



Research Article

RETROSPECTIVE ANALYSIS OF MANAGEMENT OF RENAL TRAUMA-OUR INSTITUTIONAL EXPERIENCE

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ARTICLE INFO

Article History:

Received 5th April, 2018
Received in revised form 24th May, 2018 Accepted 20th June, 2018
Published online 28th July, 2018

Key words:

Partial nephrectomy[1, 3], Total nephrectomy[1, 3], Double j stent[3], Renal injury[1].

ABSTRACT

Introduction: Renal Trauma Is A Major Cause of Morbidity And Mortality.80% – 95% of Cases Occur Due To Motor Vehicle Collisions And Fall From Heights. Renal Trauma Is Common Among Young Males, In Age Group of 25-35 years. There has been a shift from radical to conservative treatment even in higher grades of renal injuries [2,3].

Aim: To Review The Management of Renal Injury, Various Grades of Presentations From The Period Between August 2015 To June 2018.

Materials and Methods: For all the Cases with Renal Injury, Records and Imaging System Were Reviewed. Initially evaluated with complete haemogram, ultrasound abdomen. Contrast ct Abdomen And Renal Injury Was Graded According to American Association For Surgery of Trauma Classification [1, 4, 5]. Management Was Done Based On The Grade Of Injury As Conservative, Minimally Invasive And Surgical Groups.

Results: Total Number of Patients Included Were 30(n=30). Males Were 26 and Females were 04. AGE: < 20 yrs were 12, 21-30 Were 08, 31-40 Were 06 and >40 Were 4. Grade I-10, Grade II- 06, GRADE III- 04, Grade IV-08 And Grade V Were 02. Conservative Treatment Done For 20, DJ Stenting IN 04, Partial Nephrectomy IN 04 and Nephrectomy IN 02.

Conclusion: Blunt Renal Trauma Management Has Changed From Radical To More Conservative Even In High Grade Injuries. Minimally Invasive Procedure, DJ Stenting Plays A Major Role. More Renal Units Can be Salvaged by Conservative management.

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INTRODUCTION

Renal trauma occurs in 8%–10% of blunt or penetrating abdominal trauma and 1%–5% of any trauma [1]. Blunt renal trauma is more common 80% to 95% -due to motor vehicle collisions and fall from heights. Renal trauma is common among young males, in age group of 25 – 35 years. Decision making on management of renal injuries has changed over time. 1940 is the year when conservative management of blunt renal trauma was first proposed. Benefits of this approach are reduction in nephrectomy rate, complications, and hospital stay.

MATERIALS AND METHODS

Retrospective analysis of all the Renal trauma patients during the Study period from Jan 2015 to April 2018 was done.

All cases were admitted through casualty. Majority of them were road traffic accident with blunt abdominal trauma. Patients were initially stabilized with intravenous fluids and blood.

Vitals like blood pressure, pulse, oxygen saturation were monitored patients were evaluated with CBC, renal function test, abdominal USG and CECT abdomen [1, 2]. Multi disciplinary approach for polytrauma. For all cases with renal trauma patient record and imaging systems were reviewed. Demographic data, mechanism, grade of renal trauma and outcome were analyzed.

CT images were reviewed and the severity of renal injury were graded according to the

American Association for the Surgery of Trauma kidney injury scale [1, 4, 5]

Grade1- Contusion - Microscopic or gross haematuria, urological studies normal
Hematoma-Sub capsular nonexpanding hematoma without parenchymal laceration

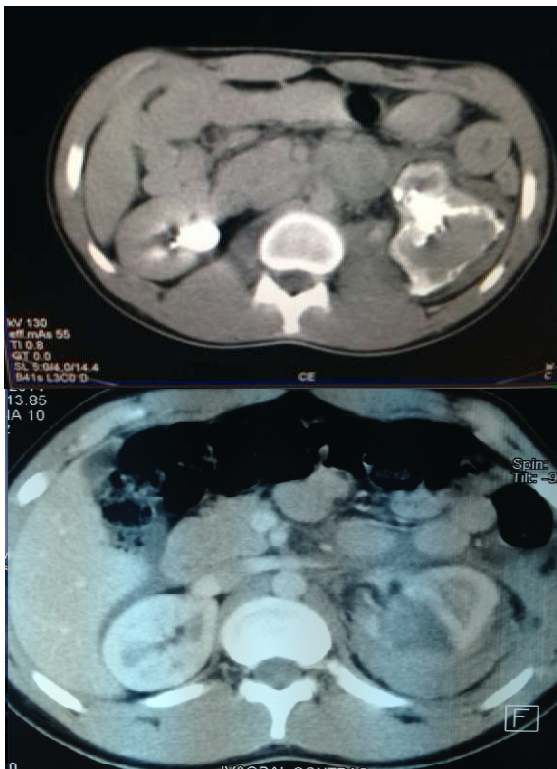
Grade 2- Hematoma-Non expanding perirenal hematoma confined to renal retroperitoneum
Laceration- <1 cm of parenchymal depth of renal cortex without urinary extravasation

Grade 3 – Laceration- >1 cm of parenchymal depth of renal cortex without collecting system rupture or urinary extravasation

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Grade 4 –

Laceration- Parenchymal laceration extending through renal cortex, medulla and collecting system
 Vascular-Main renal artery or vein injury with contained haemorrhage



Grade 5

Laceration- Completely shattered kidney Vascular-Avulsion of renal hilum, which de-vascularises kidney Based on the vitals patients who are stable with renal injury grade 1 to 4 were conservatively managed and observed in intensive care unit with strict bed rest and output monitoring via urinary catheter. Hourly hemogram. Bloodpressure, pulse, urine output, oxygen saturation, abdomen girth was monitored.

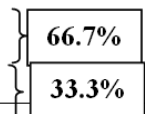
Patients with decreasing hematocrit, massive hematuria, CT showing grade 5 injuries, associated other visceral injuries, hemoperitoneum are subjected to emergency laparotomy. Shattered kidney, vascular pedicle avulsion were managed with total nephrectomy.

Partial polar renal injuries, perinephric hematoma, urinoma were managed with DJ stenting, partial nephrectomy.

RESULTS

Demographic Data

Sex	Male	26 (86.7%)
	Female	04 (13.3%)
Age (yrs.)	< 20	12 (40.0%)
	21 to 30	08 (26.7%)
	31 to 40	06 (20%)
	> 40	04 (13.3%)



Renal trauma cases by American Association for the Surgery of Trauma grading system

	Grade I	Grade II	Grade III	Grade IV	Grade V	Total
Blunt injury	10	06	04	08	02	30
Penetrating injury	0	0	0	0	0	0
RTA	08	06	04	02	02	28 (93.3%)
Fall	02	0	0	0	0	02 (6.7%)
Total	10(33.3%)	06(20%)	04 (13.3%)	08 (26.7%)	02 (6.7%)	30

Clinical features

Hemodynamically unstable	6 cases	20%
Anemia Hb < 10 gm	10 cases	33.3%
Hematuria	10 cases	33.3%
Guarding	30 cases	100%
Renal angle tenderness	30 cases	100%

Management

Conservative management	10 cases	Grade I	66.7%
	6 cases	Grade II	
	4 cases	Grade III	80 %
DJ stenting	2 case		
DJ stenting with PCD	2 case	Grade IV	13.3%
Partial nephrectomy	4 case	Grade IV	13.3%
Nephrectomy	2 case	Grade V	6.7 %

CONCLUSION

Blunt renal trauma management has changed from radical to more conservative management even in severely damaged kidneys. Minimally invasive procedures, DJ stenting and PCD play a major role in downgrading morbidity and mortality. More renal units can be salvaged by conservative management.

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