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Beyond the Stitched Wound: A Case of Left Renal Repair in Penetrating Back Trauma

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Abstract: Stab wounds over the posterior abdomen are particularly concerning because they may traverse the retroperitoneum and involve vital structures such as the kidneys, ureters, pancreas and adrenal major vessels, and bowel. Renal trauma constitutes approximately 1–5% of all trauma cases, and penetrating mechanisms, though less common than blunt injuries, are associated with a higher likelihood of significant parenchymal disruption and urinary tract involvement. Management of renal trauma depends on the mechanism, hemodynamic stability, and grade of injury. While non-operative management has become the standard for many blunt renal injuries, penetrating renal trauma often requires surgical exploration due to potential vascular injury, collecting system disruption, or ongoing bleeding. Renorrhaphy, a kidney preserving technique, is preferred whenever feasible to maintain renal function and avoid nephrectomy, especially in young patients. This report describes the case of a 28-year-old male who presented with a stitched stab wound over the left back and subsequent abdominal tenderness, prompting emergency exploratory laparotomy. Intraoperative findings revealed a left renal laceration that was successfully repaired with left renoraphy.

Keywords: *Stab Injury; Penetrating Trauma; Renal Trauma; Left Renorrhaphy; Retroperitoneal Injury; Exploratory Laparotomy; Kidney Preservation; Abdominal Stab Wound.*

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I. INTRODUCTION

A 28-year-old male presented to the emergency department with a stitched stab wound over the left back and abdominal tenderness. Due to worsening symptoms and hemodynamic instability and suspicion of internal injury, urgent CECT (abdomen + pelvis) was not done and an exploratory laparotomy was performed, revealing a left renal laceration. Renorrhaphy was done successfully, and the patient recovered well postoperatively. This case highlights the need for early recognition and timely surgical management of renal trauma following stab injuries.

➢ *Case*

A 28 years old male patient presented to the surgical emergency ward with stitched wound due to assaulted penetrating injury over left side back came with complain of severe abdominal pain and distention. Patient was primarily treated in peripheral hospital in the form of wound closure.

- No history of hematuria, vomiting.
- Patient was vitally stable.

On examination the patient had generalized tenderness over abdomen with rigidity present. On local examination, (Figure 1) approx. 3cm obliquely placed stitch line present at level of L1-2 approx. 3cm lateral to midline towards left. Stichline was clean and healthy and no further digital exploration of wound was done.

Fig 1 Stitchline Present at Back

Further radiological investigation. USG abdomen was suggestive of hemoperitoneum. Blood investigations were Hb-9.10gm/dl, Tlc-5300/mm3, Plt-217000/mm3, Creat- 0.63

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mg/dl Resuscitation was started immediately by iv fluids,iv antibiotics and iv analgesics. Patient was then prepared for Emergency Exploratory Laprotomy.

Patient underwent emergency exploratory laptoromy with drainage of hemoperitoneum with peritoneal lavage. Approx 1*1 cm2 size of perforation found on splenic flexure of colon on antimesenteric border. Resection of 2cm distal and proximal margin of perforation site was done and anastomosis done, Injury found to left kidney at junction of upper and middle pole at the lateral surface with no injury to renal pelvis, for which repair of trasnsection done by vicryl 1-0 in intermittent manner and a patch of omentum kept over repair site. Hemostasis done. Loop ileostomy created. Abdominal drain of 30Fr size two in number kept in pelvic cavity and another at pancreatic injury site. Abdomen was the closed in layers Stab wound present at left loin region was closed in two layers.

- Post-operatively, patient was kept in SICU on ionotropic support for 2 days.
- Patient was managed with iv antibiotics, analgesics and antacids.
- Urine output, creatinine levels were monitored and all were within normal limits.
- No post operative hematuria noted.

II. DISCUSSION

Renal injuries can lead to damage of the renal parenchyma or blood vessels, which may result in haemorrhage or harm to the collecting system, potentially causing urine leakage. In general, injuries to the genitourinary tract are infrequent, making up about 10% of all trauma cases, with the kidney being the organ most often affected. Renal injuries represent roughly 1% to 5% of trauma patients, with the vast majority resulting from blunt abdominal trauma (80% to 90%). While they are less common, instances of penetrating renal injuries may constitute up to 20%, contingent on the specific demographics and geographic area served. Young men, particularly those engaged in sports, motor vehicle collisions, violence, or falls (with an average age of 30), are more frequently observed to sustain traumatic renal injuries. Based on the American Association for the Surgery of Trauma classification, renal injuries are classified into five grades of injury, which helps to direct treatment approach and anticipated outcome.

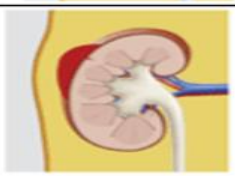
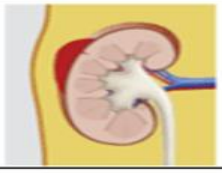
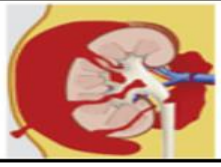
AAST grade	AIS severity	Imaging Criteria (CT findings)	Illustration of renal injury at each grade from Journal of Acute Disease (2016)
I	2	• Subcapsular haematoma and/or parenchymal contusion without laceration	
II	2	• Perirenal haematoma (confined to Gerota's fascia) • Renal parenchymal laceration ≤1 cm depth without urinary extravasation	
III	3	• Renal parenchymal laceration > 1 cm depth without collecting system rupture or urinary extravasation • Any injury in the presence of a kidney vascular injury or active bleeding contained within Gerota's fascia	
IV	4	• Parenchymal laceration extending into urinary collecting system with urinary extravasation • Renal pelvis laceration and/or complete uretero-pelvic disruption • Segmental renal vein or artery injury • Active bleeding beyond Gerota's fascia into the retroperitoneum or peritoneum • Segmental or complete kidney infarction(s) due to vessel thrombosis without active bleeding	
V	5	• Main renal artery or vein laceration or avulsion of hilum • Devascularized kidney with active bleeding • Shattered kidney with loss of identifiable parenchymal renal anatomy	

Fig 2 AST Classification of Renal Trauma

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Trauma and urology surgeons have long agreed that patients with haemodynamically stable renal trauma benefit more from early, non-operative treatment. The development of CT imaging, which makes it possible to classify kidney damage, and the advancements in angioembolization procedures are largely responsible for this strategy's success. Supportive therapy in an intensive care unit (ICU), serial clinical examinations, serial haematocrits every 6 to 8 hours, blood product transfusions, and angioembolization or drain insertion for urine leakage are the first steps in non-operative management. Renal function can be maintained and needless nephrectomy can be avoided with this initial non-operative strategy.

Renal injury patients who are hemodynamically unstable, unresponsive to resuscitative measures or fail non-operative management should be taken for operative intervention. Persistent bleeding requiring continued red blood cells transfusion or angioembolization, persistent or worsening urine extravasation from renal pelvis or proximal ureteral avulsion are other indication that require surgical intervention. Primary goal in surgical intervention is to control the bleeding and salvage the kidney if possible. Finding the contralateral kidney via palpation is crucial if nephrectomy is being contemplated in order to ensure the patient has a second kidney. In order to screen for a contralateral functioning kidney, which may affect intraoperative treatment, an intravenous pyelogram can also be performed during surgery. Nephrectomy is not the same as operative intervention. For instance, minor stab wounds to the renal parenchyma or injuries to the renal pelvis can be closed, but if enough functional renal parenchyma can be retrieved, a partial nephrectomy may be performed.

➢ *Management Highlights*

- Majority of renal injuries are low grade (I to III) and are managed supportively.
- A trial of supportive treatment can be given for Grade IV injuries without expanding hematomas with hemodynamic stability.
- Pelvi-calyceal system injuries can be treated initially with st enting or draining of the urinoma, followed by surgical r epair or nephrectomy if unsuccessful.
- Complete ureteropelvic injuries or renal pedicle avulsion as seen in grade V injuries require surgical repair
- Partial ureteropelvic injuries can be treated with stenting or by diverting the urinary drainage.
- All penetrating wounds associated with active bleeding, urine leakage or involve the hilum need urgent surgical intervention.

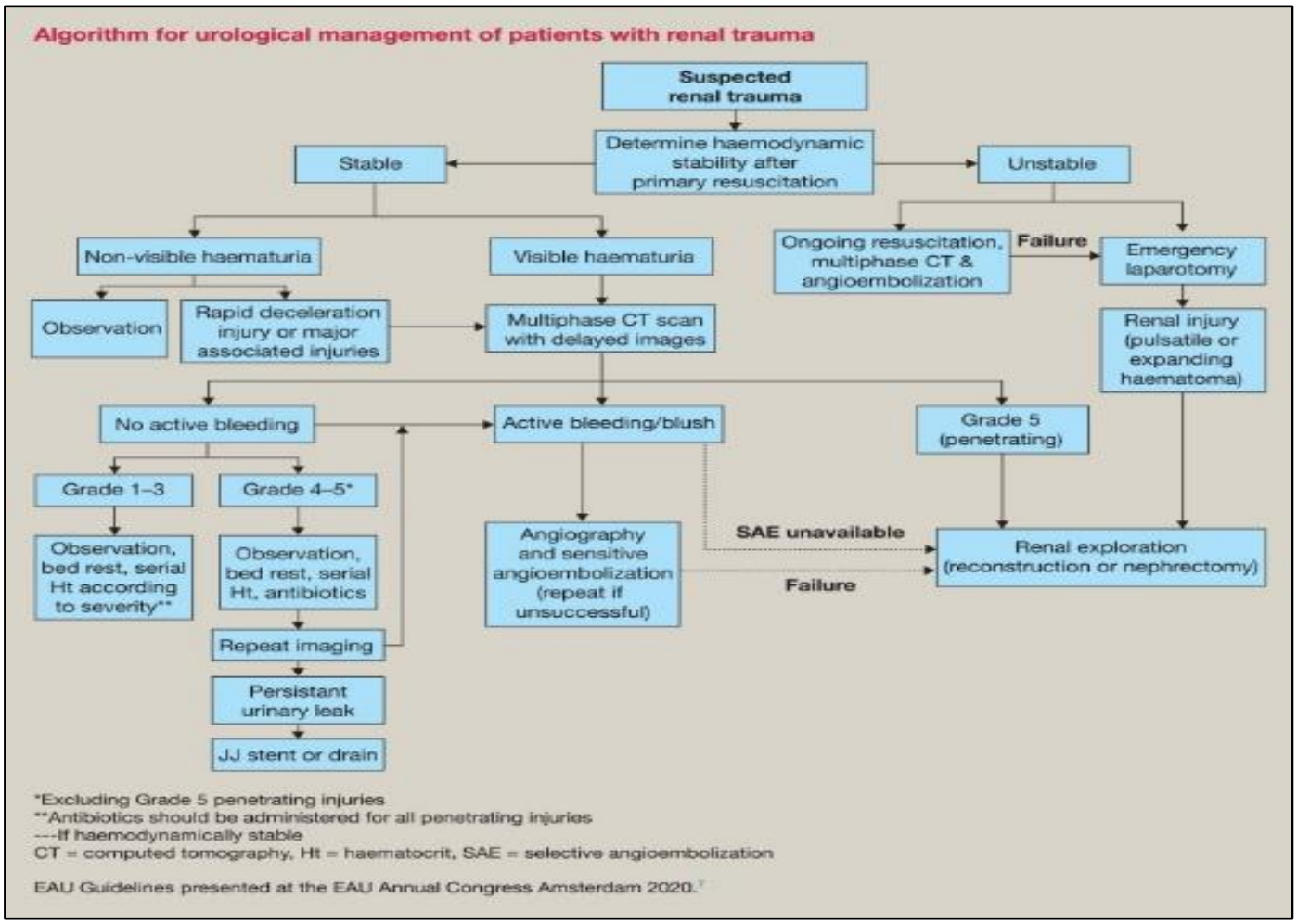

Fig 3 Algorithm for Urological Management of Patients with Renal Trauma

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III. CONCLUSION

This case highlights the diagnostic challenges associated with posterior stab injuries and the need for a high index of suspicion for retroperitoneal organ damage. Early surgical exploration in the presence of worsening abdominal signs allowed timely identification and repair of a left renal laceration. Successful renorrhaphy preserved renal function and contributed to an uncomplicated recovery. Prompt recognition, appropriate imaging, and timely operative intervention remain essential for optimal outcomes in penetrating renal trauma.

REFERENCES

[1]. Shridevi Singh[1]; Kelley Sookraj[2]. Kidney Trauma, 2023 [Pub Med]
[2]. Baghdanian AH, Baghdanian AA, Armetta A, Babayan RK, LeBedis CA, Soto JA, Anderson SW. Utility of MDCT findings in predicting patient management outcomes in renal trauma. Emerg Radiol. 2017 Jun;24(3):263-272. [PubMed]
[3]. Ząbkowski T, Skiba R, Saracyn M, Zieliński H. Analysis of Renal Trauma in Adult Patients: A 6-Year Own Experiences of Trauma Center. Urol J. 2015 Sep 04;12(4):2276-9. [PubMed]
[4]. McPhee M, Arumainayagam N, Clark M, Burfitt N, DasGupta R. Renal injury management in an urban trauma centre and implications for urological training. Ann R Coll Surg Engl. 2015 Apr;97(3):194-7. [PMC free article] [PubMed]
[5]. Heller MT, Schnor N. MDCT of renal trauma: correlation to AAST organ injury scale. Clin Imaging. 2014 Jul-Aug;38(4):410-417. [PubMed]
[6]. Voelzke BB, Leddy L. The epidemiology of renal trauma. Transl Androl Urol. 2014 Jun;3(2):143-9. [PMC free article] [PubMed]
[7]. Dayal M, Gamanagatti S, Kumar A. Imaging in renal trauma. World J Radiol. 2013 Aug 28;5(8):275-84. [PMC free article] [PubMed]