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CLINICAL MEET - DEPT OF UROLOGY

Horse kick induced grade 4 renal injury

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MCH UROLOGY Resident , II year

- A 26 year gentleman , farmer by occupation, resident of village manchar dist pune was kicked by a horse on the right side of abdomen.

Popular sport of rural maharashtra

- 8 hours later he reported to the Dr DY Patil hospital casualty with-
  - severe abdominal pain on rt side.
  - no passage of urine since injury.
- No blood at the tip of urethral meatus or heamaturia.

ON EXAMINATION

- Conscious, well oriented
- moderately built and well nourished
- P- 110/min feeble, with low volume.
- BP- 96/60mmHg
- Pallor +
- Other system examination were normal.

- P/A-
  - Inspection-
    - Bruise seen over right loin.
    - No significant renal angle fullness
  - Palpation – Severe tenderness over rt loin region.
    - Bladder not palpable
- Genital examination –WNL

- Hb – 9.30 mg/dL
- TLC – 9940/uL
- Plt - 260000/uL
- PT-INR – 1.13
- BSL – 89 mg/dL
- Urea- 18 mg/dL
- S. Creatinine – 1.4mg/dL
- Electrolytes 139/4.7 mmol/lt
- Sr Bilirubin –
  - T –.14mg/dl
  - D/I - 0.10/0.04 mg/dl
- SGOT – 19 U/lt
- SGPT – 19 U/lt
- ALP – 159 U/lt
- HIV – Non reactive
- HbsAg – Non reactive
- HCV – Non reactive

- RADIOLOGY

USG SCAN (outside scan before admission)

- Mild to moderate ascites.

  ?haemoperitoneum.
- Right kidney enlarged (size 16 x 6 cm), with increased echogenecity.
- Minimal perinephric collection seen.
- Left kidney not visualised.

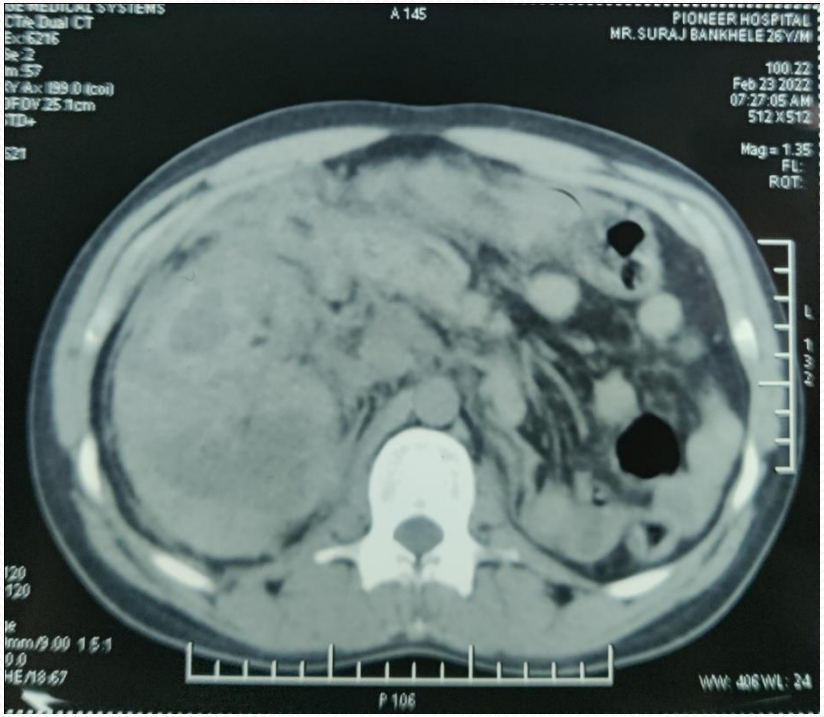
- Patient got admitted under urology in CCM ICU.
- Patient was unstable ,with tachycardia , low bp- volume expanders were given along with 2units of pcv .
- Foleys catheterization was done, but there was no urine output.
- After stabilizing the patient in icu for 24 hrs, CECT was planned.

CECT CHEST, ABDOMEN AND PELVIS

- CT scan
- Rt kidney enlarged (17 x 9cm).
- multiple large intraparenchymal contusions and lacerations upto the collecting system(grade 4).
- Contrast leak seen.
- Multiple areas of renal infaction.
- Evidence of renal vein thrombosis.
- Renal artery –normal.

- GRADE 4 INJURY.

- 'ABSENT LEFT KIDNEY'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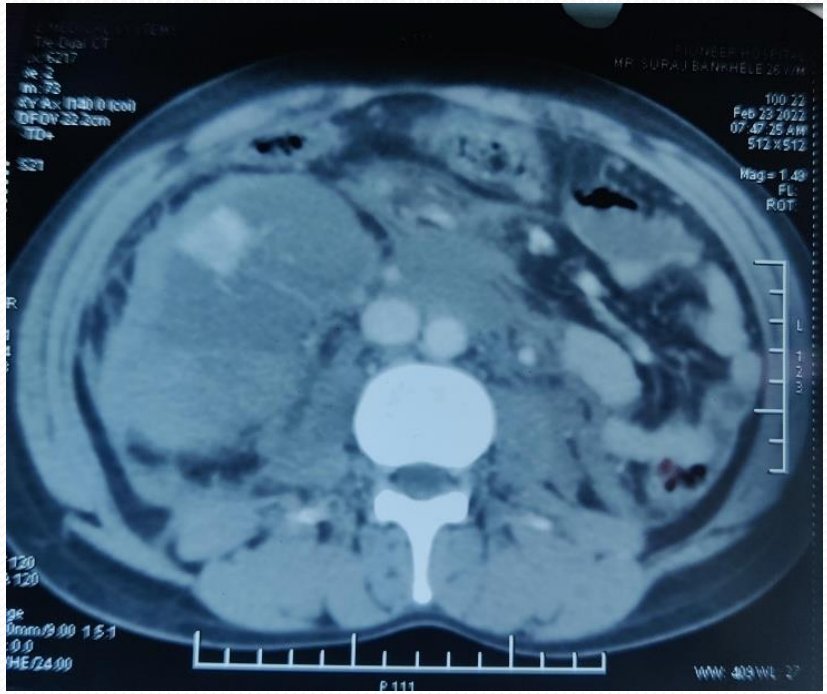
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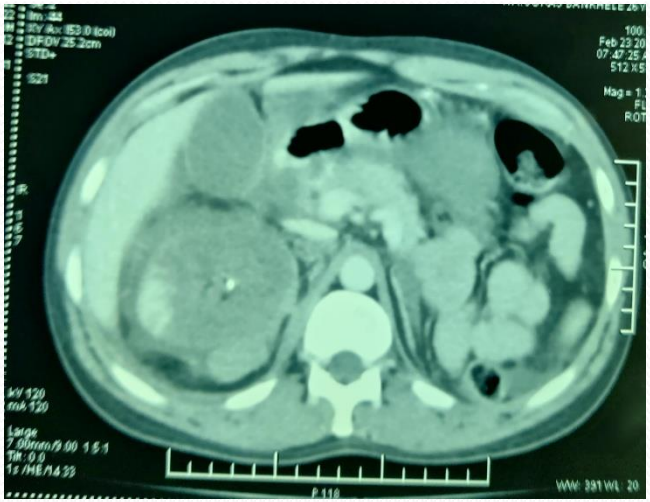
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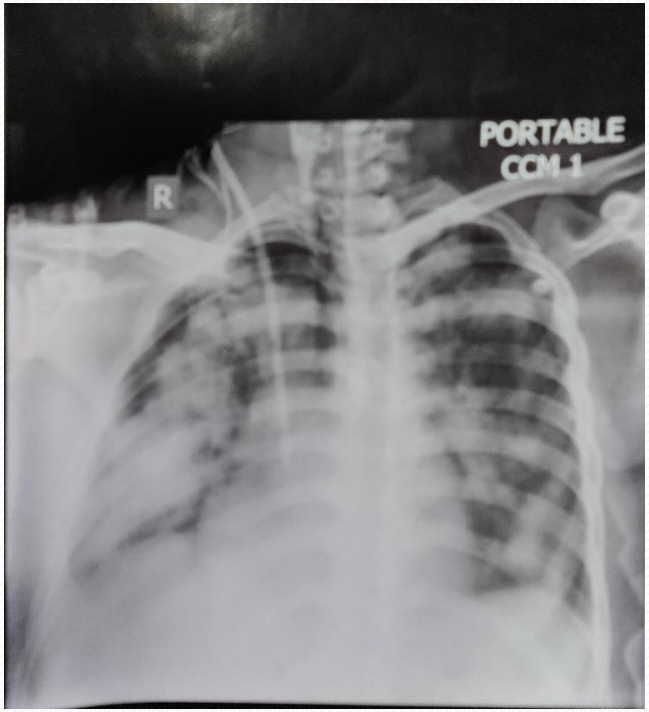
MANAGEMENT

1. Do nephrectomy, making patient anephric-dialysis and transplant in future.
2. Conserve patient – supportive management.

- For renal vein thrombosis inj heparin iv 5000iu qid started .
- Over the span of 20 days patient was managed in icu setting.
- Total of four pcv were transfused and 14 sittings of dialysis were done over a period of 1 month.

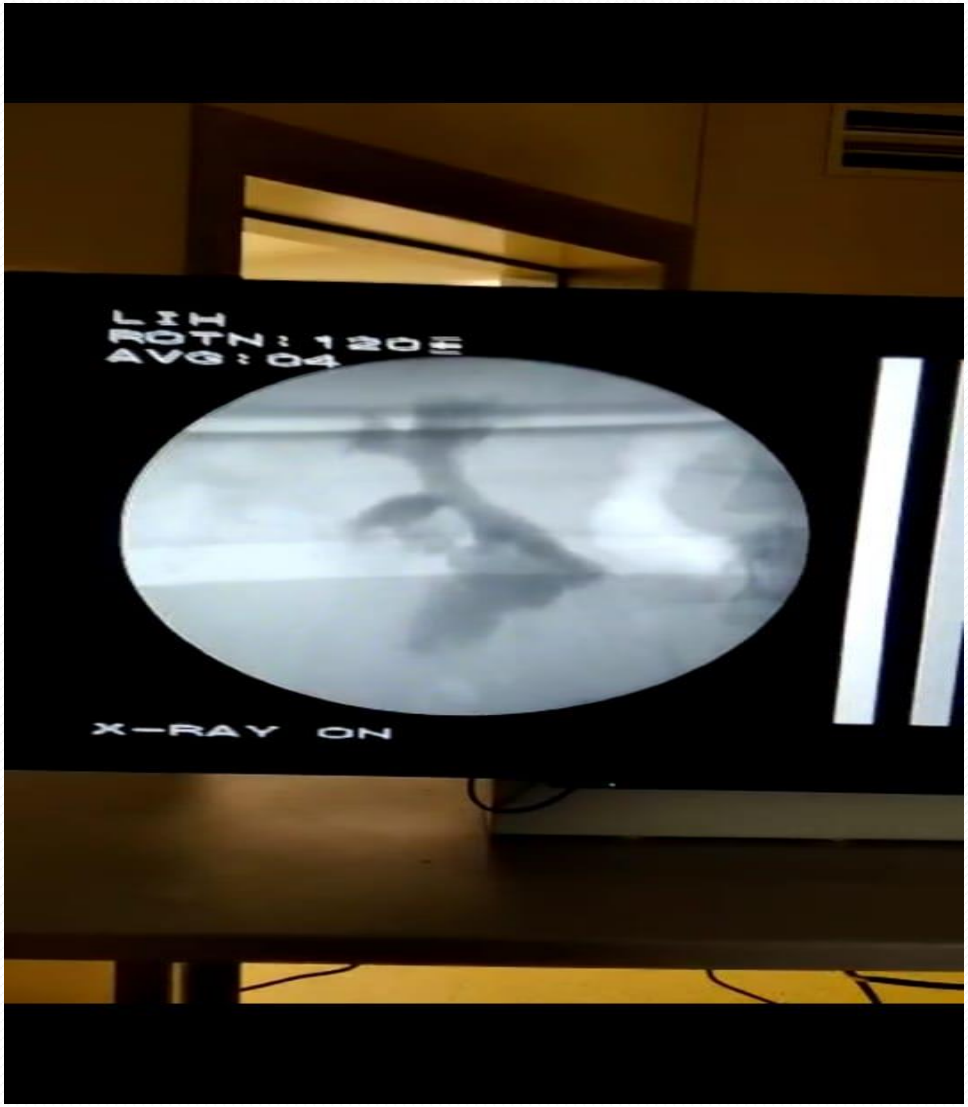
- In between, patient develop right sided pleural effusion and lung atelectasis (ARDS like picture). Pt was on NIV support for approx 10 days.



- Under the guidance of pulmonary medicine, Dr Bharatwal and team we could able to manage this grave complication.

- At all this time patient was anuric.
- Gradually lung condition improved and patient shifted to ward.
- Patient was strictly immobilized during the entire period to prevent bleeding.
- Color doppler of rt renal vessels after 1 week of heparin therapy suggested disolution of the renal vein thrombosis. Renal artery flow intact.

- After 3 weeks of injury pt started passing around 20-30 ml urine per day mixed with blood and clots.
- At 22nd day of trauma after stabilization of lung condition, patient underwent cysto RGP which suggested right mild hydronephrosis, and extravasation of contrast, from lower pole of kidney, right silicon dj stenting was done.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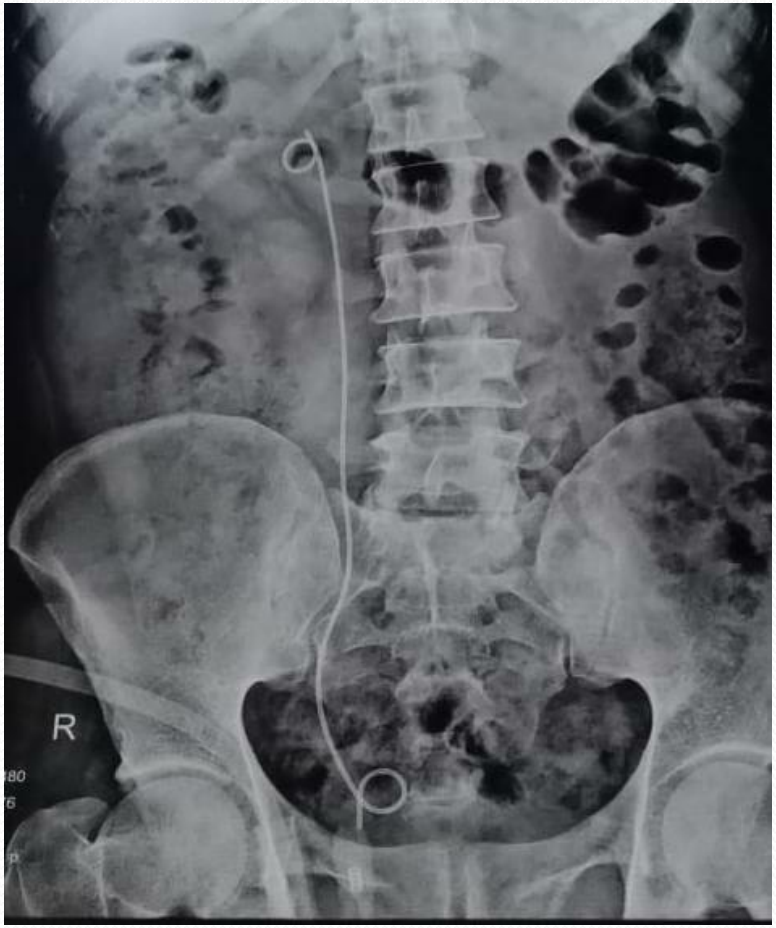
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- After couple of days of stenting, urine output increased drastically, it increased to around 4 litres per day over a period of two weeks.
- Gradually patients Sr. creatinin value decreased to 2.5 and there was no need for dialysis any more.
- This patient is on our follow up- plan is to remove the stent and do cysto RGP to look for current situation of pelvi calyceal system.

- About one in 750 people are born with only one kindey.
- The kidney is the organ most commonly associated with urological trauma and is involved in 3.25% of trauma cases.
- Renal trauma patients are mainly managed conservatively but on occasionally require emergency surgical intervention.

- This patient had a solitary functioning kidney with grade 4 injury, he was managed conservatively with meticulous monitoring and supportive care.

AAST Organ Injury Scale for Renal trauma - 2011 revision

Grade I	Small extrarenal haematoma. No laceration	75% of renal traumatic injuries	Non-operative management is usual.
Grade II	Small extrarenal haematoma. <1cm cortical laceration.		Routine follow up CT not generally required
Grade III	Moderate extrarenal haematoma. >1cm cortical laceration.		
Grade IV	Laceration involving collecting system. Segmental renal arteries and veins affected. Extrarenal haematoma <3.5cm depth.		Operative management increasingly deferred unless haemodynamically unstable or significant urinary extravasation.
Grade V	Formerly termed "Shattered kidney", this is now charcterised by main renal artery or vein avulsion, laceration or thrombosis. Extrarenal haematoma >3.5cm.		Operative management, typically nephrectomy, usually required for haemodynamic instability, expanding non-contained haematoma, avulsion. Increasing use of interventional radiology and stenting.

MMacP

Acknowledgement

- Although our patient is now ckd with baseline Sr creatinin value of 2.5, in the end with combined efforts of Urology, Nephrology, Radiology, pulmonary medicine and Critical care dept. we could be able to salvage a solitary shattered kidney and prevent young male from going for heamodialysis / transplant.

Thank you

Department of Urology
Dr Dy patil medical college and hospital.

Thanks to this creature also for giving us apportunity to manage one of the most complicated case of urology.