Research Paper Medical Science

A Case Report of Bosniak Type III Renal Cyst

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KEYWORDS

INTRODUCTION

One third of people older than 50 years develop renal cysts. Although most are simple cysts, renal cystic disease has multiple etiologies.

Broad categories of cystic disease include the following:

- Developmental - Multicystic dysplastic kidney (MCDK)
- Genetic -Autosomal recessive polycystic kidney disease(ARPKD), Autosomal dominant polycystic kidney disease(ADPKD), Juvenile nephronophthisis (JNPHP), Medullary cystic kidney disease (MCKD), Glomerulocystic kidney disease (GCKD)
- Acquired - Simple cysts, acquired cystic renal disease, Medullary sponge kidney (MSK)
- Cysts associated with systemic disease - Von Hippel-Linda u syndrome(VHLS), Tuberous sclerosis (TS)
- Malignancy - Cystic renal cell carcinoma (RCC)

CASE HISTORY

The patient, a 50 yr old male presented to the Surgical OPD with complaints of Right Sided Inguinoscrotal Swelling since 3months.

General examination of patient was conforming to normal parameters and abdominal examination revealed a Right sided Inguinal hernia.

Patient was admitted for routine preoperative workup and surgical management of Right sided Inguinal Hernia.

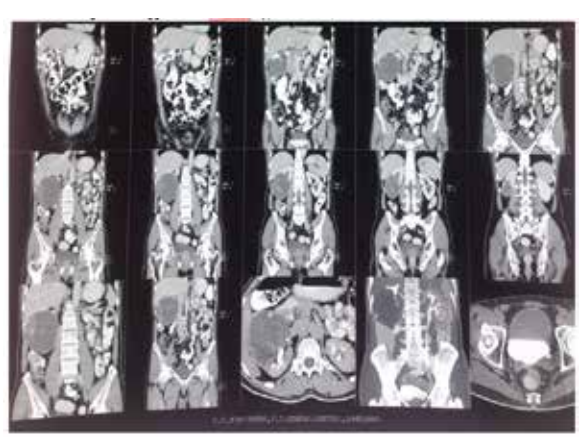
INVESTIGATIONS-IMAGING

On routine USG of Abdomen & Pelvis, incidentally, a 10x8cm complex renal cyst was noted at the lower pole of Right Kidney and CECT Abdomen was advised for further evaluation.

CECT abdomen revealed a 107x97x96mm well defined cystic lesion with nodular enhancing septa and wall, arising from the mid and lower pole of Right Kidney. The lesion was abutting tributary of renal vein and segment artery. However, there is no evidence of thrombosis. No evidence of abnormal calcification.

The lesion abuts medially Right Psoas and Iinferior Vena Cava(IVC) with preserved fat plane. Superiorly and laterally, the lesion abuts the inferior surface of liver with preserved fat plane and the 2nd part of Duodenum medially.

The CECT findings were suggestive of Bosniak Type III lesion.



OPERATIVE INTERVENTION

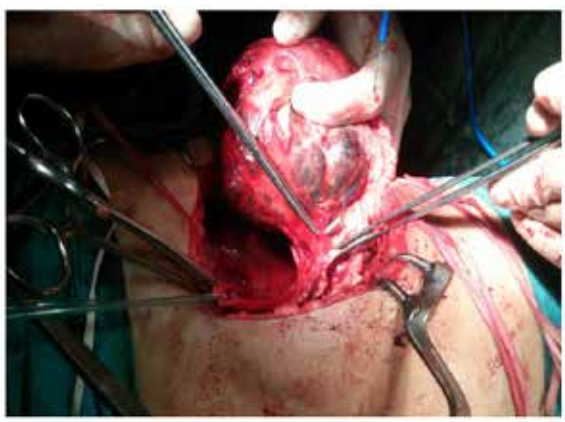
On consulting with the Urosurgery Department, the patient was posted for Right Partial Nephrectomy.

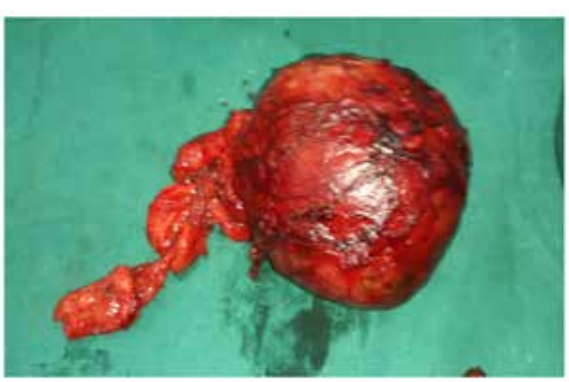
Intra-op, the cyst was found to be multilobulated and approximately 10x8cm in size and was involving the lower half of the

Right kidney. Renal pelvis was uninvolved and a direct branch of renal vein draining the cyst was ligated and divided. There was no evidence of thrombosis.

Patient underwent Right partial nephrectomy after the ureter and renal pedicle were secured and the pedicle was clamped using bulldog clamps. Excision of cystic lesion was performed en-masse with clear margins and no spillage, with overlying Gerota's Fascia and perinephric fat.

A 6Fr DJ stent was inserted and the renal pedicle clamps were removed. The renal capsule was sutured with placement of retroperitoneal fat, following hemostasis.





OUTCOME

Histopathological examination of the tumour revealed Renal Cell Carcinoma with clear cell and papillary features.

The Gerota's fascia, perirenal adipose tissue and capsule were found to be free of tumour.

In the post operative period, the patient recovered uneventfully.

The patient was later referred to GCRI for further evaluation of immunohistochemistry and further management.

DISCUSSION

The differentiation between a benign renal cyst and a cystic RCC remains one of the more common and difficult problems in renal imaging.

When a complex renal cyst is identified, determination of its benign or malignant nature is based on:

- Evaluation of the wall of the lesion; its thickness and contour
- The number, contour, and thickness of any septa
- The amount, character, and location of any calcifications
- The density of fluid in the lesion
- The presence of solid components.

Bosniak Classification

- Category I lesions

Uncomplicated, simple, benign cysts of the kidney. These are by far the most common renal cystic lesions, and in the absence of associated symptoms, no treatment is necessary.

- **Category II**

Complex cysts that are generally benign. These lesions include septated cysts, cysts with calcium in the wall or septum, infected cysts, and hyperdense (high-density) cysts. Its subdivided to differentiate category II lesions that do not require surveillance from category IIF lesions that mandate surveillance. The risk of malignancy for category IIF renal cysts is 5% to 10%, and these lesions should be observed with periodic renal imaging.

- **Category III Lesions**

More complex renal cysts with features that include thickened irregular or smooth walls or septa in which measurable enhancement can be observed.

In the absence of a mitigating factor such as renal trauma or infection, surgical exploration is indicated in healthy patients.

About 50% of these lesions are malignant. Fine- needle aspiration of complex cysts is rarely performed because of concern about sampling error and tumor cell spillage.

- **Category IV lesions**

Cysts with additional solid enhancing portions that provide a definitive diagnosis of malignancy . Category IV lesions are almost invariably cystic RCCs.

CONCLUSION

Simple cysts are the most common cystic renal lesions. They are present in 5% of the general population, increasing in frequency to 25-33% of patients older than 50 years, and account for 65-70% of renal masses.

Cystic RCC accounts for less than 1% of RCC cases.

Simple, intermediate, and suspicious cysts: Simple renal cysts rarely require surgical management to relieve pain or obstruction.

Bosniak category III and IV renal cysts require surgical exploration. Approximately 50% of Bosniak category III cystic renal lesions are malignant. The current standard approach is open exploration with anticipated partial nephrectomy. However, as the experience with laparoscopic exploration and nephrectomy grows, this technique may prove equally reasonable.

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