A Large Functioning Water Clear Cell Functioning Parathyroid Adenoma

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Clinical Image

A 76-year-old man was referred to the Endocrine Unit for Primary Hyperparathyroidism (PHPT).

The patient appeared in good health. Serum calcium and PTH levels were 11.9 mg/dL (NR: 8.6–10.2), and 75 ng/L (NR: 8–40), respectively. A 7-cm lump was identified at neck ultrasound and Computed Tomography (CT) (Figure 1, panels A,B). 99mTc-Sestamibi scan showed an intense uptake in left para-tracheal region (Figure 1, panels C,D). The patient underwent surgery. Microscopic examination showed an encapsulated mass with small nodules, cords or solid sheets of parathyroid large, polyhedral, clear cells with marked vacuolation of cytoplasm and a honeycomb appearance (Figure 1, panels D,E). Immunohistochemical analysis was positive for PTH and chromogranin. These findings were consistent with the diagnosis of water-clear cell parathyroid adenoma, a rare cause of PHPT [1-2].

Figure 1: Contrast-enhanced computed tomography in the axial (A) and sagittal (B) sections. A-7 cm heterogeneous-hypodense/hyperdense mass is demonstrated in the left para-tracheal space of the neck extending in the posterior mediastinum (arrows). Parathyroid scintigraphy with 99mTc-Sestamibi (planar scan, 2 hr post injection). (C). A focus of increased uptake at the upper pole of the left thyroid lobe (arrow). Parathyroid 99mTc-Sestamibi SPECT/CT imaging (fuse transaxial SPECT/CT section) (D) The panel shows the left-superior parathyroid adenoma (arrow). Morphology of the water cell parathyroid adenoma. Hematoxylin and eosin x4 (E) and x20 (F) Cords or solid sheets of parathyroid large, polyhedral, clear cells with marked vacuolation of cytoplasm and a honeycomb appearance.
After surgery, the patient’s calcium level decline and normocalcemia was confirmed during follow-up. The patient gives written informed consent to publish the case.

References
