

Management and prevention of Urinary tract trauma

Is it important to the Mediterranean region?

Prof.Dr. Sherif Mourad

Professor of Urology
Faculty of Medicine
Ain Shams University

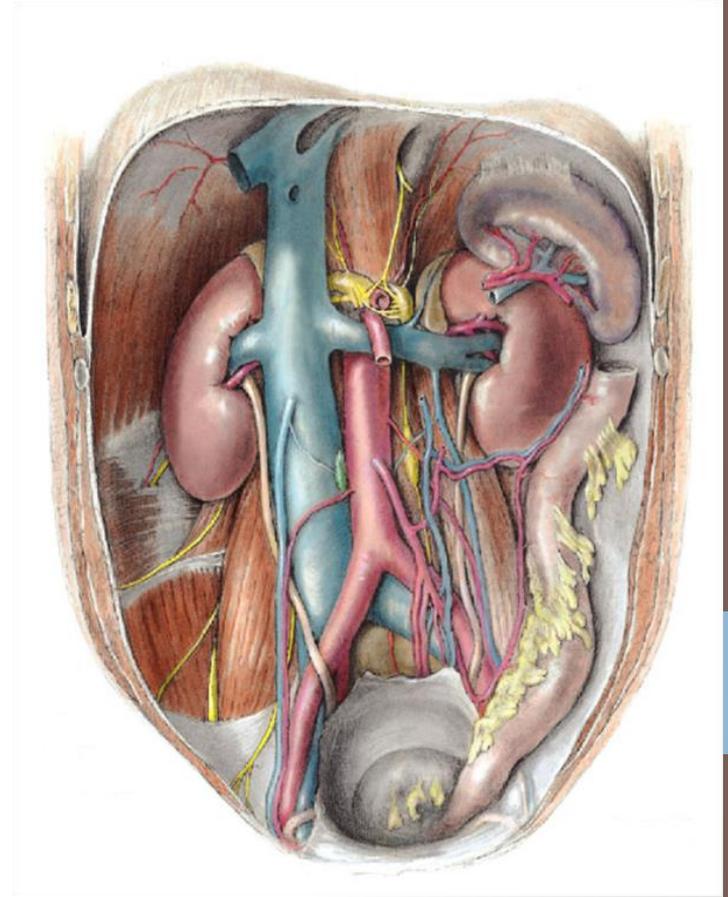
Urological trauma

- 1) **Renal injuries**
- 2) Ureteral injuries
- 3) Bladder injuries
- 4) Urethral Injuries



URETERIC INJURIES

- The ureters are protected from external trauma by surrounding bony structures, muscles and other organs.
- **Causes and Mechanisms :**
 - External Trauma.
 - Internal Trauma.



Ureteric injuries...

- **Internal Trauma**

- Uncommon, but is more common than external trauma.
- Surgery:
 - Hysterectomy, oophorectomy, and sigmoidcolectomy.
 - Ureteroscopy.
 - Caesarean section.
 - Aortoiliac vascular graft placement.
 - Laparoscopic procedures.
 - Orthopedic operations.



Ureteric injuries...

- Diagnosis:

- Requires a high index of suspicion
- Intraoperative:
- Late:



1. An ileus: the presence of urine within the peritoneal cavity.
2. Prolonged postoperative fever or overt urinary sepsis.
3. Persistent drainage of fluid from abdominal or pelvic drains, from the abdominal wound, or from the vagina.
4. Flank pain if the ureter has been ligated.
5. An abdominal mass, representing a urinoma.
6. Vague abdominal pain.

Prevention of iatrogenic ureteric trauma

- It depends upon the visual identification of the ureters and careful intraoperative dissection in their proximity.
- The use of prophylactic preoperative ureteral stent insertion assists in visualization and palpation and is often used in complicated cases. However, it does not decrease the rate of injury.
- Stenting is probably also useful in secondary prevention by making it easier to detect ureteral injury.
- Routine prophylactic stenting is generally not cost-effective. In hysterectomy, it was estimated to become cost-effective when the rate of injury exceeded 3.2%, and it is therefore advocated only in selected patients with risk factors.

Urological trauma



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BLADDER INJURIES

- **Causes:**

- **Iatrogenic injury:**

- Transurethral resection of bladder tumour (TURBT).
- Cystoscopic bladder biopsy.
- Transurethral resection of prostate (TURP).
- Cystolitholapaxy.
- Caesarean section, especially as an emergency.
- Total hip replacement (very rare).

- Penetrating trauma to the lower abdomen or back.

- Blunt pelvic trauma—in association with pelvic fracture or ‘minor’ trauma in the inebriated patient.

- Rapid deceleration injury—seat belt injury with full bladder in the absence of a pelvic fracture.

- Spontaneous rupture after bladder augmentation.

Types of Perforation

A-intraperitoneal perforation

The peritoneum overlying the bladder, has been breached along with the wall of the bladder, allowing urine to escape into the peritoneal cavity.



B- Extraperitoneal perforation

The peritoneum is intact and urine escapes into the space around the bladder, but not into the peritoneal cavity.



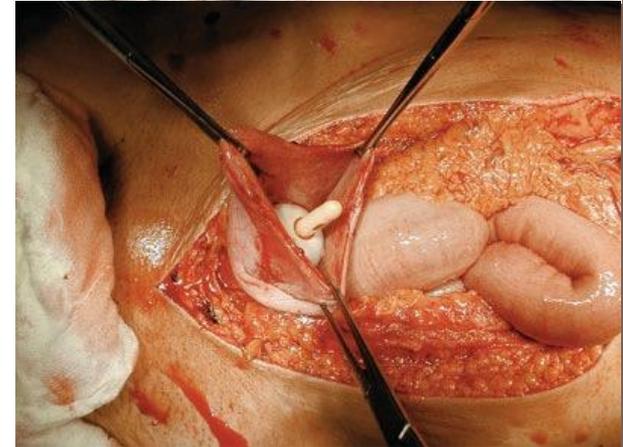
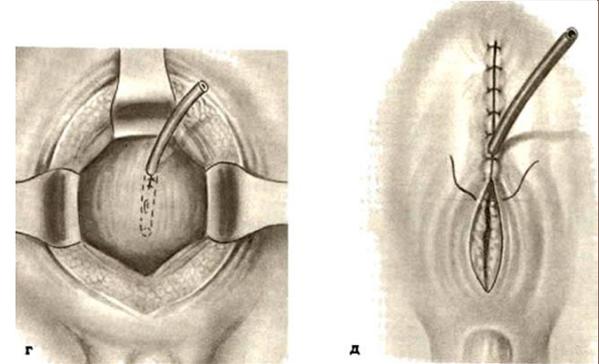
Bladder injuries...

- Presentation:
 - Recognized intraoperatively.
 - The classic triad of symptoms and signs that are suggestive of a bladder rupture: **suprapubic pain and tenderness, difficulty or inability in passing urine, and hematuria.**



Bladder injuries...

- **Management:**
 - Extraperitoneal:
 - Bladder drainage +++++
 - Open repair +++
 - Intra peritoneal:
 - open repair...why?
 - Unlikely to heal spontaneously.
 - Usually large defects.
 - Leakage causes peritonitis
 - Associated other organ injury.



THANK YOU
FOR YOUR ATTENTION