Atypical Parathyroid Adenoma: A Diagnostic Pitfall for Malignancy in Fine-Needle Aspiration Biopsy

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Clinical Presentation

We present a case of a 48 years old female with history of recurrent kidney stone since 4 years ago, and multiple fracture in leg and arm since 2 years ago. Neck ultrasonography reveals firm mass 1.2x1.6x2.9 cm in the right thyroid lobe with suggestive malignant features. Laboratory finding shows elevated level of blood calcium (13.1 mg/dl) and PTH (1603 pg/ml).

Cytological Finding

The patient underwent fine needle aspiration biopsy for the neck mass and it reveals cluster of epithelial cells with pleomorphic nuclei and some are hyperchromatic, necrotic debris and feature suspected as vascular invasion. The cytopathology report signed as suggestive for carcinoma parathyroid with suggestion for histopathology confirmation.

Discussion

Histopathology finding reveals tumor cells consist of chief and oxyphil cells in nodular and trabecular arrangement, separated by thin to thick fibrous tissue. The cells are round to oval, focally there are cells with pleomorphic and hyperchromatic nuclei, there is no capsular/vascular/ neural invasion. The histopathology report most consistent with atypical adenoma of parathyroid. From this finding we learn that we must be careful to diagnose a malignancy in parathyroid especially in cytopathology because the hallmark of malignancy of this organ is not lay in the nuclear detail but in the invasion of certain structure. The feature that seem as vascular invasion in cytology is debatable, it could be just the arrangement of cells and vascular that juxtaposed to each other.

Conclusion

1. The distinction between atypical parathyroid adenoma and parathyroid adenoma could be quite difficult. Clinical, cytological, and histological finding should help us arrive to the correct diagnosis
2. In parathyroid lesion with malignancy feature in cytopathology, make a suggestion for histopathological confirmation is mandatory.