WATER CLEAR CELL ADENOMA OF PARATHYROID GLAND: A RARE LESION

D.A. Zinovkin1, M.Yu. Zhandarov2, M.Z.I. Pranjol3,*

1Department of Pathology, Gomel State Medical University, Department of Pathology, Gomel 246000, Belarus
2Department of Pathology, Republican Research Center for Radiation Medicine and Human Ecology, Department of Pathology, Gomel 246040, Belarus
3School of Life Sciences, University of Sussex, Falmer, Brighton BN1 9RH, UK

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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 osteopenia 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 expression 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.

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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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)