Letters to Editor

Lytic Skull Metastasis from Follicular Carcinoma of Thyroid: A Case Diagnosed on Cytology

Sir,

We report a lesion which turned out to be metastasis to the scalp from follicular thyroid cancer (FTC). An 80-year-old female presented for fine-needle aspiration cytology (FNAC) of a gradually increasing painless scalp swelling for 1-year duration [Figure 1a]. On examination, she had a prominent neck swelling [Figure 1b]. FNAC of the neck swelling had revealed multinodular goiter 3 years previously.

FNAC of the scalp swelling revealed a malignant tumor with a possibility of thyroid metastasis. Thereafter, FNAC from the thyroid swelling was suggestive of a follicular neoplasm. An interesting feature of this case is that the follicular architecture of the neoplasm was maintained at the metastatic site, which helped in the diagnosis of the lesion.

Her blood workup was within normal limits. Computed tomography (CT) of the head and neck demonstrated destruction of the upper portion of occipital bone on the left side with a necrotic soft tissue swelling measuring 8.2 cm × 4 cm in the scalp region. A 6.4 cm × 6.2 cm well-defined mass was seen in relation to the right lobe of the thyroid. CT findings suggested of a metastatic lesion in the occipital bone with a possible primary in the thyroid [Figure 2a and b]. The patient was then referred for surgical workup.

Papillary thyroid cancer (PTC) and FTC are the two most common follicular cell-derived differentiated forms of thyroid carcinomas, accounting for approximately 70% and 10% of all thyroid malignancies.[1] Usually, these differentiated cancers are characterized by slow growth, indolent biological behavior, and rare metastasis. As in this patient, FTC is usually seen in elderly females, with a long-standing nontoxic multinodular goiter (50.2%).[2] Neoplastic change in an existing goiter is most probably brought about by chronically elevated thyroid-stimulating hormone levels.[2]

FTC is considered more aggressive than papillary carcinoma because of its propensity for vascular invasion.[1] Potential sites of distant spread include the lung, bone, brain, liver, bladder, and skin.[6]

Bone metastasis is the second most common form of metastases after lung in FTC,[4] accounting for 10%–40%. Bone metastasis in the skull accounts for 2.5%–5.8% only.[3]

One of the large case series of skull metastases from all types of thyroid cancers was done by Nagamine et al.,[6] and in that series, mean time from the diagnosis of thyroid tumor until discovery of skull metastasis was 23.3 years. The mean 10-year survival of differentiated cancers was reported as 27%. However, the mean survival was reduced to 4.5 years in patients presenting with skull metastasis. In the literature review, only 38 cases of scalp metastases from thyroid carcinoma are reported with FTC, representing the maximum number of cases (46%) followed by PTC at 35%, and with medullary thyroid carcinoma, contributing 16% of the cases.[1]

A follicular neoplasm should be regarded as potentially malignant and surgically excised, as it is impossible to cytologically differentiate between a follicular adenoma and carcinoma as the diagnosis is based on histological
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Evidence of capsular or vascular invasion. However, the presence of skull metastasis was the distinguishing feature in establishing primary malignancy in this case. Further histopathological findings on biopsy correlated with the cytological impression.

Metastatic tumors presenting as soft tissue lesions are relatively rare and can create diagnostic confusion both clinically and morphologically. Knowledge of the cutaneous metastatic patterns of thyroid carcinomas can help us overcome the difficulty in diagnosis. Furthermore, the presence of a multinodular goiter is not necessarily an indicator of benign disease.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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