Giant oncocytoma of kidney
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Patient: 40 years, female

Clinical History:
A 40 year old female presented with complaints of dragging sensation and heaviness in left side of the abdomen with palpable lump. CT scan showed a large left renal mass with homogeneous appearance, moderate enhancement and central hypoattenuating scar. Post surgical histopatholgy proved it to be an oncocytoma.

Imaging Findings:
A 40 year old female presented with chief complaints of dragging sensation and heaviness in left side of the abdomen, since last 6 months. Physical examination revealed a firm non tender mass in left renal fossa. Laboratory investigations were non-contributory. Patient was referred for a C.T. scan. C.T. scan revealed a large 13 x 10 x 6 cm homogenous, enhancing mass lesion originating from the upper and middle poles of the left kidney, displacing rest of the kidney inferiorly. A central hypodense hypo-enhancing area with stellate spoke wheel configuration was seen within the mass lesion. It was seen to displace the stomach and the tail of pancreas anteriorly and small bowel loops anterolaterally. There was no adenopathy and the renal veins & IVC were normal. The possibilility of renal oncocytoma was suggested. However, in view of the large size of the lesion, a differential of RCC was also included. The patient was taken up for surgery and a left nephrectomy was performed. Histopathological analysis of the
excised mass revealed a large population of polygonal cells with oxyphil rich cytoplasm, suggestive of oncocytoma.

**Discussion:**

Renal oncocytomas (oxyphil adenomas) are rare benign epithelial renal tumors, accounting for less than 5% of all solid renal neoplasms. They are made up of polygonal cells with eosinophil rich cytoplasm and have a slight male preponderance (M:F=1.7:1). Cytogenetically they are derived from the collecting duct cells. Familial occurrence has been described in the Birt-Hogg-Dube syndrome. Atypical presentations including bilateral, multiple and calcified lesions are also described. Giant oncocytomas and diffuse infiltration of the kidney with oncocytomas (oncocytomatosis) have also been described. Presentation of oncoytoma with renal cell carcinoma (RCC) in the other kidney has also been mentioned. Its development in patients on long term dialysis - a consequence of oncocyte hyperplasia in walls of cysts is also known. They are usually detected incidentally and have a benign clinical course. On CT, they are homogenous, well defined encapsulated lesions and may show a central stellate scar. The scar has been described to have a spoke wheel appearance and is the only part of the tumor showing reduced attenuation. In comparison, RCCs are invasive, ill-defined lesions with frequent venous thrombosis. The presence of any other hypodense area apart from the scar is considered a marker of RCC. Using this criteria, 82% of the oncocytomas smaller than 3cm and 67% of lesions greater than 3cm can be diagnosed correctly and 58% of small (<3%) RCCs and 84% of large RCC’s (>3%) can be diagnosed correctly. Since the CT findings are often non specific, other modalities have been used to improve specificity - imperative in case of patients with a solitary kidney. On MR, they are generally homogenous lesions without areas of hemorrhage or necrosis, appearing hypointense on T1 and hyper intense on T2 images. A peripheral capsule and central scar are also seen. RCCs on the contrary are ill defined lesions which are iso to hypointense on T1 weighted images and show areas of hemorrhage and necrosis. However, in lesions smaller than 5cms, these findings may not always be seen. The bias towards malignancy in case of renal masses, especially large, continues. In view of these limitations, the need for tissue diagnosis is paramount and expectant management is not advocated. Biopsy is hamstrung by sampling errors, histological variations and risk of needle tracking of tumor, if the lesion turns out to be a RCC. Hence surgical exploration with total nephrectomy, as was done in our patient, is the accepted line of management. So, while on imaging the possibility of oncocytoma may be suggested, final confirmation is only after surgery. In conclusion, renal oncocyotmas are rare benign renal neoplasms. They are characterized by homogeneity and the presence of a central scar. The reliability of these criteria falls off as the size of the lesion exceeds 3cms. In the present case, these criteria were met in spite of the large size the lesion.

**Differential Diagnosis List:** Giant oncocytoma of left kidney

**Final Diagnosis:** Giant oncocytoma of left kidney

**References:**


Figure 2

Description: Origin:

Image: [CT Scan Image]

Parameters:
- Matrix: 512 x 512
- Tube Voltage: 120 kVp
- Tube Current: 350 mA
- Rotation Time: 0.75 seconds
- Image Quality: 1.0x

Note: Image details and interpretation require medical expertise.
Figure 3

Description: Origin: