

Ureteral trauma

Ureteral trauma

Most ureteral injuries are iatrogenic and occur during surgery near the ureter. Gunshot or penetrating injuries to the abdomen can cause ureteric injury. Management of ureteral injuries as a result of external trauma is dictated by the severity of trauma and associated visceral injuries.

Iatrogenic ureteral injury The overall incidence of iatrogenic ureteral injury varies between 0.5% and 1.0%. Hysterectomy accounts for most of these cases, followed by ureteroscopy. Common sites of injuries to the pelvic ureter are at the pelvic brim, where it might be injured while ligating the infundibulopelvic ligament; at the bifurcation of the common iliac artery, while ligating the internal iliac artery; or at the paracervical region, while developing the ureteric tunnel or while clamping and dividing the upper vagina. During open surgery, ureteral injury may be identified intraoperatively. However, most injuries (70–80%) are identified postoperatively. The postoperative course of these patients can be difficult and presentation may include abdominal pain, fever or sepsis. It is not uncommon to miss ureteric injuries; if left unrecognised, they can lead to significant morbidity, such as formation of urinoma, abscess, ureteral stricture and urinary fistula.

Management of iatrogenic ureteral injury Triphasic abdomen and pelvic CECT is the imaging modality of choice. The choice of treatment is based on the location, type, extent and timing of presentation. If an injury is recognised intraoperatively or in the immediate postoperative period, it should be surgically repaired immediately. The viability of the ureter must be assessed. In cases of contusion, DJ stenting must be performed. In cases of partial transection, primary repair over a DJ stent may be performed. A tension-free spatulated ureteric anastomosis using fine absorbable sutures can be done for short segment loss. This is usually done in upper ureteric injuries (Figure 82.13). Longer segment loss, especially in the pelvic ureter, is managed by ureteroneocystostomy with or without a Boari flap. Longer defects up to 15 cm can be repaired by mobilising and hitching the bladder to the psoas major muscle (psoas hitch) with a Boari flap (Figure 82.14). Transureteroureterostomy (anastomosing the injured ureter to the contralateral ureter) can be an option in selected situations. Delay in diagnosis would result in late presentation and delay the definite repair by 2–3 months to allow resolution of urinoma and periureteric inflammation. In such situations an initial endourological approach either with a retrograde ureteric stent or with PCN would decrease the morbidity associated with urinoma and help to preserve renal function.

Kidney capsule Peritoneum Subcapsular Haematoma haematoma Laceration <1 cm Grade IV Laceration into collecting system Figure 82.12 Classification of renal trauma. Suspect renal injury in abdominal trauma in adults with modes of injury such as sudden deceleration, penetrating injury directed towards the renal bed, hypotension and haematuria and in children Triphasic (arterial, nephrogenic and delayed phase) CT is the investigation of choice to diagnose and grade urinary tract injury in a haemodynamically stable patient Most grade I–IV renal trauma (including penetrating injuries) can be managed conservatively Most ureteric injuries are iatrogenic and

prompt diagnosis will prevent morbidity Laceration

“ 1 cm Grade V Renal artery or vein injury Arterial blood clot from endothelial
Avulsion injury of hilum Kidney shattered

Revision #1

Created 2025-12-31 15:29:53 UTC by Omar Ayman

Updated 2025-12-31 15:29:53 UTC by Omar Ayman