

CASE PRESENTATION

DR. GAURAV SHARMA
CNMC&H

Mrs. ABC

30 years/female

- Complaints: Pain in right flank x 3 months (Insidious in onset, mild to moderate, dull aching, non migratory and non radiating)
- Associated with dysuria
- No history of lower urinary tract symptoms, hematuria, graveluria, acute urinary retention

EXAMINATION

Vitals:

- Pulse: 82/minute
- BP: 126/86 mm Hg
- Respiratory rate: 16/minute
- Temperature: 97.8 Fahrenheit

Per abdomen:

- Soft, non distended, non tender, no organomegaly
- Bilateral renal angles- non tender

INVESTIGATIONS

- **Blood urea:** 19 mg/dl **Serum creatinine:** 0.7 mg/dl
- **Urine R/E:** pH: 6.5, Specific gravity: 1.014
 Pus cells: 1-2/HPF, RBC: 0-1/HPF
- **Urine culture:** No growth
- **Prothombin time:** 14, INR: 1.02

Ultrasound:

- **Right kidney:** 9 mm calculus in middle calyx, mild hydronephrosis

X-Ray KUB

- Radio-opaque shadow present in right renal area



FIG. 1: Abnormal radio-opaque shadow present in right renal area

Non contrast CT scan KUB

- Right kidney: single stone 10 mm in size (+820 HU) present in middle calyx.

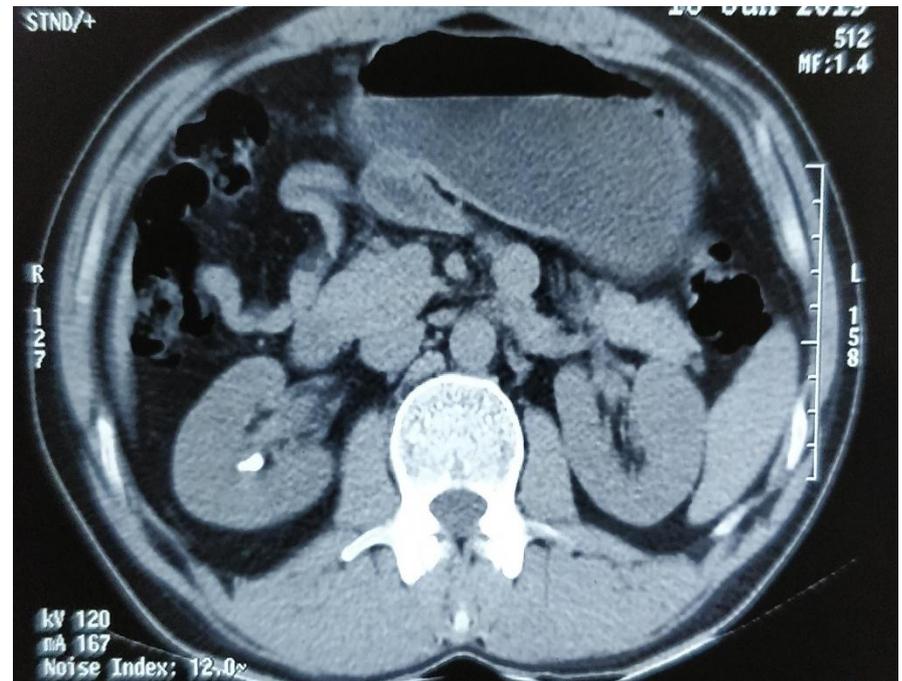


FIG. 2: Calculus seen in middle calyx of right kidney

- Patient underwent right sided extracorporeal shockwave lithotripsy

- Three days following ESWL, patient presented with right sided acute flank pain, dysuria, fever

EXAMINATION

Vitals:

- **Pulse: 98/minute**
- BP: 126/88 mm Hg
- Respiratory rate: 18/minute
- **Temperature: 100.8 Fahrenheit**

Per abdomen:

- Soft, non distended, non tender, no organomegaly
- **Right renal angle- tenderness present**

INVESTIGATIONS

- Hemoglobin: 11.2 gm% **TLC: 12400/mm³ (N82L12M6)**
- Blood urea: 35 mg/dl **Serum creatinine: 1.6 mg/dl**
- **Urine R/E:** PH: 6.5, Specific gravity: 1.014
 Pus cells: 6-8/HPF, RBC: 0-1/HPF
- **Urine culture:** No growth

Ultrasound:

- Right kidney: enlarged, swollen with increased anechoic corticomedullary area
- Calculus approximately 8 mm in size at pelviureteric junction
- Dilated pelvicalyceal system with internal echoes

Non contrast CT scan KUB

- Right kidney: Enlarged, with surrounding fat stranding. Calculus 8mm in size present in pelvis

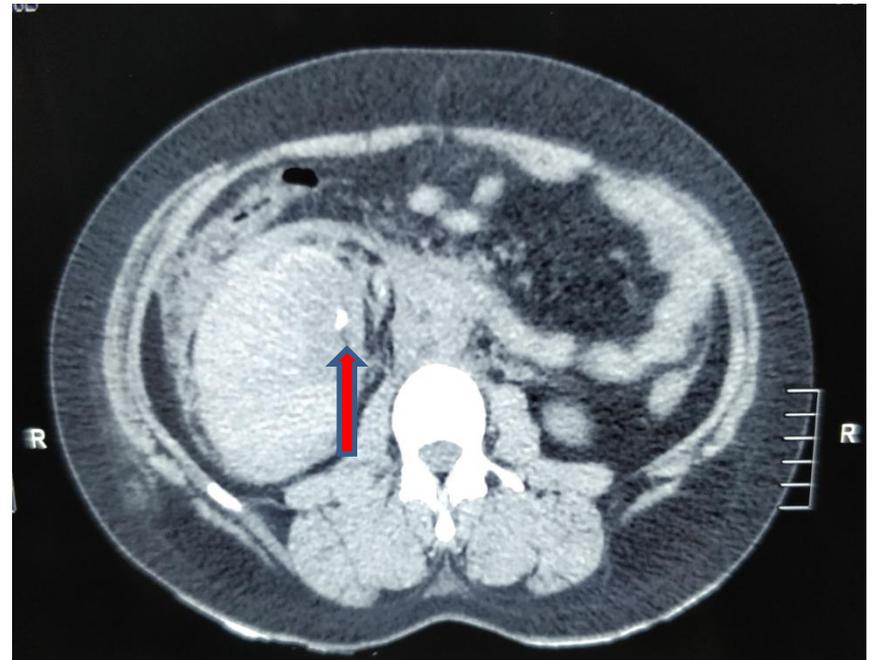


FIG. 3: Right kidney enlarged with surrounding fat stranding

- Patient was managed with intravenous antibiotics, antipyretics, analgesics and right sided double J stenting
- Patient was discharged under satisfactory condition after 1 week of admission with plan of fresh renal function test and contrast imaging of KUB region (if renal function test was normal)

FOLLOW UP (2 WEEKS)

- Complaints: Right sided flank pain,
Headache

Examination:

- Pulse: 78/minute
- Respiratory rate: 16/minute
- **BP: 172/94mm Hg**
- Temperature: 97.8 F

Per abdomen:

- Soft, non distended, renal angle: non tender, no organomegaly

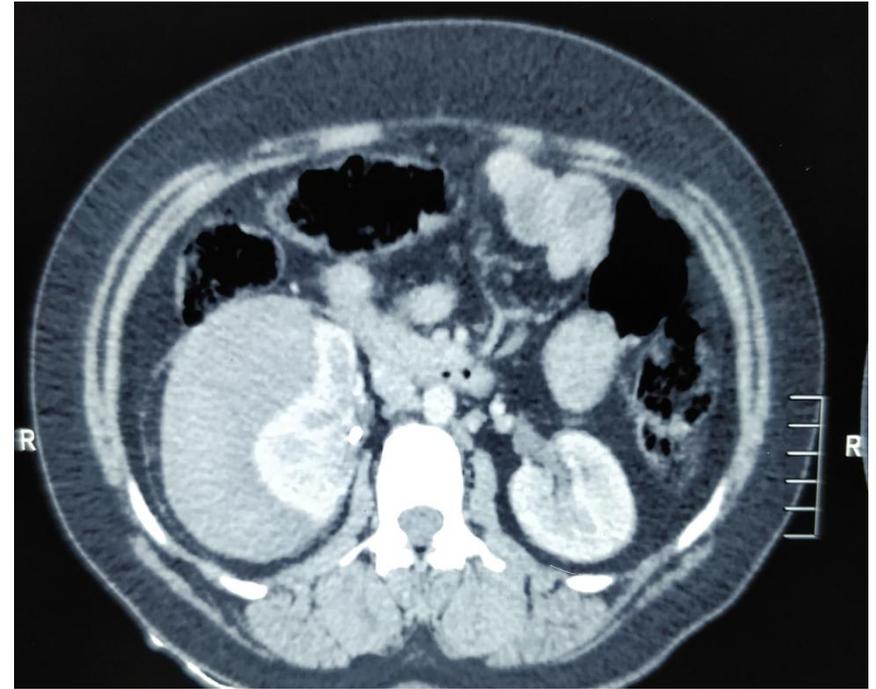
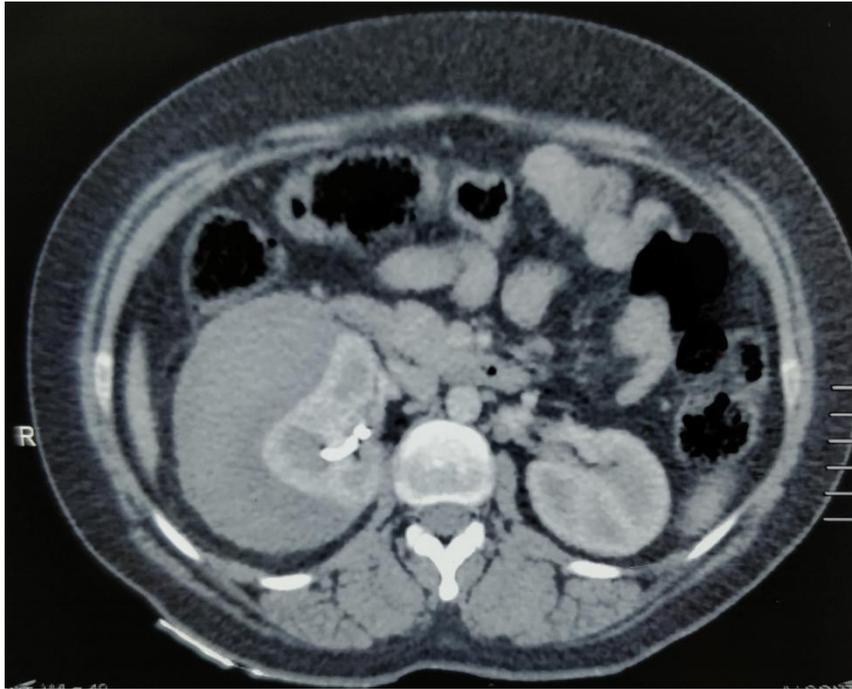


FIG 4: Large hypoattenuated non enhancing collection (110 x 60 mm) present in perinephric space
DJ stent seen in situ

FIG 5: Normal enhancement seen in both kidneys.
Calculus seen in right renal pelvis

MANAGEMENT

- The new-onset hypertension was being managed with 20 mg of lisinopril once daily.
- Due to the persistent pain and new-onset hypertension, surgical renal decortication was elected.
- Pre anaesthetic workup was done and patient was planned for open renal exploration and clot evacuation.

Intraoperative findings:

- Retroperitoneal exploration done via right flank incision. Dense adhesion present around the kidney. Renal capsule was opened and clots evacuated.
- There was no perioperative complications.

INTRAOPERATIVE IMAGE

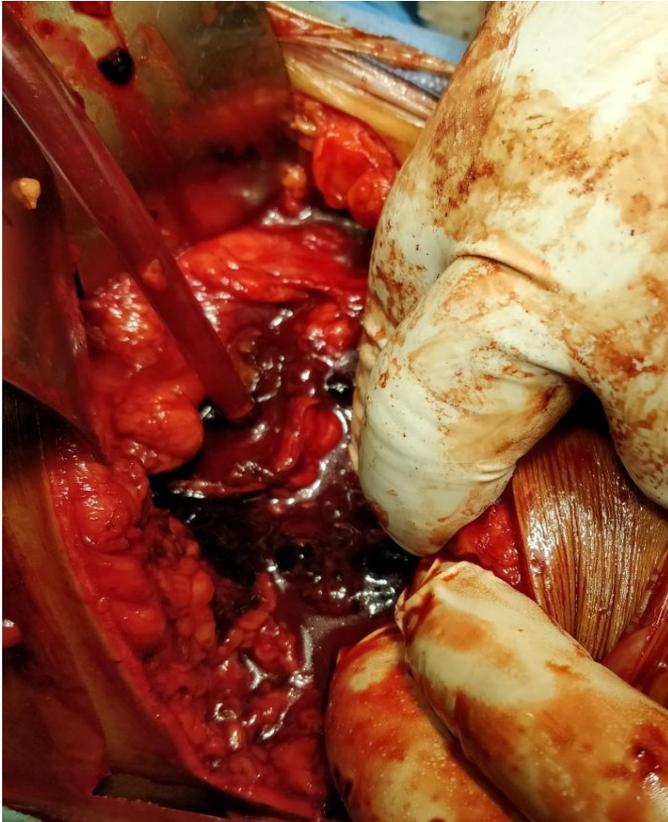


Fig 6: Subcapsular clot present

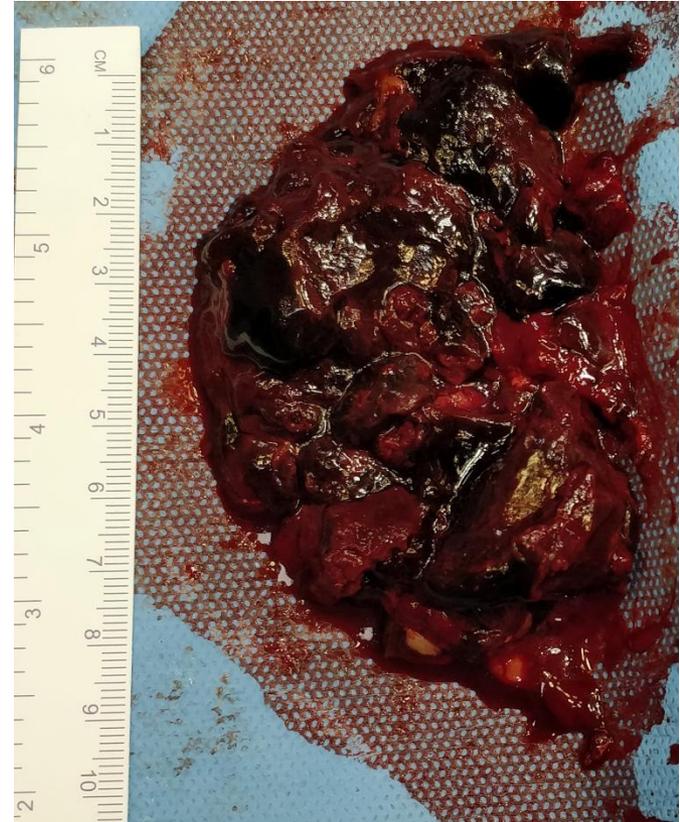


Fig 7: Evacuated clot

POSTOPERATIVE PERIOD

- There were no postoperative complications. Hospital stay was uneventful.
- Within two weeks, her abdominal pain completely resolved and lisinopril was discontinued, and her blood pressure remained normal.
- Post procedure ultrasonography confirmed complete drainage (after 2 weeks)

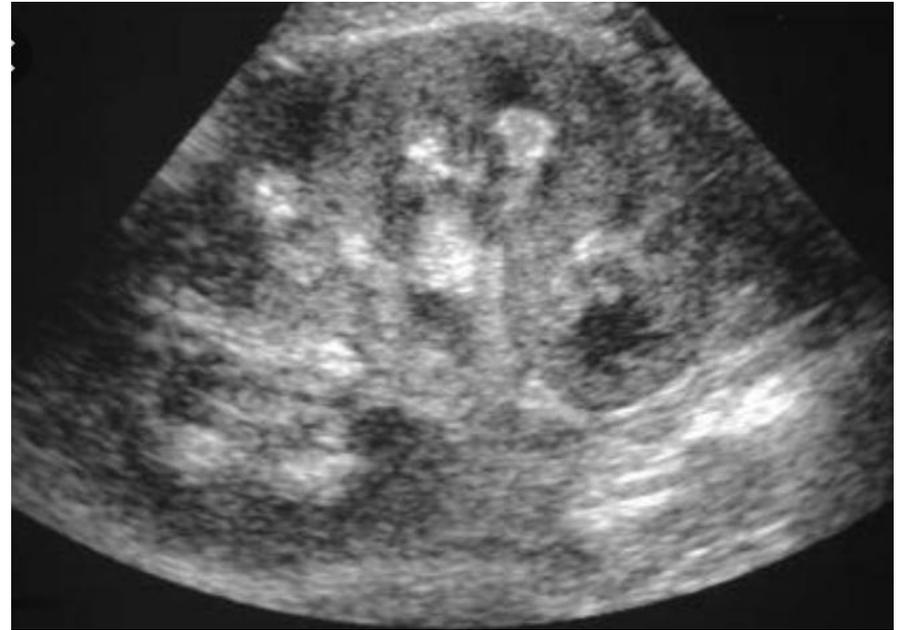


Fig 8: No peri-renal collection seen.

PAGE KIDNEY

- Defined as the external compression of the kidney, typically by a subcapsular hematoma, that leads to hypertension due to activation of the renin-angiotensin-aldosterone (RAA) axis by hypoperfusion and microvascular ischemia of the kidney.
- Page kidney was first defined by Page[1] in 1939 when he wrapped a canine kidney with cellophane and observed the ensuing hypertension, which he proposed to be caused by renal ischemia and hypoperfusion

1. Page I. The production of persistent arterial hypertension by cellophane perinephritis. JAMA 1939;113:2046-8.

- Clinically, the first case of hypertension due to a subcapsular hematoma was reported in 1955 by Engel et al.[2] occurring in a young football player who suffered blunt trauma to the kidney.
- Hypertension with a normal serum creatinine level is the classic presentation of Page kidney in the presence of a subcapsular renal hematoma.

2. Engel WJ, Page IH. Hypertension due to renal compression resulting from subcapsular hematoma. J Urol 1955;73:735-9.

- When the contralateral kidney is functional, the creatinine level is not typically elevated [3]
- Diagnosis is confirmed with contrast enhanced CT scan

3. Butt FK, Seawright AH, Kokko KE, Hawxby AM. An unusual presentation of a Page kidney 24 days after transplantation: case report. *Transplant Proc* 2010;42:4291-4.

Etiology

TRAUMATIC

- Sports and road traffic accidents
- Extracorporeal shockwave lithotripsy
- Kidney biopsies

NON TRAUMATIC

- Tumors
- Urinomas
- Lymphoceles

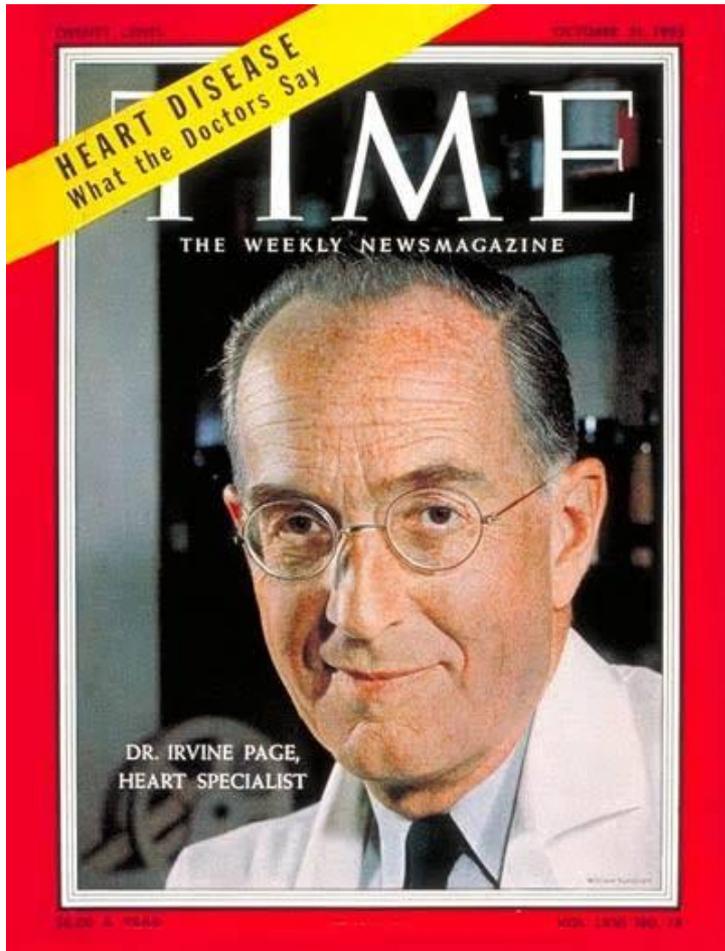
MANAGEMENT

- Initial management is **control of blood pressure** with ACE inhibitors.
- **Percutaneous drainage** is useful in cases of newly formed hematomas but is unlikely to resolve older (organized) hematomas.[4]

4. McCune TR, Stone WJ, Breyer JA. Page kidney: case report and review of the literature. Am J Kidney Dis 1991;18:593-9.

- **Surgical decortication** is done if the blood pressure is not improved despite of medical treatment and when percutaneous drainage fails.
- **Nephrectomy** in cases with non functional kidney with uncontrolled hypertension.

HAPPY DOCTOR'S DAY



- Dr. Page was on cover of Time magazine in 1955
- President of American Heart Association (1956-57)
- Albert Lasker Award (1958)
- Gairdner Foundation International Award (1963)
- A collection of his papers is held at the National Library of Medicine in Bethesda, Maryland