Secreting clear cell tumour of the parathyroid
Konstantin Bräutigam, Reto Kaderli, Sabina Berezowska

DESCRIPTION
A 77-year-old woman presented with the laboratory-based diagnosis of primary hyperparathyroidism. Osteodensitometry showed early stage osteoporosis. 99m Tc-MIBI Single Photon Emission Computed Tomography/Computed Tomography (99mTc-MIBI SPECT/CT) and ultrasonography suggested a large adenoma at the inferior pole of the right thyroid lobe.

Parathyroidectomy revealed an encapsulated homogeneous nodule, composed of clear, relatively uniform cells with round nuclei and foamy cytoplasm due to multiple vacuoles (figure 1), most likely representing endoplasmatic reticulum or Golgi apparatus as assessed by transmission electron microscopy (figure 2). Combined with immunohistochemical expression patterns for parathyroidal origin, those findings are typical of water clear cell adenoma, a rare type of parathyroid adenoma and cause of primary hyperparathyroidism with less than 20 cases reported. Histology (figure 1) strongly resembles metastatic renal cell carcinoma, a true diagnostic pitfall, as it may metastasize to the neck as initial presentation, is notorious for causing late metastases decades after initial tumour removal and may induce hypercalcaemia.

Postoperative parathyroid function was normal.

Learning points
► Pathologists and clinicians should be aware of water clear cell adenoma, as it is a diagnostic pitfall and may be confused with other clear cell neoplasms, for example, metastatic renal cell carcinoma.
► Water clear cell adenoma is distinctively rare.

Contributors RK has provided the relevant clinical information. KB and SB implemented the images and pathologic content. All authors wrote and approved the manuscript for publication.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES