URETERS Renal trauma

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Kidneys are retroperitoneal structures; they are relatively fixed by their vascular pedicles and are well protected by perinephric fat, strong posterior abdominal wall muscles and the lower rib cage. Renal trauma is usually a part of polytrauma and is present in only 5% of all trauma cases. Mechanism of injury Trauma may be penetrating or blunt, the latter being far more common. Common modes of injuries are head-on collisions in road tra ffi c accidents, falls from height and contact sports. Sudden, rapid deceleration can cause avulsion injury to the ureters at the PUJ or renal pedicle. Penetrating injuries cause direct tissue disruption and are usually associated with adjacent organ injuries. Presentation Patients with polytrauma may present with loss of conscious ness and haemodynamic shock because of associated injuries. Haematuria – gross or microscopic – is pathognomonic of renal trauma; however, its absence does not exclude serious renal trauma. Similarly , the sev erity of renal trauma does not correlate with the degree of haematuria. Trauma causing lower rib fractures with or without vertebral fractures and abdominal pain with flank contusions should raise suspicion about the underlying renal injury and should be evaluated further. Management CECT of the abdomen is necessary to delineate the type and extent of renal injury . It provides information about the pres ence of parenchymal laceration, its depth, extension into the pelvicalyceal system and the extent of urinary extravasation (Figure 82.11). It also provides valuable informa tion about other abdominal injuries and the status of the contralateral kidney . Based on the CECT , renal injuries are classified accord ing to the renal injury scale of the American Association for the Surgery of Trauma (Figure 82.12). Common indications for CECT in abdominal trauma include: /uni25CF abdominal trauma with gross haematuria; /uni25CF microscopic haematuria with hypotension (systolic <90 /uni00A0 mmHg); /uni25CF rapid deceleration injury; /uni25CF children with microscopic haematuria (>5 red blood cells [RBCs]); /uni25CF all penetrating injuries. Conservative management with close surveillance is su ffi cient in the majority of cases of isolated renal trauma. Lower grade injuries, sometimes including grade IV , can be managed conservatively with bed rest, antibiotics in case of penetrating injuries and serial haemoglobin estimation. Reimaging is usu ally done after 2–4 days in cases of falling haemoglobin le fever or expanding flank mass. Persistent urinary leak can be managed with an internal DJ stent or PCN. Indications for emergency surgical exploration are: - /uni25CF expanding or pulsatile retroperitoneal haematoma; /uni25CF PUJ avulsion; /uni25CF renal pedicle injury; /uni25CF haemodynamic instability .

Figure 82.11 Axial image showing pelviureteric injury with contrast in the peripelvic region (courtesy of Department of Urology, Christian Medical College, Vellore, India).

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