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Pathology

ONCOCYTOMA OF KIDNEY IN A CASE OF CALCULOUS CHOLECYSTITIS : A CASE REPORT

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ABSTRACT Renal oncocytoma is one of the most unusual benign lesions, usually diagnosed postoperatively, since their differentiation from renal cell carcinoma is challenging. The present study reports a rare case of oncocytoma of left kidney in a 45 year old female found incidentally on laprotomy for cholecystectomy . Relevant clinical datas were retrieved. A presumptive diagnosis of renal cell carcinoma was made preoperatively and radical nephrectomy was performed and was diagnosed as oncocytoma on histolopathological examination. Although rare and diagnostic tools are emerging resection of tumour and subsequent histopathological examination is the management of choice.

KEYWORDS : Renal cell carcinoma , Benign Renal neoplasm, central scar, Incidental

INTRODUCTION :

Oncocytomas are uncommon renal neoplasms and often an incidental findings during imaging procedures. Very rarely they are identified during a surgical procedure for some other clinical condition Oncocytoma, originating from renal tubular cells, is a benign epithelial tumor that accounts for about 5% of surgically resected renal neoplasms in adults[1]. Grossly, they are typically solid and mahogany brown, often have a central stellate scar and can reach huge sizes. They can be multicentric and bilateral. They may invade the renal capsule or renal vein [2] . They may be inherited, but sporadic cases are much more common [3].Oncocytomas have also been associated with other renal neoplasms like cortical adenomas and renal cell carcinomas [4]. Renal oncocytoma usually has a benign clinical course with excellent long-term outcomes; it has been previously reported that disease-specific survival is 100%.We present a case report of renal oncocytoma identified incidentally during cholecystectomy .

Case Report:

A 45 year old female presented with complaints of right hypochondrial pain. Cholecystectomy was planned and patient was taken up for surgery . Peroperatively a solid well demarcated mass measuring 3 x 3 cm was diagnosed incidentally in the lower pole of the left kidney . A presumptive diagnosis of renal cell carcinoma was made and left radical nephrectomy was done. The right kidney was unremarkable and other laboratory data were within normal limits.

The nephrectomy specimen received showed an ovoid, firm brownish 3 × 3 × 2.8 cm well-encapsulated lesion confined to cortical parenchyma in the lower pole of the kidney. There was no stellate scar. Multiple careful sectioning of the kidney did not reveal any necrosis, haemorrhage or scar. (Figure 1)

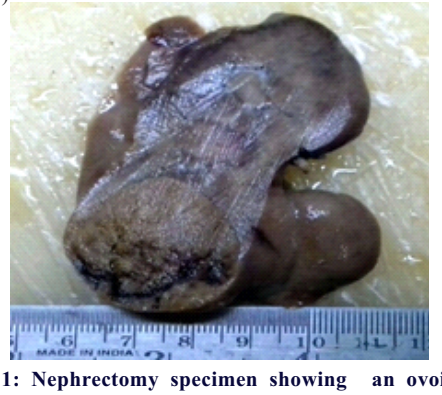

Figure 1: Nephrectomy specimen showing an ovoid, firm brownish well-encapsulated lesion

Microscopic examination revealed that the tumour exhibited a uniform population of plump cells arranged in nests and trabeculae with a granular, acidophilic cytoplasm. The cells didnot exhibit any nuclear atypia and no mitotic figures. (Figure 2,3). The tumor was confined to the renal capsule without lymphovascular invasion and renal vessels, ureter were free of tumour. For immunohistochemical analysis, 4 µm sections were cut and placed on coated slides for incubating with following primary antibodies- pancytokeratin and ki67 . Immunohistochemical analysis revealed a strong positivity for cytokeratin and a low Ki67 index. (Figure 4). The histopathological and immunohistochemical features were consistent with oncocytoma.

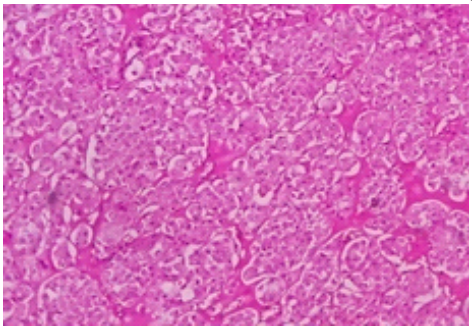

Figure 2: Photomicrograph showing Oncocytoma (H&E,10X)

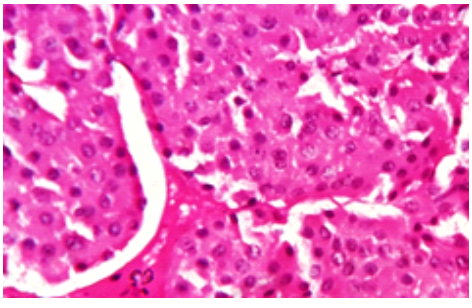

Figure 3: Photomicrograph showing Oncocytoma (H&E,40X)

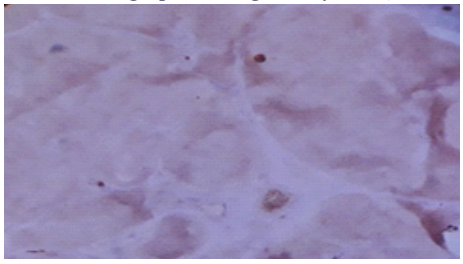

Figure 4 : Photomicrograph of Oncocytoma showing low Ki67 index

DISCUSSION :

Renal oncocytomas, are benign, relatively rare neoplasms, and which represents 5% of all primary renal masses arising from intercalating cells of the cortical collecting ducts[5]. Oncocytoma is considered to be a benign neoplasm in the majority of cases [6]. Oncocytomas are usually observed incidentally during routine examination for non-urological abnormalities. Oncocytomas occur commonly between 40 and 60 years, with a male/female ratio of 2/3:1 [7]. Renal oncocytoma usually appears as a solitary tumor measuring 4-8 cm; however, it may metastasize or infiltrate peripheral renal tissues, causing the tumor to grow larger [8,9].Ciftci et al reported that oncocytomas may occasionally involve fat tissue in up to 20% of cases and lymphovascular structures in up to 5% [10]

Clinically, oncocytomas may be asymptomatic, but symptomatic patients may present with initial signs of haematuria, flank pain or palpable mass. The diagnosis of these tumour may be achieved by computed tomography (CT) or magnetic resonance imaging (MRI). CT may demonstrate the presence of a solid homogeneous lesion with a centrally located scar, and arteriography may reveal a spoke-wheel vascular pattern [8,11].Clinical and laboratory findings usually reveal no specific characteristics, rendering a preoperative definitive diagnosis challenging. Immunohistochemical staining may also aid in the diagnosis of oncocytoma from other renal tumors based on the levels of several markers, including CD10, S100, calcium binding protein A1 and CK7 [12,13,14]. However, these markers do not definitively distinguish oncocytoma from other renal tumors. As a result, numerous patients with oncocytoma are treated aggressively, due to the possibility of renal cell carcinoma.

Radical or partial nephrectomy is performed on the majority of patients, based on their clinical circumstances. Patients with tumors <4 cm in size that are located in the upper or low pole of the kidney may be treated with a partial nephrectomy, whilst all other patients require a radical nephrectomy. However, considering the benign behavior of these tumors, partial nephrectomy is a more appropriate treatment option compared with radical nephrectomy [13]. Lokesh Rana et al and Dinesh sood et al have also reported cases discovered incidentally during imaging procedures for abdominal trauma with a mass arising from the upper-mid pole of left kidney measuring 10.5 x 14 x 16 cm and showing characteristic stellate vascular scar[15].

In this present case report , Radical nephrectomy was performed due to the challenge in making an accurate diagnosis .Grossly the tumour was devoid of central stellate scar and microscopically shows a predominant trabecular pattern and a strong positivity for pancytokeratin and a low Ki67 index. The differential diagnosis is often eosinophilic variant of chromophobe Renal cell carcinoma and the granular variant of conventional Renal cell carcinoma [16].

CONCLUSION:

Renal oncocytoma has a benign clinical course with excellent long-term outcomes. A combination of clinical , radiological and immunohistochemical features may assist lesion characterization, but only histology can provide a definite diagnosis. Oncocytoma should be considered in the differential diagnosis of patients with small renal masses discovered incidentally or with tumors found within a solitary kidney. Though rare, a diagnosis of Oncocytoma should be considered as a differential diagnosis of eosinophilic variant of chromophobe Renal cell carcinoma and the granular variant of conventional Renal cell carcinoma and thereby aiding in initiating an appropriate therapeutic regimen.

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