DOI: 10.7860/JCDR/2017/27901.10435

Case Report

Surgery Section

Spontaneous Subcapsular Renal Haematoma : A Case Report

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ABSTRACT

Spontaneous subcapsular renal haematoma is a rare condition with wide range of presentation; it poses a dilemma for diagnosis and management. We present a case of 38-year-old female who presented with right flank pain (continuous, dull aching) for a week with right renal angle tenderness and high blood pressure (though she was not known hypertensive). On imaging, there was right renal subcapsular collection. She did not respond to conservative management except that her blood pressure was controlled with single drug Angiotensin Converting Enzyme (ACE) inhibitor. Right double J stent was placed (in view of urinoma) and patient was followed for six weeks. Repeat computed tomography scan showed persistence of right renal subcapsular collection but the cause was not found. Except hypertension, no definitive cause for the condition could be found. Patient was intervened surgically with right subcostal exploration and subcapsular haematoma was found and drained. Patient was asymptomatic thereafter.

Keywords: Spontaneous renal rupture, Spontaneous urinoma, Subcapsular haematoma

CASE REPORT

A 38-year-old female presented with history of right flank pain of one week duration. The pain was continuous, dull aching in nature, moderate in intensity and associated with nausea. It was interfering with her daily household activities. There was no history of fever, burning micturition, haematuria, dysuria, Lower Urinary Tract Symptoms (LUTS) or trauma. There were no other medical comorbidities.

On general physical examination, all the findings were unremarkable except that patient's blood pressure was high (160/90 mm of Hg) though patient was not a known hypertensive. In systemic examination, there was mild right renal angle tenderness. There was no organomegaly. Genital and pelvic examination were normal.

On laboratory evaluation, Complete Blood Count (CBC), Total Count (TC), Renal Function Tests (RFT's), coagulation profile, urine routine microscopy were within normal limits. Urine culture sensitivity report showed no growth.

On imaging, X-ray Kidney, Ureter and Bladder (KUB) did not reveal any abnormality. On Abdominal Ultrasonography (USG), there was right subcapsular collection of size 10 x 3.9 x 7 cm. Right renal parenchyma was compressed by the collection. Doppler study was normal and did not reveal any vascular cause of collection. Other abdominal organs were normal.

Contrast Enhanced Computed tomography (CECT) KUB region was done. It revealed well defined, non enhancing, right renal subcapsular fluid collection of size 11 x 4.8 x 9.6 cm of volume 250-300 cc [Table/Fig-1]. There was no solid component or any contrast uptake in the collection [Table/Fig-2]. Both kidneys showed good uptake of contrast and prompt excretion. There was no free leak of contrast into the collection or changes in attenuation on delayed images. There was no calculus or hydronephrosis/ hydroureterosis and right pelvicalyceal system appears compressed.

CECT KUB findings suggested two possible Differential Diagnosis (D/D) –

1) Right renal subcapsular urinoma

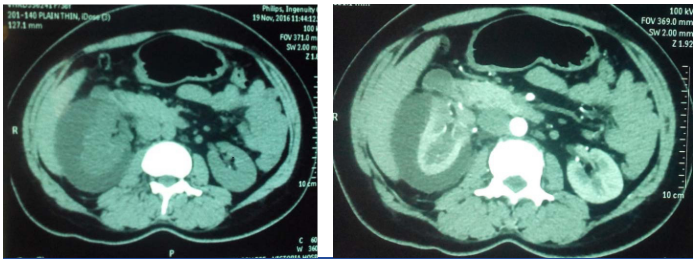
2) Right Subcapsular haematoma

Patient was admitted and conservative treatment with empirical antibiotics and analgesics was started but patient did not respond to conservative treatment and was having persistent right flank pain though her blood pressure was normalized with single drug of Angiotensin Converting Enzyme (ACE) inhibitor. In view of possible urinoma, right DJ stent was placed. Patient was kept on regular follow up with USG for six weeks. Even after six weeks her right renal collection did not subside and she continued to have right flank pain though decreased in severity.

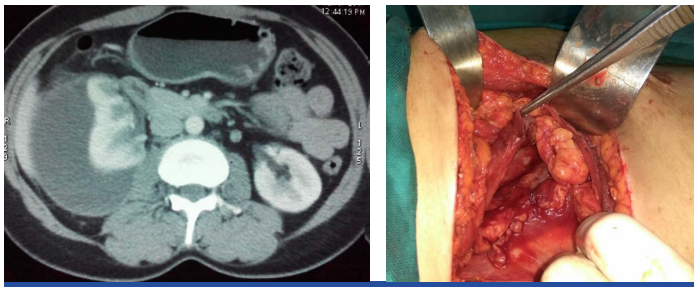
Right DJ stent was removed after six weeks and repeat CT scan was done [Table/Fig-3] which showed persistent well defined, non enhancing right renal subcapsular collection of 11.2 x 5.0 x 9.6 cm with volume of 270-330 cc i.e., increased collection compare to previous CT scan. Rest of findings were same as the previous CT scan.

In view of subcapsular haematoma, patient was further worked up for vasculopathy {perinuclear Antineutrophil Cytoplasmic Antibody (pANCA), raised Erythrocyte Sedimentation Rate (ESR), raised C Reactive Protein (CRP)}, but all were negative.

Patient was planned for exploration. She was taken for surgery and explored through right subcostal incision. There was right subcapsular haematoma over right lateral aspect of kidney [Table/



[Table/Fig-1]: CT scan showing right renal subcapsular collection.
[Table/Fig-2]: CT scan showing no contrast uptake in the collection.



[Table/Fig-3]: CECT showing persistent well defined, non enhancing right renal subcapsular collection (after six weeks). **[Table/Fig-4]:** Showing intraoperative findings- evacuated subcapsular haematoma.

Literature	Cause of spontaneous subcapsular haematoma
Mu Q et al., [3]	Invasive mole
Yamamoto K et al., [4]	Antiplatelet therapy
Ferrando F et al., [5]	Anticoagulated patient
Bansal U et al., [6]	After ureterorenosopy
Paiva MM et al., [7]	After ureteroscopy and laser lithotripsy
Tao W et al., [8]	After ureteroscopy with holmium : yttrium-aluminium-garnet laser lithotripsy

[Table/Fig-5]: Various cases published in literature with different causes of spontaneous subcapsular haematoma [3-8].

Fig-4]. Haematoma was evacuated and kidney examined for any tumour or other abnormality, none could be found so renal capsule was closed. Cytological examination of the fluid was done and it was negative for malignancy. She was discharged on fourth postoperative day. The patient is under follow up since four months and at present she is asymptomatic with normal blood pressure without any medication.

DISCUSSION

Spontaneous renal haematoma is long known clinical condition which was first described by Bonet in 1679. It may present with wide range of presentations as described in literature [1] from one extreme of mild persistent pain to other extreme of devastating acute abdominal conditions like acute appendicitis or perforated viscus or dissecting aneurysm [1], Lenk's triad consisting of acute flank pain, tenderness and symptoms of internal bleeding.

Aetiology, McDougal WS et al., reviewed the literature and found that renal tumour was responsible in 57%-87%, vasculopathy in 11%-26%, infection in 5%-10% [2], and few cases were idiopathic [Table/Fig-5] [3-8].

Imaging, USG is the first modality of choice due to easy availability but it is not confirmatory and it is operator dependent. USG may misdiagnose the condition as renal abscess or renal tumour [9]. So CT scan is needed to confirm the diagnosis or to rule out other diagnosis. CT scan has higher sensitivity and specificity for diagnosing renal tumour/abscess which may be misdiagnosed with ultrasound. It can strongly suggest angiomyolipoma. MRI is another alternative to CT with added advantage of diagnosing small tumours. Due to high incidence of Polyarteritis Nodosa (PAN) Brkovic D et al., advised angiography as a mandatory imaging, if CT fails to reveal the underlying cause [9].

Management, there are different proposed treatments which include- conservative management (symptomatic management with analgesic, antibiotics), combined percutaneous drainage and urokinase injection [10], and radical nephrectomy. Shen Z et al., proposed combined use of percutaneous drainage and urokinase injection into the haematoma cavity after its evacuation [10]. Brkovic D et al., Srinivasan V et al., and Powell PH et al., all proposed conservative management (symptomatic management with antibiotics, analgesics) [9,11,12]. Kendall AR et al., proposed radical nephrectomy as a treatment when no clear aetiology can be found [13]. Morgentaler A et al., proposed nephrectomy only in patients with non fatty lesions other than haematoma and serial follow up with CT scan in other patients [14].

In our patient we could not find a definitive aetiology and hypertension seems to be the only possible cause as infection, malignancy and PAN were ruled out. However, Hypertension in itself may be the result of this condition and may not be the causative factor as on the follow up her blood pressures are in normal range without any medication.

CONCLUSION

Spontaneous subcapsular renal haematoma might arise from variety of situations. Although renal tumours (benign /malignant) may be the most common cause but there are various other causes. Hypertension may be one of the causes as in our case. We did not advice radical nephrectomy without a definite diagnosis of renal cell carcinoma. We believe conservative management should be tried in cases where aetiology is not clear, failure of which should follow surgical intervention in the form of evacuation of haematoma.

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FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Feb 26, 2017**
Date of Peer Review: **Apr 07, 2017**
Date of Acceptance: **Jun 23, 2017**
Date of Publishing: **Aug 01, 2017**