ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 7, Issue, 04, pp.15116-15118, April, 2015

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

CASE STUDY

GIANT ONCOCYTOMA OF KIDNEY: AN INCIDENTAL DIAGNOSIS

***Vishnoi Jeewan, R., Kori Channabasappa, G., Dontula, Prashant Kumar., Madhu Kumar, Kumar Vijay and Gupta Sameer**

*Senior Resident, Department of Surgical Oncology, King George Medical University, Lucknow, Uttar Pradesh, India

ARTICLE INFO

Article History:
Received 28th January, 2015
Received in revised form
25th February, 2015
Accepted 23rd March, 2015
Published online 30th April, 2015

Key words:

Oncocytoma, Renal cell Carcinoma, Immunohistochemistry.

ABSTRACT

The Oncocytoma is the second most common solid tumor of the kidney after renal cell carcinoma (RCC). Exact etiology is not known. Majority of oncocytoma are asymptomatic and cannot be differentiated from RCC by clinical or radiographic criteria. Very few cases of symptomatic giant oncocytomas of kidney are reported in the English literature. The tumor was incidentally diagnosed, based on the preoperative clinical and radiographic findings; diagnosis of RCC was made. Here, we present a case of fifth largest symptomatic giant oncocytoma of kidney reported till date in the literature.

INTRODUCTION

Renal oncocytomas account for about 3% to 7% of all renal tumors. Males are affected more frequently and the mean age of presentation is 6–7th decade. Most oncocytomas are solitary and unilateral, although 4–5% is bilateral and 13% are multifocal. Oncocytomas are usually of small size (average size 4.9 ±2.7 cm) (Romis *et al.*, 2004). The largest oncocytoma in the literature measured 27×20×15 cm and weighed 4652 g. Another three more giant oncocytoma were reported in literature till date (Ahmad *et al.*, 2011). To the best of our knowledge, we present the fifth largest renal oncocytoma measuring 16x13x10 cm in size and treated successfully by surgery.

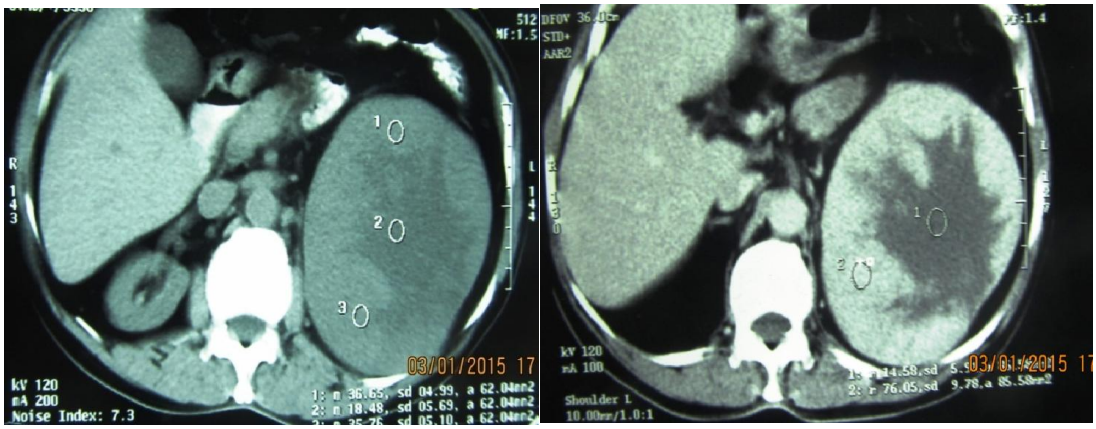
Case Report

A 65-year-old gentleman presented with history of pain abdomen and palpable lump in left lumbar region since 1 year duration. Physical examination revealed palpable lump in left lumber region. Abdominal computed tomography scan revealed a heterogeneously enhancing well defined, large mass (16 × 13 cm), originating from the left upper pole with peripheral enhancement and central hypo dense areas [Fig 1a and 1b]. Preoperative diagnosis of renal cell carcinoma was made. Metastatic work-up was normal and the patient underwent radical nephrectomy and retroperitoneal lymph node sampling. Grossly, mass measuring 16 x 13 x 10 cm mainly in the upper pole of left kidney with solid grey areas and central fibrous scar seen. Resection margin of ureter was clear. Ten nodes were reactive in nature. Histologically, the tumor showed renal epithelial neoplasm. Tumor cells were disposed in nests and acini in hypocellular and myxoid stroma. Tumor cells were round to polygonal, round nuclei with finely granular eosinophilic cytoplasm [Fig 2a-2c]. Immunohistochemistry (IHC) study revealed tumor cells positive for CD 117 and negative for CD10 [Fig 3a & 3B]. Histopathology and immunohistochemistry (IHC) study confirmed the diagnosis of renal oncocytoma. Postoperative course was uneventful and the patient is disease free at 22 months of follow up.

Corresponding author:** ***Vishnoi Jeewan,
Senior Resident, Department of Surgical Oncology, King George, Medical University, Lucknow, Uttar Pradesh, India.

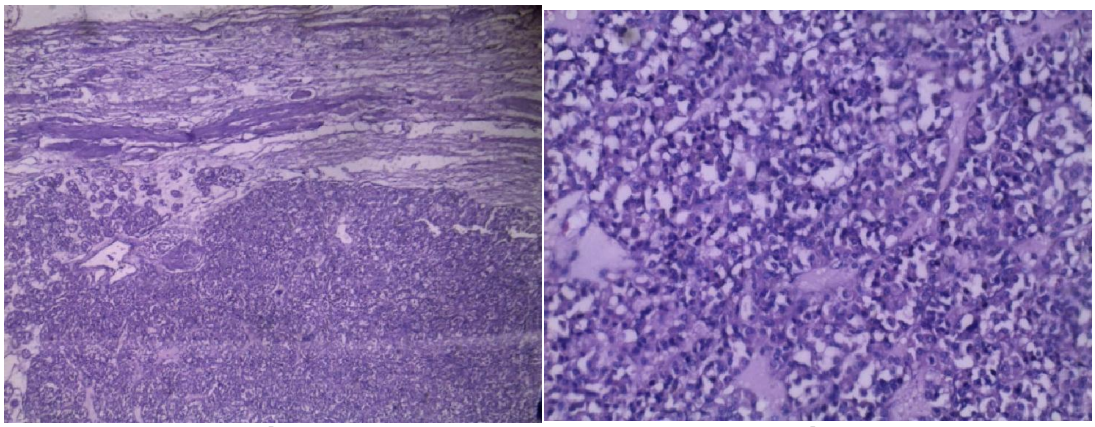
DISCUSSION

Renal oncocytoma was first described by Zippel in 1942. Klein and Valensi reported its benign character with excellent prognosis. The origin of these cells is considered to be the intercalary cell of the cortical portion of the collecting tubule (Klein and Valensi, 1976). Most of renal oncocytomas are asymptomatic at presentation and are discovered incidentally during evaluation for nonurological problems, whereas hematuria and pain occur in a minority of patients (Benatiya *et al.*, 2012). Our patient also presented with complaint of pain in left flank. No reliable preoperative diagnostic differentiation between oncocytomas and RCC can be achieved because of the lack of pathognomonic radiographic signs. CT-scans show oncocytomas to be more homogenous than RCC. It usually

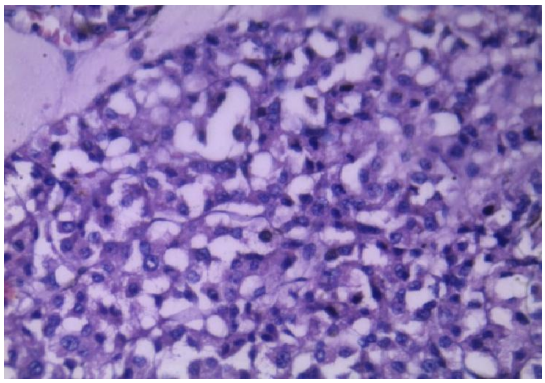


a b

Fig 1a & 1b: CECT scan revealed a contrast enhancing, well defined, heterogeneous large mass (16 × 13 cm) originating from the left upper pole with peripheral enhancement and central hypodense areas.

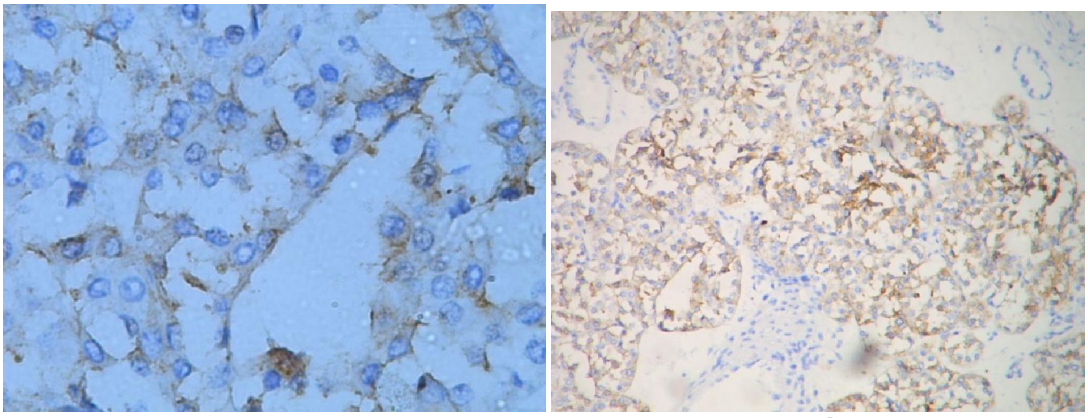


b b



c

Fig 2a, 2b & 2c: Microscopy revealed tumor cells were disposed in nests and acini in hypocellular, myxoid stroma and tumor cells were round to polygonal, round nuclei with finely granular eosinophilic cytoplasm



a b

Fig 3a & 3b. Immunohistochemistry reported positive for CD117 and negative for CD 10

reveals a solid homogeneous lesion with a centrally located stellate area of low attenuation; however, this is considered nonspecific and occurs in only 33% of oncocytomas. In the present study, patient had central hypodense area with peripheral enhancement on CT scan. On MRI, most oncocytomas demonstrate low signal intensity relative to the renal cortex on T1-weighted images. One fourth of patients also demonstrate a central stellate scar on MRI. Angiography sometimes reveals the typical spoke-wheel formation (Benatiya *et al.*, 2012 & Davidson *et al.*, 1993). Renal oncocytomas are typically well-circumscribed and often encapsulated. Macroscopically, the cut surface of the tumor is generally mahogany brown or dark red in color. A central scar is occasionally observed. Histologically, tumor cells with finely granular cytoplasm proliferate in an edematous, myxomatous or hyalinized stroma with a nested, tubulocystic, solid or trabecular pattern. Ultrastructurally, tumor cells contain many mitochondria with lamellar cristae. Mitochondrial DNA alterations are consistently observed in renal oncocytomas (Schatz and Lieber, 2003). In chromosomal analysis, renal oncocytomas comprise a heterogenous group.

Combined loss of chromosomes Y and 1, rearrangements affecting band 11q12-13, involvement of 12q12-13, loss of 14q, and the lack of combination of LOH at specific chromosomal sites have been reported. Like oncocytoma, the chromophobe subtype of renal cell carcinoma is also derived from the distal tubules and histological similarities exist. However, distinctive cytogenetic and IHC suggest individuality of these tumors (Kuroda *et al.*, 2003) [7]. Recent data proposed that cytokeratin staining profiles may be useful for discriminating oncocytoma from its renal mimics: oncocytomas are typically CK7 and CK 10 negative while most chromophobe RCCs are positive for these markers. Oncocytoma are usually positive (71%-100%) for CD117 while clear cell RCC are negative for it (Liu *et al.*, 2007). Renal oncocytoma has a benign clinical course with excellent long-term outcomes. Although radical nephrectomy is the usual treatment, a conservative approach should be considered whenever there are signs of clinical and radiological presumptions (Anastasiadis *et al.*, 2010).

Conclusion

Renal Oncocytoma is the second most common solid tumor and is usually an incidental diagnosis. The present case emphasizes the difficulty in differentiation between an oncocytoma and renal cell carcinoma preoperatively on clinical and radiological findings. Central stellate scar and a spoke-wheel pattern of feeding arteries are unreliable diagnostic signs and are of poor predictive significance. Diagnosis is usually made postoperatively based upon histopathological findings.

Abbreviations

RCC- Renal cell carcinoma , MRI- Magnetic resonance imaging , CECT- Contrast enhanced imaging, FNAC- Fine needle aspiration cytology, IHC- Immunohistochemistry ,CK- Cytokeratin, LOH- loss of heterozygosity, CD- Cluster of differentiation.

Consent: Taken.

Conflicts of interest:

No potential conflict of interest relevant to this article was reported.

Acknowledgement

Our sincere thanks to Prof. Ravikant, Vice chancellor, King George Medical University, for guiding and permitting us to publish this article.

REFERENCES

Ahmad, S., Manecksha,. R, Hayes, B.D. and Grainger, R., 2011. Case report of a symptomatic giant renal oncocytoma. *Int J Surg Case Rep*. 2:83-85.

Anastasiadis, A., Dimitriadis, G. and Radopoulos, D., 2010. Incidental giant renal oncocytoma: A case report. *J Med Case Rep*. 4:358.

Benatiya, M.A., Rais, G., Tahri, M., Barki, A., El sayegh, H. and Iken, A. *et al*., 2012. Renal oncocytoma: experience of Clinical Urology A, Urology Department, CHU Ibn Sina, Rabat, Morocco and literature review. *Pan Afr Med J.* 12:84.

Davidson, A.J., Hayes, W.S., Hartman, D.S., McCarthy, W.F., Davis, C.J. Jr, 1993. Renal oncocytoma and carcinoma: failure of differentiation with CT. *Radiology*. 186:693-6.

Klein, M.J., Valensi, Q.J., 1976. Proximal tubular adenomas of kidney with so-called oncocytic features. A clinicopathologic study of 13 cases of a rarely reported neoplasm. *Cancer* 38:906–14.

Kuroda, N., Toi, M., Hiroi, M., Shuin, T., Enzan, H., 2003. Review of renal oncocytoma with, focus on clinical and pathobiological aspects. *Histol Histopathol*. 18:935–942.

Liu, L., Qian, J., Singh, H., Meiers, I., Zhou, X., Bostwick, D.G., 2007. Immunohistochemical analysis of Chromophobe Renal cell carcinoma, Renal Oncocytoma, and clear cell carcinoma an optimal and practical panel for differential diagnosis. *Arch Pathol Lab Med*. 131:1290-7.

Romis, L., Cindolo, L., Patard, J.J., Messina, G., Altieri, V., Salomon L, *et al.,* 2004. Frequency, clinical presentation and evolution of renal oncocytomas: multicentric experience from a European database. *Eur Urol*. 45:53–57.

Schatz, S.M., Lieber, M.M., 2003. Update on oncocytoma. *Curr Urol Rep.* 4:30-5.

****