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Renal Oncocytoma

A renal oncocytoma is a benign epithelial neoplasm that comprises 5-9% of renal tubular epithelial tumors. Grossly, it looks like a brown tumor with a central radial scar. Histologically, excessive mitochondria can be seen. This tumor normally arises from renal cortex cells and can present with hematuria, flank pain, and/or an abdominal mass. Renal oncocytoma are capable of malignant transformation into oncocytic renal cell carcinoma (RCC) and thus should be resected surgically in most cases.

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Characteristics

Benign Epithelial Tumor

Benign-bunny with E-pick Cells and Tumor-guy

A renal oncocytoma is a benign epithelial cell tumor which comprises ~5% of all RCCs. As it is a benign epithelial tumor, there is an excellent prognosis.

Central Radial Scar

Center-bullseye Radial-tire Scarface

Renal oncocytomas are often described as "brown tumors" with a sharp central stellate scar. Though this is characteristic of oncocytomas, it is only seen in 1/3 of cases. Further, renal cell carcinomas can also demonstrate a central scar.

Excessive Mitochondria

Up-arrow Mitochondria

Renal oncocytomas consist of large, acidophilic, mitochondria-rich tumor cells ("oncocytes") with granular cytoplasm and without perinuclear clearing. This is similar to chromophobic RCC, except that in renal oncocytoma there is no perinuclear halo with cells occurring as tumor nests (i.e. no perinuclear clearing).

Renal Cortex

Kidney Cortez

This tumor arises from the intercalated cells of the tubular system. An oncocytoma is not confined to the kidneys and can develop in the thyroid, pancreas, and/or pituitary gland.

Clinical Features

Hematuria

Red-urinal

The classic triad of any RCC (including oncocytic RCC) consists of hematuria, flank pain, and a palpable flank mass. Painless or microscopic hematuria is the most common finding. It should be noted that only about 5-10% of patients present with this triad and greater than 25% present with 1+ atypical symptoms usually related to paraneoplastic syndromes and/or disseminated disease.

Flank Pain

Flank Pain-bolt

Flank pain can occur in later stages and correlates to larger tumors.

Abdominal Mass

Abdominal Mass

If the tumor grows to a sufficient size, it may be palpable during an abdominal examination.

Considerations

Malignant Transformation

Malignant-man Transformer

Renal oncocytomas are not invasive but are capable of transforming into a malignant oncocytic RCC.

Surgical Resection

Surgeon

Though benign, renal oncocytomas are often surgically resected (especially if tumor increases in size), as they may transform into a malignant oncocytic RCC.

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