Images – Oncocytic adrenocortical carcinoma: A rare tumor variant

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Adrenocortical carcinoma (ACC) is an uncommon malignancy, with an incidence of 1–2 per million per year, and has three main histological variants: oncocytic, myxoid, and sarcomotoid.[1] Oncocytic variants are mainly composed of eosinophilic cells with focal nuclear atypia and an abundance of mitochondria.[2]

The malignant potential of oncocytic adrenal tumors can be predicted using the Lin-Weiss-Bisceglia (LWB) criteria.[3] First, this proposes that oncocytic tumors share common characteristics, known as the definitional criteria (predominantly cells with eosinophilic granular cytoplasm, high nuclear grade, and diffuse architectural pattern), which are not deterministic for malignancy but used instead for classification. For distinguishing malignant potential, the major criteria include a mitotic rate of >5 mitoses per 50 high power fields (hpfs), atypical mitoses, or venous invasion. The minor criteria include large size (>10 cm diameter and/or >200 g), necrosis, capsular invasion, or sinusoidal invasion. The presence of any major criteria stratifies a mass as malignant; the presence of any minor criteria suggests a tumor of borderline or uncertain malignant potential. If no features are present, the mass is likely to be benign (oncocytoma).[3]

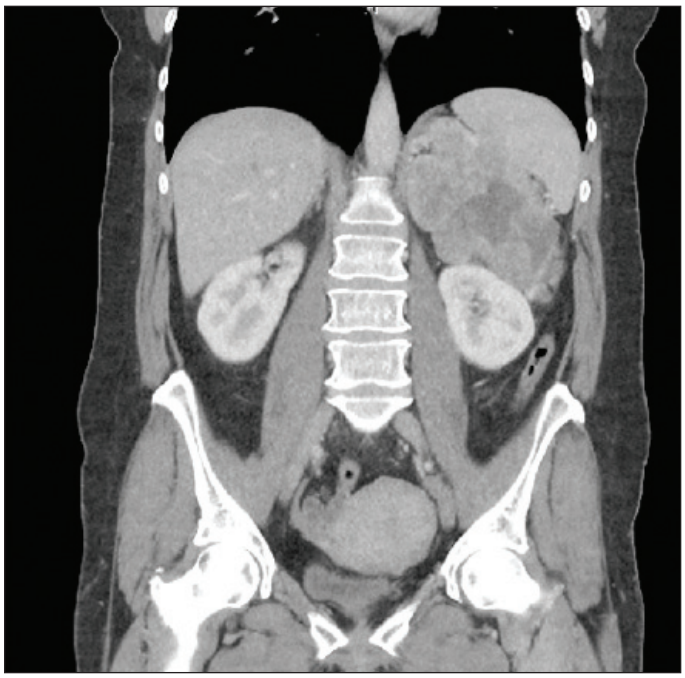

Fig. 1. Coronal computed tomography scan demonstrating a 13.3 x 7.7 x 10.8 cm left adrenal mass with internal necrosis.

Fig. 1 demonstrates the case of a 55-year-old woman with a large left adrenal mass found on computed tomography scan (13.3 x 7.7 x 10.8 cm). Pathology reported an adrenal mass weighing 900 g and measuring 16.5 cm x 15.6 cm x 5.4 cm. The mass had a lobulated, tan appearance with focal areas of hemorrhage and necrosis. The tumor cells were noted to be calretinin-positive and chromogranin-negative, supporting a cortical lesion and ruling out the diagnosis of a pheochromocytoma. The tumor cells were noted to be sheet-like and highly eosinophilic, with greater than 20 mitoses per 50 hpfs and occasional atypical mitoses. This supported the diagnosis of an ACC, oncocytic subtype. Using the Lin-Weiss-Bisceglia criteria for classification of oncocytic adrenal neoplasms, this mass met two major criteria (mitotic rate of >5 per 50 hpfs and atypical mitoses) and two minor criteria (large size >10 cm and/or 200 g and necrosis), indicating that it was a malignant oncocytic ACC.

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