Juxtaglomerular Cell Tumor

140

Definition

Juxtaglomerular cell tumor (JGCT) is a benign neoplasm of the kidney. It originates from the smooth muscle cells of the glomerular afferent arteriole (juxtaglomerular apparatus). It is also known as reninoma.

Epidemiology and Presentation

JGCT is an exceedingly rare neoplasm typically presenting in young adults (mainly between 25 and 40 years), with a female prevalence. It is often associated with signs/symptoms of hyperreninism such as hypertension, hyperaldosteronism, and hypokalemia. Clinical differential diagnosis includes other renin-producing neoplasms (e.g., renal cell carcinoma, Wilms tumor, mesoblastic nephroma, hepatoblastoma, lung carcinoma, pancreatic adenocarcinoma).

Pathology

JGCT microscopic appearance is variable. The lesion is generally composed of sheets of homogenous round cells with granular eosinophilic or clear cytoplasm; capillaries with hemangiopericytoma-like growth pattern are usually numerous, and the stroma (composed of hyalinized or myxoid tissue) can be scarce or abundant. Mitoses, necrosis, or pleomorphism is rare.

Biomarkers

JGCT stain positive for PAS (cytoplasmic granules), vimentin, renin (strong and diffuse), SMA, and CD34; it stains negative for cytokeratins and HMB45.

S. Mocellin, *Soft Tissue Tumors*, https://doi.org/10.1007/978-3-030-58710-9_140

Prognosis

JGCT is a benign tumor.

Therapy

Nephron-sparing surgery is the treatment of choice.

Suggested Readings

Hagiya (2020) Juxtaglomerular cell tumor with atypical pathological features: report of a case and review of literature. Int J Surg Pathol 28(1):87–91

Inam (2019) Juxtaglomerular cell tumor: reviewing a cryptic cause of surgically correctable hypertension. Curr Urol 13(1):7–12

Jiang (2020) Increased FDG uptake on juxtaglomerular cell tumor in the left kidney mimicking malignancy. Clin Nucl Med 45(3):252–254

Krishnan (2020) Juxtaglomerular cell tumor in a young male presenting with new onset congestive heart failure. Urol Case Rep 31:101189