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Management of Malignant Renal Cyst - Nephrectomy Case Presentation

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Introduction- Renal cysts, in general, may be classified as “simple” or “complex”. “Simple” cysts are best defined using sonographic criteria. The difficulty arises when cysts do not meet the rigid characteristics of the “simple” definition. Therefore, clinicians need to rely on a rapid, safe and accurate system to identify benign versus malignant masses and ultimately have the guidance on nonsurgical or surgical treatment options. Malignant renal cyst is a very rare disease. In literature are prescribed as 0.5-1% of all renal cysts (1, 2). Their clinical symptoms are not specific and are mainly similar to the symptomatology of tumors and simple renal cysts (3, 8). Pre operative diagnostics procedure as intravenous urography -IVU, ultrasonic sonography, computed tomography-CT, magnetic resonance imaging -MRI, diagnostic puncture of cysts and renal arteriography can rarely determine the diagnosis (4, 5). The diagnosis based on Bosniak classification: Bosniak 1, Bosniak 2, Bosniak 2F, Bosniak 3 and Bosniak 4. Therefore the diagnosis is mostly determined by surgical intervention (6, 7). In this study, the authors have presented their case of hemorrhagic malignant renal cyst, which is treated by surgical intervention - nephrectomy.

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MANAGEMENT OF MALIGNANT RENAL CYST NEPHRECTOMY CASE PRESENTATION

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Management of Malignant Renal Cyst – Nephrectomy Case Presentation

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I. INTRODUCTION

Renal cysts, in general, may be classified as “simple” or “complex”. “Simple” cysts are best defined using sonographic criteria. The difficulty arises when cysts do not meet the rigid characteristics of the “simple” definition. Therefore, clinicians need to rely on a rapid, safe and accurate system to identify benign versus malignant masses and ultimately have the guidance on nonsurgical or surgical treatment options. Malignant renal cyst is a very rare disease. In literature are prescribed as 0.5-1% of all renal cysts (1, 2). Their clinical symptoms are not specific and are mainly similar to the symptomatology of tumors and simple renal cysts (3, 8). Pre operative diagnostics procedure as intravenous urography -IVU, ultrasonic sonography, computed tomography-CT, magnetic resonance imaging -MRI, diagnostic puncture of cysts and renal arteriography can rare determine the diagnosis (4, 5). The diagnosis based on Bosniak classification: Bosniak 1, Bosniak 2, Bosniak 2F, Bosniak 3 and Bosniak 4. Therefore the diagnosis is mostly determined by surgical intervention (6, 7). In this study, the authors have presented their case of hemorrhagic malignant renal cyst, which is treated by surgical intervention -nephrectomy.

II. OBJECTIVE

A case of malign hemorrhagic renal cyst in a 32 –year -old woman is reported. The patient was admitted to our hospital for further evaluation of right upper abdominal mass. CT scan and ultrasonic sonography showed a right giant renal cystic mass. The characteristic findings were thick and irregular wall and heterogeneous contents of the cystic mass. The presence of a malignant tumor in the cyst wall was suspected and nephrectomy was performed. The specimen measured 10 x 6 x 4 cm. The cyst contained bloody fluid and a hemorrhagic degenerating mass. Pathohistological examination showed evidence of malignant hemorrhagic renal cyst.

III. PATIENT AND METHODS

We are going to present the case of a female patient referred to our clinic with the initial ultrasound

diagnosis of right giant renal cyst about 10 cm. Physical examination revealed no abnormalities. Given the result of the ultrasound (thick walls and small irregularities) and the possibility of a complicated cyst, we decided to investigate the matter further, and programmed the patient for an enhanced abdominal computer tomography with intravenous contrast.

The enhanced CT images revealed a right kidney cystic mass, with a 10 cm diameter, thick irregular walls with contrast enhancement, hyperdense content, and no pathological lymph nodes or distant metastases. The diagnosis was a Bosniak IV.

IV. BOSNIAK CLASSIFICATION OF CYSTIC RENAL MASSES

Bosniak 1. Simple cyst: Imperceptible wall, rounded. Work-up: nil. Percentage malignant: ~0%.

Bosniak 2. Minimally complex: A few thin <1 mm septa or thin calcifications (thickness not measurable); non-enhancing high-attenuation (due to proteinaceous or haemorrhagic contents) renal lesions of less than 3 cm are also included in this category; these lesions are generally well margined. Work-up: nil. Percentage malignant: ~ 0%.

Bosniak 2F. Minimally complex: Increased number of septal, minimally thickened with nodular or thick calcifications. But no measurable contrast enhancement enhancing. Hyperdense cyst > 3 cm diameter, mostly intrarenal (less than 25% of wall visible); no enhancement. Requiring follow-up: needs ultrasound. CT of follow up -no strict rules on the time frame but reasonable at 6 months. Percentage malignant: ~ 5%.

Bosniak 3. Indeterminate: Thick, nodular multiple septa or wall with measurable enhancement, hyperdense on CT (see 2F). Treatment/work-up: partial nephrectomy or radiofrequency ablation in elderly or poor surgical candidates. Percentage malignant: ~ 55%.

Bosniak 4. Clearly malignant: Solid mass with a large cystic or a necrotic component. Treatment: partial or total nephrectomy. Percentage malignant: ~ 100%.

Our case was classified in stage Bosniak IV. Identifications of malignant cells established the definite diagnosis, while hemorrhagic contents, high lipid content and lactate dehydrogenase -LDH are suggestive of malignancy. After pathological confirmation for malignant kidney cyst and adequate

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treatment, on these patients is likely to achieve long-term survival. The therapy of malignant cysts is always surgical and usually nephrectomy.

V. RESULTS

Patient: Xh.B, female 32 years old. Symptoms: pain and feeling heaviness below right rib arch and right flank, for a long time intermittently and now more frequently. No haematuria noted elevated blood pressure Laboratory

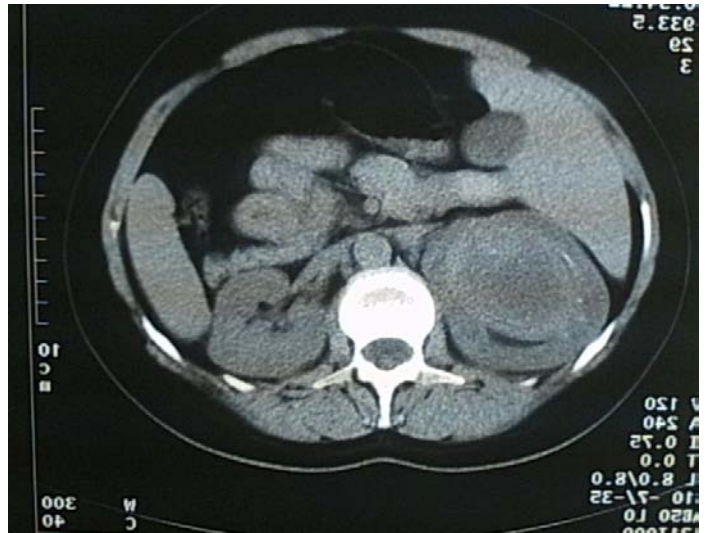
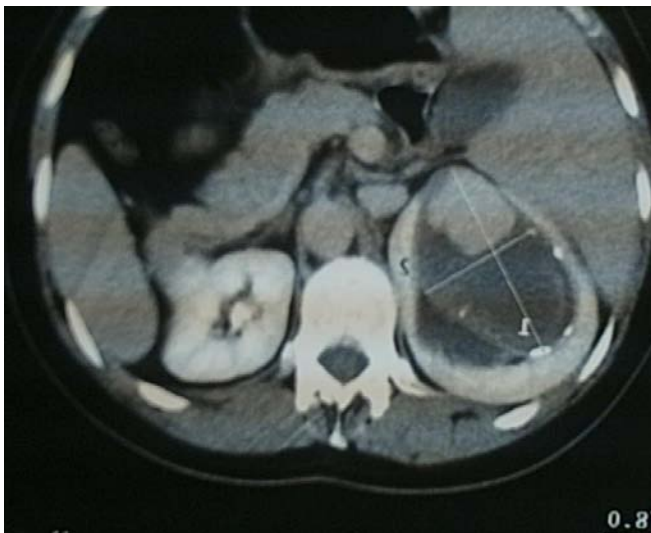
assessment: ESR: 10; Glucose: 4.32; urea: 6.30; kreatinin: 63.2; Hgb: 127; RBC: 3.73; WBC: 7.6l; Hct: 0.36.

Echotomografic findings: There is a large well defined formation that occupies about upper two -three of the right kidney sized 10 x 6 x 4 cm hypoechogenic with hyperechogenic walls.

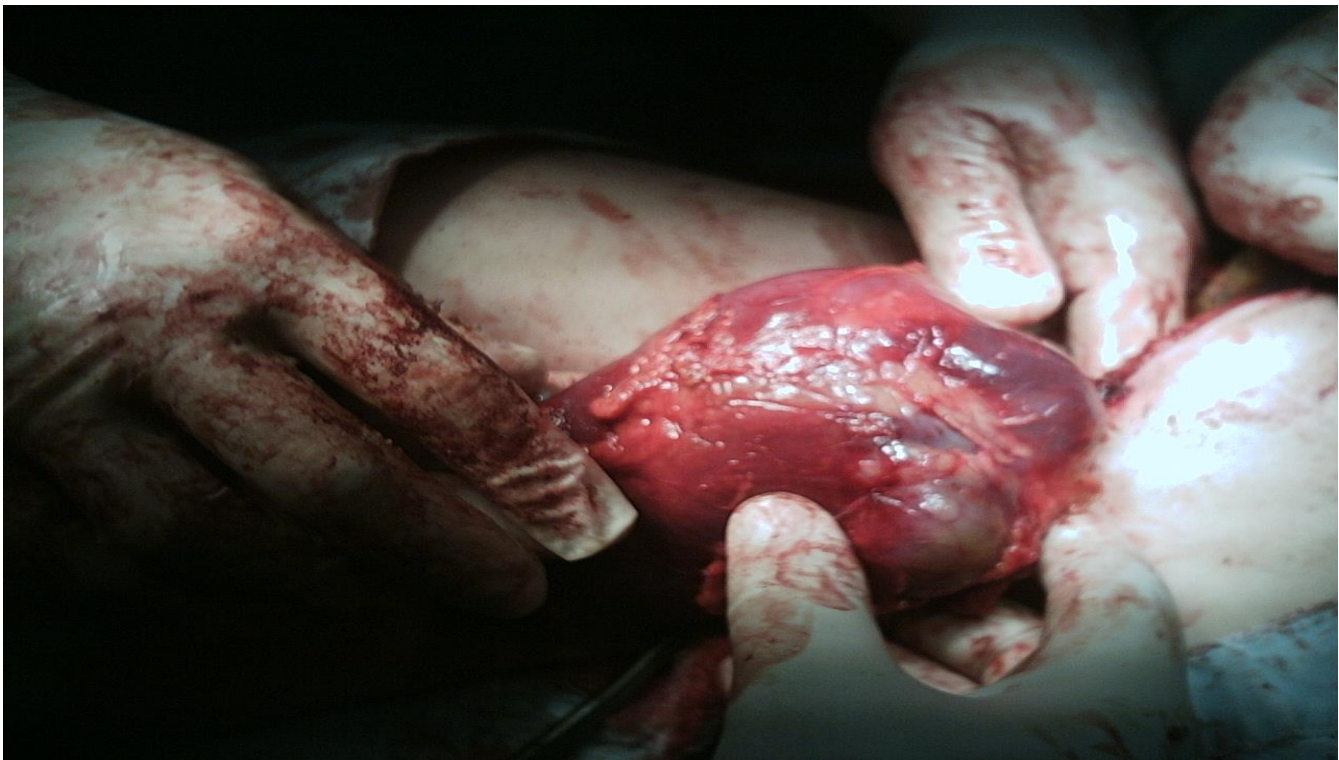
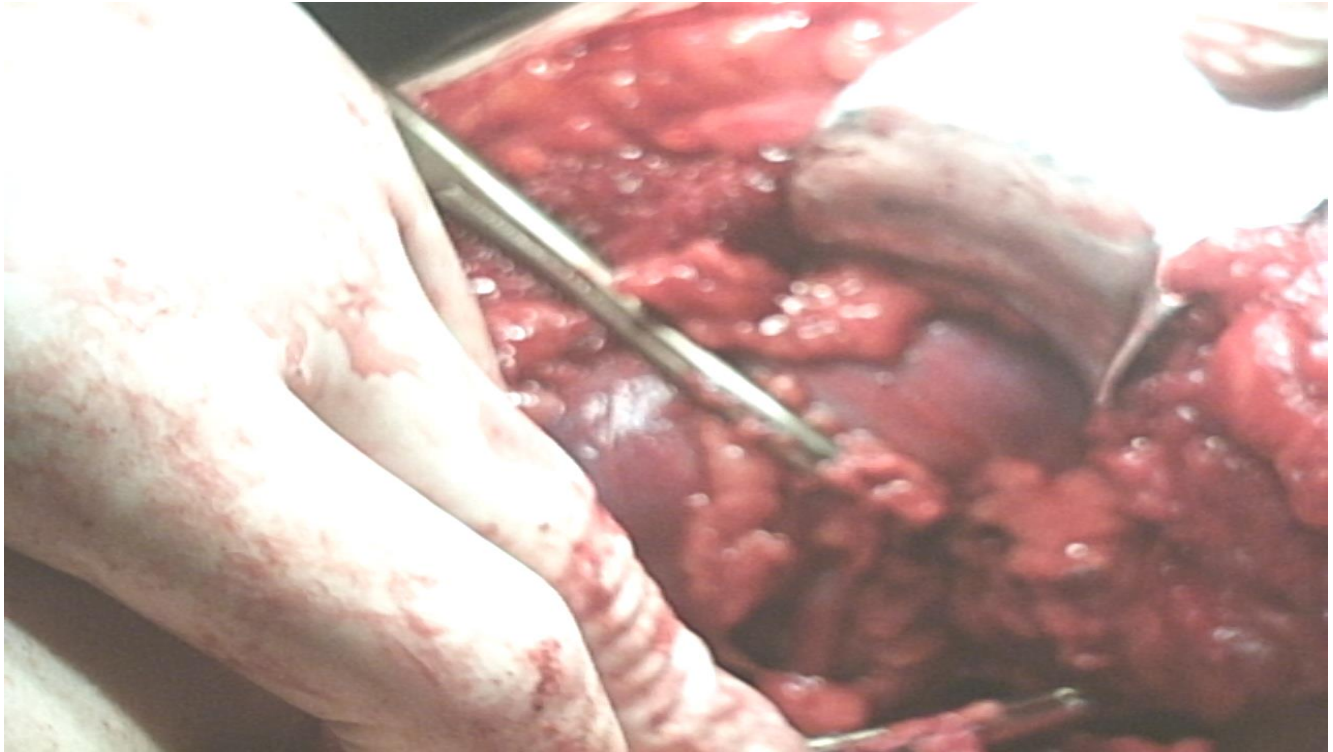


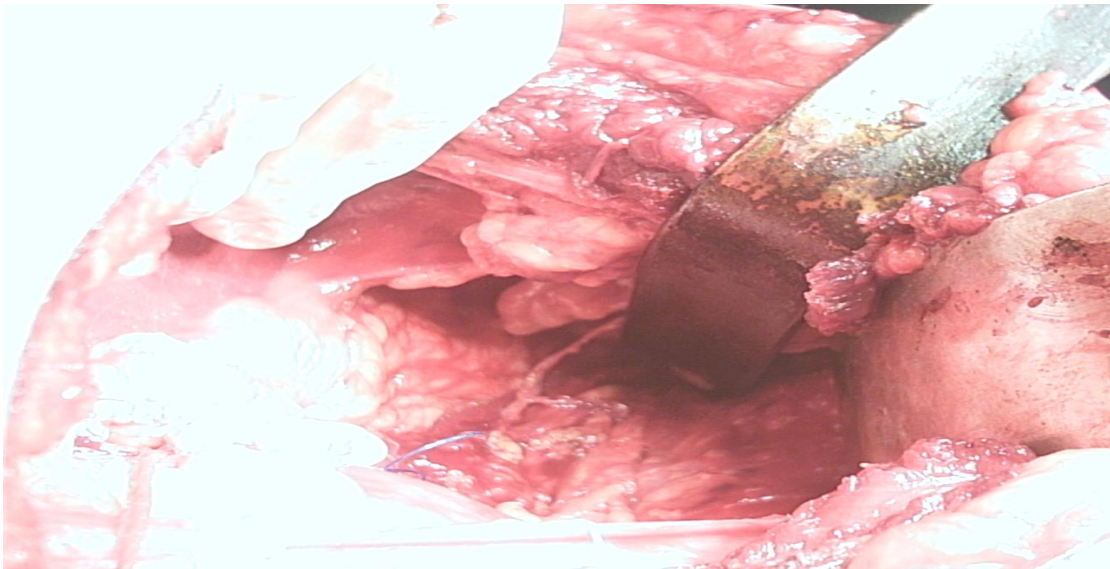
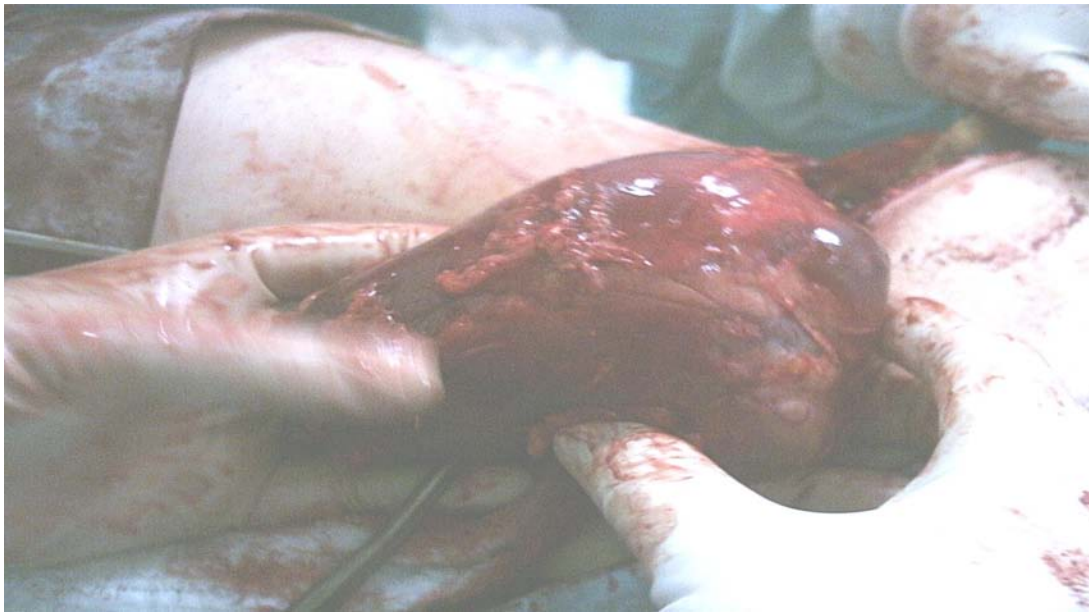
IVU

CT of the right kidney; Radiologist's comment: Very large renal mas lesion that occupies about upper two-thirds of right kidney (figure....)



Surgical intervention: Right nephrectomy Surgical finding: there is an a large cystic formation that incorporate upper pole And middel area of the right kidney with thick and calcified capsule filled with hemorrhagic fluid and mas of loose costs.





VI. DISCUSSION

Diagnosis is mainly based on histopathological features such as a well-developed capsule, fibrous stromata, multiple epithelial lining septa. According to Bosniak the renal cysts can be classified into 5 types. A simple renal cyst grows up of renal parenchyma. The cyst is filled with fluid and can cause local tissue destruction as it enlarged. Many cysts cause no symptoms and are discovered accidentally during other assessment or autopsy. Although the exact cause is unknown, cysts are considered structural defect that occurs prenatally. Diagnosis of a simple renal cyst involves intravenous urography, echosonogarchy, diagnostic puncture, CT, MRI. Echosonogarchy is the most commonly applied method because it reveals some features of cysts of suggesting malignancy: irregular walls, internal echoes inside the walls and the cysts, lack of characteristic potentiation of ultrasound beam (F). This indicate diagnostic puncture and analysis cyst contents. If the aspirate is bloody there is (Tomas¹ 2010) a 28 -50 % chance of malignancy.

VII. CONCLUSION

The characteristic findings were thick and irregular wall and heterogeneous contents of the cystic mass. The cyst contained bloody fluid and a hemorrhagic degenerating mass. Pathohistological examination showed evidence of malignant hemorrhagic renal cyst. Which is treated by surgical intervention and usually nephrectomy.

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