Research Article

Is conservative treatment a valid option in management of most renal trauma grades?

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Introduction

Trauma is a leading cause of morbidity and mortality all over the world. Blunt abdominal trauma accounts for more abdominal injuries than the less frequent penetrating injuries. The kidneys are located high up in the retroperitoneum, well protected and cushioned by the peritoneum and abdominal viscera anteriorly and by the tough musculoskeletal structures of the posterior abdominal wall posteriorly [1] Urinary tract injuries occur in 3%–10% of all abdominal trauma patients, the kidney being the most commonly injured organ. The vast majority (80%– 90%) of cases are secondary to blunt abdominal trauma. The most significant renal trauma is associated with injury to other major organs. On the other hand, up to 95%–98% of isolated renal injuries are considered minor injuries and are managed non-surgically because they usually heal spontaneously without complications[2]. The use of computed tomography (CT) in evaluation of abdominal trauma has influenced the current trends in the management of solid organ injuries towards non-operative managements. Even though the decision for operative intervention is usually based on clinical criteria rather than on imaging findings, CT information frequently increases the diagnostic confidence of the surgeons and influences clinical management decision and plays an important role in decreasing the rates of unnecessary exploratory laparotomy [3]

Patients and Methods

Study Design:
Prospective study:
Source of data:
All patients clinically suspected of having renal trauma (RT)and admitted at Minya University Hospital.

Sample Size:
The study comprised a total of 25 patients (20 males and 5 females) that were clinically suspected of having renal trauma (RT).
Duration: one year, from May 2014 to May 2015.

Inclusion Criteria:-
Our inclusion criteria were patients clinically suspected of having renal trauma

Exclusion Criteria:-
Our exclusion criteria were, severely shocked patients who couldn't be transported to imaging unit and patients not giving consent.

Primary assessment involved:
A- Complete history taking: including patient name, age, sex, occupation, time and type of trauma, side and mechanism of injury, past urological history or chronic diseases, any medical 1st aid measures previously done.
B- All patients underwent complete physical examination stressing on vital signs: blood pressure (BP), pulse rate (PR) respiratory rate (RR),temperature.
C- General assessment: our general assessment was according to the role of A B C D E F G H: airway, breathing, circulation, disability, exposure, fundus examination, and hypo-thermia.
D- Emergency laboratory investigations: Serial hemoglobin and hematocrit levels are important markers of blood loss and guide management strategies.(A low hematocrit, especially in the presence of shock, implies the need for rapid resuscitation). Response to initial resuscitation and need for transfusion were recorded.

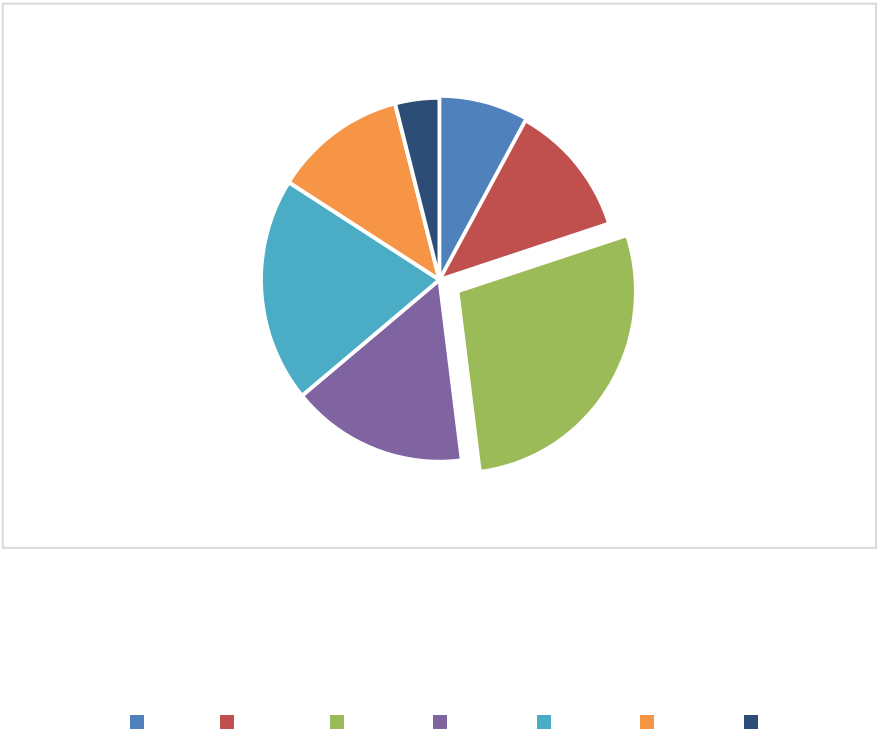
Results

Prospective study included 25 patients (20 males & 5 females)

who were clinically suspected of having renal injury and referred to Mania university hospital from May 2014 to may 2015

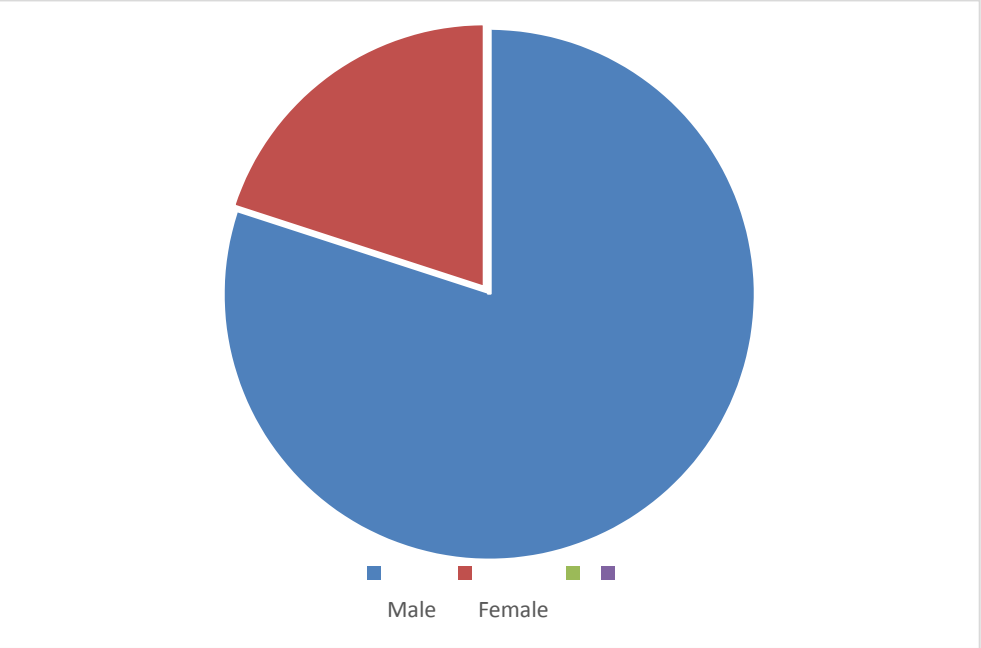
Table of age distribution

Age	**No**
0-10	2
11-20	3
21-30	7
31-40	4
41-50	5
51-60	3
61-70	1



The age range was from 6 to 65 years with an average 40 years in male and 30 years in females.
Sex distribution

Gender	No
Male	20
Female	5



Male are more exposed to trauma than females the ratio were 80% males to 20% females

Discussion

The conservative treatment of blunt renal trauma was first proposed in the 1940, since then the benefits of this approach have become increasingly apparent with reduction in nephrectomy rate, complications and hospital stay, resulting in managing sever blunt renal trauma with conservative treatment.

American association for the surgery of trauma (AAST) kidney injury severity scale:
Grade 1: contusion, hematoma, nonexpanding subcapsular hematoma.
Grade 11: hematoma, cortical lacerations <1 cm, no extravasations.
Grade 111: cortical lacerations >1cm, no urinary extra vas Grade1V:cortico medullary and collecting system lacerations.
Grade V: avulsion renal hilum with Deva scularzed kidney.

The recently released AUA guideline recommends initiation of conservative management in all patients as long as they are hemodynamically stable.

Grade V injury and the need for platelet transfusion, which reflect activation of amassive transfusion protocol, have been a good predictors of the need for intervention.

Additionally, normogram have been developed that are able to predict the need for renal exploration with >95% accuracy, one such normogram incorporates a combination of radiological (injury grade), serological (admission hemoglobin, blood urea nitrogen), and clinically (heart rate, platelet transfusion within 24 h), and is even able to predict the need for renal exploration in the context of a

unit that offers embolization as an alternative to surgery.

Summary and Conclusion

Renal trauma account for about 3% of all trauma admissions and 10% of patients who sustain abdominal trauma. the kidney is the most common injured urological organ and most challenging to treat.

Etiology

The following list is not all inclusive, but it highlights the major mechanisms that generate renal trauma.

- Penetrating (e.g. gunshot wound, stab wounds).
- Blunt (e.g. motor vehicle crash, sports and fall on ground).
- Iatrogenic (e.g. renal biopsy, ESWL, Endo procedures).
- Other (e.g. renal transplant rejection).

Evaluation

An assessment of clinical history, physical examination, radiological findings, all these help presumptive diagnosis and treatment plan.

A) History:

History of blunt versus penetrating trauma, flank or abdominal pain, rapid deceleration (e.g., vehicle accident, fall from height) firearm injury, stab wound.

B) Clinical evaluation:

The most important indicators for significant injury are manifestations of shock, Hematuria, hypotension, flank hematoma, abdominal or flank tenderness and penetrating injuries to low thorax or flank.

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