

## WATER CLEAR CELL ADENOMA OF PARATHYROID GLAND: A RARE LESION

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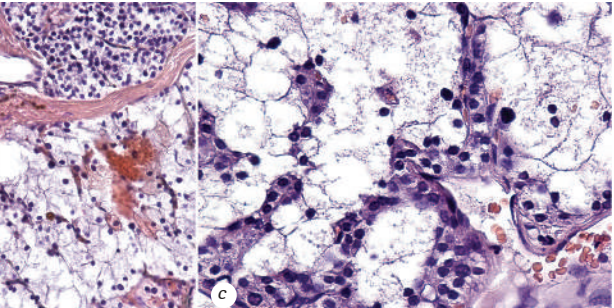
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Water clear cell adenoma (WCCA) is one of the rarest forms of primary hyperparathyroidism associated solitary adenomas [1]. According to Boutzios *et al.* [2], the frequency of WCCA is less than 1% of all primary parathyroid hyperplasia.

We herein report a case of primary hyperparathyroidism in a 64-year-old woman with adenoma of the upper left parathyroid gland. Preoperative biochemical analysis revealed serum calcium level of 3.0 mmol/l (reference range 2.15–2.50 mmol/l), serum phosphorus level of 0.64 mmol/l (reference range 0.81–1.45 mmol/l) and intact parathyroid hormone level of 117.4 pg/ml (reference range 15.0–65.0 pg/ml). Bone densitometry revealed os-

teopenia and loss of bone density. Surgical resection of parathyroid glands was performed. Grossly, the specimen was presented by pale gray nodule 30×21×25 mm in capsule weighing 5.34 g. Histopathological examination revealed “nest” pattern areas of large clear cells with foamy vacuolated cytoplasm (Figure, a) and in some areas with granular cytoplasm (Figure, b). Cell nuclei were dense with mild atypia and prominent nucleoli (Figure, c). It was resembled as paraganglioma and renal clear cell adenoma. For clarification of the diagnosis, immunohistochemical analysis was conducted for S100, PAX8, CD10 and vimentin. This analysis did not demonstrate an ex-

pression of PAX8, CD10 or vimentin, which excluded the possibility of renal clear cell carcinoma metastasis. An absence of S100 expression eliminated the diagnosis of paraganglioma. The diagnosis of WCCA of parathyroid gland was conducted based on the above data. After surgical resection of the neoplasm, the levels of serum calcium and intact parathyroid hormone level decreased.



**Figure.** Nest pattern of growth of WCCA (a) (hematoxylin-eosin, original magnification × 40); granular cytoplasm of the WCCA cells (b) (hematoxylin-eosin, original magnification × 200); dense nucleus with mild atypia (c) (hematoxylin-eosin, original magnification × 400)

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In 1994, the first case of WCCA was described by Kovacs *et al.* [3]. Since then, over 20 cases of this tumor have been described (according to searches in Pubmed, Scopus and Google Scholar). This neoplasm has a low endocrine activity, making clinical manifestation only when the adenoma become large enough for causing high serum calcium levels [1]. In our study, we also observed high levels of serum calcium, but intact parathyroid hormone level also increased. The differential diagnosis of WCCA includes metastatic renal cell carcinoma in the parathyroid gland and paraganglioma.

### REFERENCES

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Abbreviation used: WCCA – water clear cell adenoma of parathyroid gland.