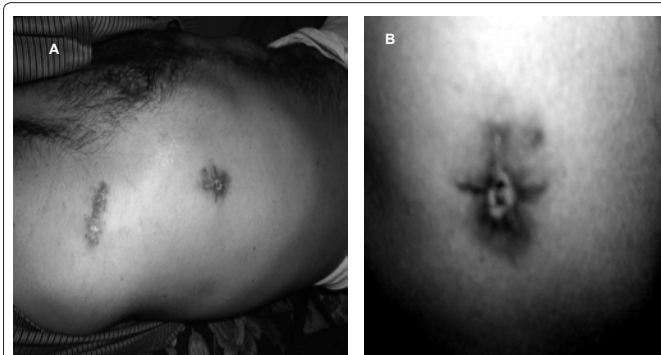


Figure 2(A, B): Cutaneous metastases of PTC. A 1.5 cm nodule on the left hypochondrium was well circumscribed, with an intact overlying epidermis, and has characteristic red-purple coloration. The patient reported no adverse symptoms, such as tenderness, bleeding, or pruritus.

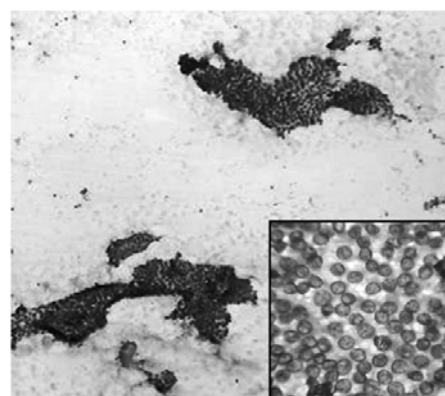


Figure 3: A biopsy was also obtained of the right psoas. Sections show an infiltrating neoplasm composed of cells arranged in a papillary pattern, separated by fibrous stroma. Individual cells have round to oval clear nuclei, with nuclear overlapping, moderate amount of eosinophilic cytoplasm. The neoplastic cells are CK 7 and thyroglobulin positive. They are negative for CK 20.

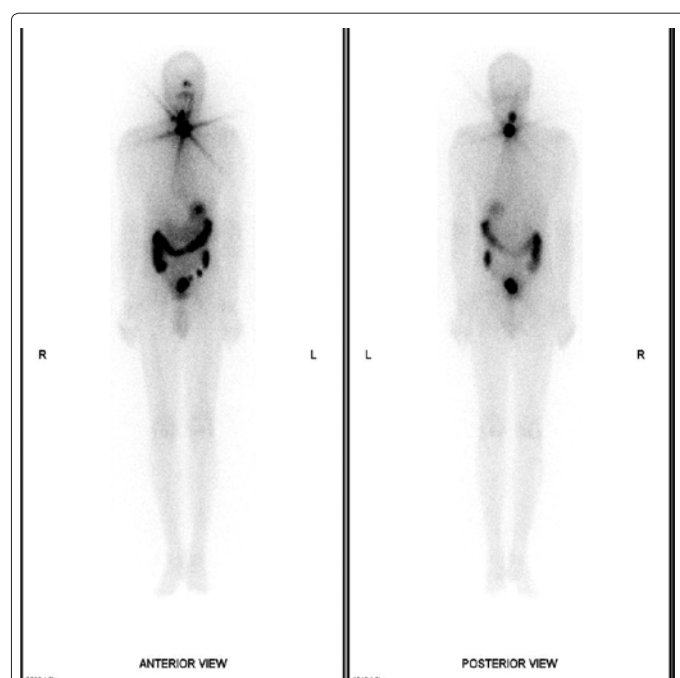


Figure 1: Patient was orally ablated with 120 mci of I131. Post therapy WBI scan showed significant I 131 uptake in thyroid bed as expected. Subcutaneous nodules show no I 131 uptake

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Figure 4: Abnormal focal increased FDG uptake seen in multiple bilateral lung nodules (SUV Max 12.4).

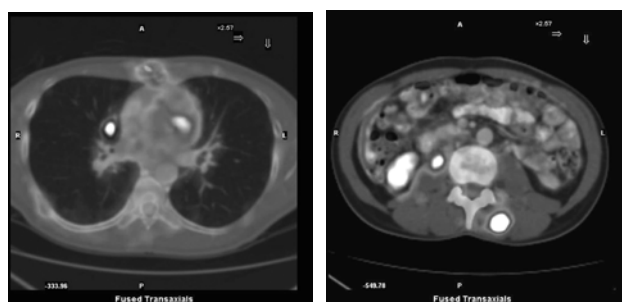


Figure 5: Abnormal increased focal FDG uptake in following multiple intra muscular deposits; (A) Paravertebral muscle on left side at level of L4 and L5 (SUV Max 17.6).



Figure 6: Abnormal increased focal FDG uptake right pectoralis major anterior to 3rd rib.

to 3rd rib (Figure 6), Right psoas muscle, left longissimus collii, bilateral latissimus dorsi to left upper arm. Fine needle aspiration cytology of a

dominant lung nodule was consistent with PTC and stained positive for thyroglobulin. Upon withdrawal of T4, his thyroglobulin rose to 845 ng/ml. In view of extensive metastases second 131I treatment (170 mci) was given to patient [1].

Discussion

Papillary Thyroid Cancer (PTC) is often multifocal and commonly metastasizes to regional lymph nodes (in 40% of cases). Sites of distant metastases from PTC are the lung (49%) [2], bone (25%), lung and bone (15%), and central nervous system (12%). [3] Other unusual sites of distant metastasis being the liver, kidneys, and adrenal glands. Rarely initial presentation with only muscle metastases [4] or skin [5] metastases is possible. Only 42 cases of skin metastases [6-9] are reported in literature, out of which the primary tumor was PTC in 57% and follicular thyroid carcinoma in 42% [5]. Dermal lesions typically present as slowly growing erythematous or purple plaques or nodules, usually on the scalp, [10] face, or neck. The presence of dermal metastases portends a poor prognosis, because visceral metastatic disease is almost invariably present. Median survival after diagnosis of cutaneous metastases is only 19 months [10-12].

In our case, the primary tumor was a conventional variant papillary carcinoma, and the patient presented within four months after primary treatment (total thyroidectomy and modified neck dissection, followed by 131I therapy) with widespread metastatic disease [13] involving bilateral lungs (multiple nodular lesions), skin nodules, and multiple muscle deposits. This patient appears to be first case presenting with three sites of metastatic deposits on skin, muscle and lung within short span of four months.

Rare cases of muscle metastasis described in literature are all connected with Follicular Thyroid Carcinoma (FTC) [14]. To the best of our knowledge, this is the second report of a PTC metastasis to the thigh muscle [4].

The presence of new dermal lesions in a patient with a history of thyroid cancer should lead to a full examination of the skin for cutaneous nodules that may prove to be metastases. The possible association of dermal, lung and muscle metastases should be borne in mind, and the finding of one should lead to a search for the other. Although treatments may not provide much benefit, understanding the clinical manifestations determines the overall management of the patient.

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