





Renal injuries are classified into grades 1 to 5 based on the severity of the injury using the American Association for the Surgery of Trauma (AAST) organ injury severity scale:

- Grade 1: Contusion or non-expanding subcapsular haematoma without parenchymal laceration.
- Grade 2: Non-expanding perirenal haematoma, laceration <1 cm deep without extravasation.
- Grade 3: Laceration >1 cm without urinary extravasation.
- Grade 4: Laceration extending through renal cortex into collecting system, or segmental renal artery or vein injury with contained haemorrhage, or partial vessel laceration, or vessel thrombosis.
- Grade 5: Laceration with shattered kidney, or renal pedicle injury, or avulsion of renal hilum.

REMARKS

1 General

- 1.1 Surgical operation should be given first priority if the patient is haemodynamically unstable.

2 Intravenous urogram (IVU)

- 2.1 The use of IVU is recommended when it is the only modality available. IVU can be used to establish the presence or absence of one or both kidneys, clearly define the parenchyma, and outline the collecting system. The most significant findings are non-function and extravasation.

3 US

- 3.1 US should not be used as a primary imaging modality because it gives no information about the renal function and may show an apparently normal kidney when the renal artery is occluded.
- 3.2 While the role of Focused Assessment with Sonography for Trauma (FAST) in the haemodynamically unstable trauma patient is well recognized, its utility in the haemodynamically stable patient is more controversial, as CT is usually required for precise delineation of underlying injuries.
- 3.3 US is useful for the routine follow-up of parenchymal lesions or haematomas in the intensive care unit and for serially evaluating stable injuries for the resolution of urinomas and retroperitoneal haematomas.

4 CT

- 4.1 CT is currently the gold standard to assess renal trauma.
- 4.2 Contusions, lacerations (and their extent), extra-renal haematomas and urinary extravasation can all be identified on CT.
- 4.3 Intravenous contrast administration is necessary.

5 Angiography

- 5.1 Arteriography has a high degree of specificity in detecting the bleeder, it is usually performed as part of a therapeutic embolization and directed towards a suspected abnormality detected on contrast-enhanced CT. The additional contrast load administered during embolotherapy does not seem to have long-term impact on renal function. Embolotherapy has been shown to be safe and effective in the management of renovascular injuries and may be associated with shorter hospital stay compared to surgical intervention.

REFERENCES

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