



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

- Urologic emergency arises when a condition require rapid diagnosis and immediate treatment.
- Compared to other surgical fields there are relatively few emergencies in urology.

Urological Emergencies:

Non traumatic

- ❖ Hematuria
- ❖ Renal Colic
- ❖ Urinary Retention
- ❖ Acute Scrotum
- ❖ Priapism

Traumatic

- ❖ Renal Trauma
- ❖ Ureteral Injury
- ❖ Bladder Trauma
- ❖ Urethral Injury
- ❖ Testicular Trauma

Non-Traumatic Urological Emergencies

HEMATURIA:

- Blood in the urine
- Types:
 - ❖ Macroscopic (frank, or gross hematuria)/ Dipstick hematuria / Microscopic hematuria (the presence of >3 red blood cells per high power microscopic field).
 - ❖ Painless or painful.
 - ❖ Initial / Terminal / Total
- Causes:
 - ❖ Nephrological (medical) or urological (surgical)
 - ❖ Medical causes:
 - ✓ glomerular and nonglomerular
 - ✓ blood dyscrasias, interstitial nephritis, and renovascular disease



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

- ❖ Surgical/urological nonglomerular causes:
 - ✓ renal tumours, urothelial tumours (bladder, ureteric, renal collecting system), prostate cancer, bleeding from vascular benign prostatic enlargement, trauma, renal or ureteric stones, and UTI.
 - ✓ Haematuria in these situations is usually characterised by circular erythrocytes and absence of proteinuria and casts.

Presentation:

- ❖ Hematuria
- ❖ Anemia: bleeding is so heavy (this is rare)
- ❖ Urine retention or ureteric colic (Clot retention)

Work Up:

- ❖ History
- ❖ Examination
- ❖ investigation :
 - ✓ All patients
 - ✓ Urine culture and cytology
 - ✓ Renal US
 - ✓ Flexible cystoscopy,
 - ✓ IVU or computed tomography (CT) scan in selected groups.
- ❖ Treat the cause.

Note:

Most imp. risks factor for renal tumor are: male gender-middle age –smoking

ACUTE FLANK PAIN - URETERIC OR RENAL COLIC:

- The commonest urologic emergency.
- One of the commonest causes of the “Acute Abdomen”.
- Sudden onset of severe pain in the flank
- Most often due to the passage of a stone formed in the kidney, down through the ureter.



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

The pain is characteristically :

- ❖ very sudden onset
- ❖ colicky in nature
- ❖ Radiates to the groin as the stone passes into the lower ureter.
- ❖ May change in location, from the flank to the groin, (the location of the pain does not provide a good indication of the position of the stone)
- ❖ The patient cannot get comfortable, and may roll around in agony.
- ❖ Associated with nausea / Vomiting
- ❖ *the pain of a ureteric stone as being worse than the pain of labour.*

Differential diagnosis:

- ❖ Leaking abdominal aortic aneurysms
- ❖ Pneumonia
- ❖ Myocardial infarction
- ❖ Ovarian pathology (e.g., twisted ovarian cyst)
- ❖ Acute appendicitis
- ❖ Testicular torsion
- ❖ Inflammatory bowel disease (Crohn's, ulcerative colitis)
- ❖ Diverticulitis
- ❖ Ectopic pregnancy
- ❖ Burst peptic ulcer
- ❖ Bowel obstruction

Work Up:

- ❖ History
- ❖ Examination: patient want to move around, in an attempt to find a comfortable position.
- ❖ +/- Fever
- ❖ Pregnancy test
- ❖ MSU
- ❖ Radiological investigation :
 - ✓ *KUB(90% sensitivity) / Abdominal US*
 - ✓ *IVP (was)*
 - ✓ *Helical CTU:*

- ✚ *Specific points in history of pt with renal colic:*
 - 1-*history of passing stones*
 - 2- *family history*
- ✚ *We do pregnancy test to:*
 - 1- *Exclude ectopic pregnancy*
 - 2- *As a caution before any CT or X-ray*



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

- advantages over IVP:
 - » greater specificity (95%) and sensitivity (97%) for diagnosing ureteric stones
 - » Can identify other, non-stone causes of flank pain.
 - » No need for contrast administration.
 - » Faster, taking just a few minutes
 - » the cost of CTU is equivalent to that of IVU
- ✓ *MRI*
 - very accurate way of determining whether or not a stone is present in the ureter
 - very high cost

*Gold standard for diagnosis of renal stone is **helical CT** because:*

- 1- *No contrast*
- 2- *View other systems that may cause acute abdomen*

Acute Management of Ureteric Stones:

- ❖ Pain relief
 - ✓ *NSAIDs*
 - ✓ *Intramuscular or intravenous injection, by mouth, or per rectum*
 - ✓ *+/- Opiate analgesics (pethidine or morphine).*
- ❖ *Hyper hydration ??*
- ❖ 'watchful waiting' with analgesic supplements
 - ✓ *95% of stones measuring 5mm or less pass spontaneously*

- ❖ *Hydration not safe 100% because it may lead to ureter dilatation and then loss of peristalsis and the system become static*
 - ❖ *Management of small stones:*
 - *Drink a lot of fluid*
 - *Analgesics*
 - *Back to ER if fever complicated*



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

Indications for Intervention to Relieve Obstruction and/or Remove the Stone:

- ❖ Pain that fails to respond to analgesics.
- ❖ Associated fever.
- ❖ Renal function is impaired because of the stone (solitary kidney obstructed by a stone, bilateral ureteric stones, or preexisting renal impairment)
- ❖ Obstruction unrelieved for >4 weeks
- ❖ Personal or occupational reasons

Treatment of the Stone:

- ❖ Temporary relief of the obstruction:
 - ✓ *Insertion of a JJ stent or percutaneous nephrostomy tube.*

- ❖ Definitive treatment of a ureteric stone:
 - ✓ *ESWL.*
 - ✓ *PCNL*
 - ✓ *Ureteroscopy*
 - ✓ *Open Surgery: very limited.*

ESWL= extracorporeal shock wave lithiatomy

PCNL= percutaneous nephrolithiatomy

URINARY RETENTION:

- Acute Urinary retention.
- Chronic Urinary retention.

Acute Urinary retention

- Painful inability to void, with relief of pain following drainage of the bladder by catheterization.

Pathophysiology:

- ❖ Increased urethral *resistance, i.e., bladder outlet obstruction (BOO)*
- ❖ Low bladder *pressure, i.e., impaired bladder contractility*
- ❖ Interruption of sensory or motor innervations of the bladder



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

Causes:

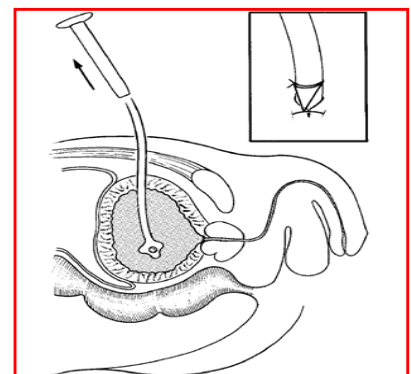
- ❖ Men:
 - ✓ *Benign prostatic enlargement (BPE) due to BPH*
 - ✓ *Carcinoma of the prostate*
 - ✓ *Urethral stricture*
 - ✓ *Prostatic abscess*
- ❖ Women
 - ✓ *Pelvic prolapse (cystocele, rectocele, uterine)*
 - ✓ *Urethral stricture;*
 - ✓ *Urethral diverticulum;*
 - ✓ *Post surgery for 'stress' incontinence*
 - ✓ *pelvic masses (e.g., ovarian masses)*
- ❖ Both Sex
 - ✓ *Haematuria leading to clot retention*
 - ✓ *Drugs*
 - ✓ *Pain*
 - ✓ *Sacral nerve compression or damage (cauda equina compression)*
 - ✓ *Radical pelvic surgery*
 - ✓ *Pelvic fracture rupturing the urethra*
 - ✓ *Neurotropic viruses involving the sensory dorsal root ganglia of S2–S4 (herpes simplex or zoster);*
 - ✓ *Multiple sclerosis*
 - ✓ *Transverse myelitis*
 - ✓ *Diabetic cystopathy*
 - ✓ *Damage to dorsal columns of spinal cord causing loss of bladder sensation (tabes dorsalis, pernicious anaemia).*

Initial Management:

- ❖ *Urethral catheterisation*
- ❖ *Suprapubic catheter (SPC)*

Late Management:

- ❖ *Treating the underlying cause*





UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

Chronic urinary retention:

- Obstruction develops slowly, the bladder is distended (stretched) very gradually over weeks/months, so *pain is not a feature* .
- Presentation:
 - ❖ Urinary dribbling
 - ❖ Overflow incontinence
 - ❖ Palpable lower suprapubic mass
- Usually associated with
 - ❖ Reduced renal function.
 - ❖ Upper tract dilatation
- R/x is directed to renal support.
- Bladder drainage under slow rate to avoid sudden decompression > hematuria.
- Late R/x of cause.

❖ Normal capacity of bladder is 500 ml but if it exceed 800 ml then retention is expected

ACUTE SCROTUM:

- Emergency situation requiring prompt evaluation, differential diagnosis, and potentially immediate surgical exploration



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

Differential Diagnosis

**Table 67–2. DIFFERENTIAL DIAGNOSIS OF THE ACUTE/
SUBACUTE SCROTUM**

Torsion of the spermatic cord
Torsion of the appendix testis
Torsion of the appendix epididymis
Epididymitis
Epididymo-orchitis
Inguinal hernia
Communicating hydrocele
Hydrocele
Hydrocele of the cord
Trauma/insect bite
Dermatologic lesions
Inflammatory vasculitis (Henoch-Schönlein purpura)
Idiopathic scrotal edema
Tumor
Spermatocele
Varicocele
Nonurogenital pathology (e.g., adductor tendinitis)

Differential Diagnosis:

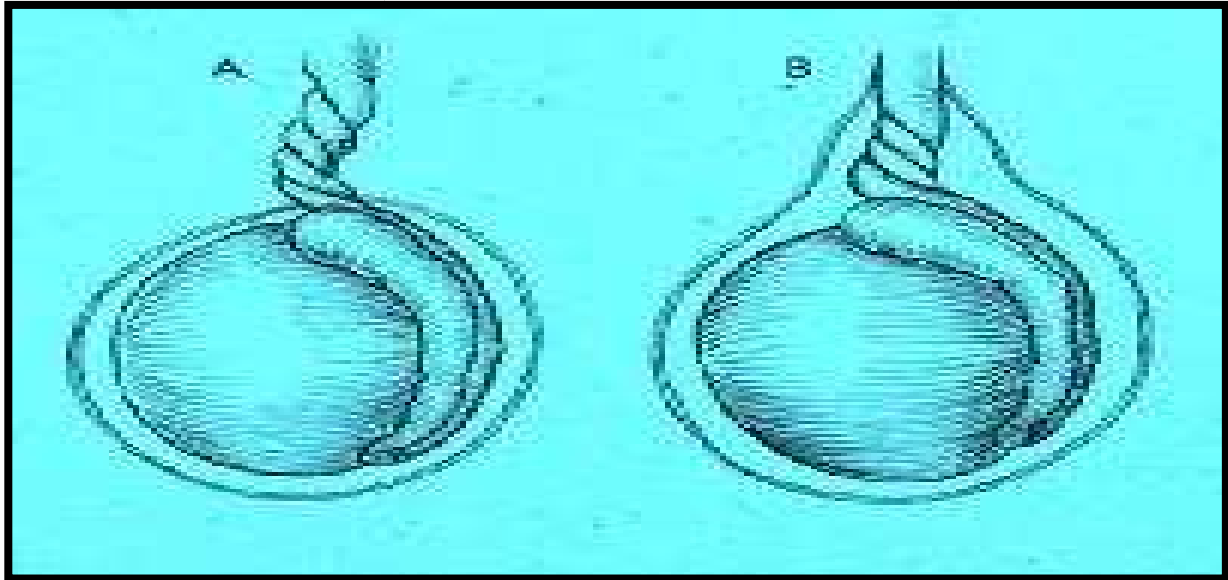
- ❖ **Torsion of the Spermatic Cord (Intravaginal)**
 - ✓ **Most serious.**
- ❖ **Torsion of the Testicular and Epididymal Appendages.**
- ❖ **Epididymitis.**
 - ✓ **Most common**



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

Torsion of the Spermatic Cord



(A) extra-vaginal

(B) Intra-vaginal

Torsion of the Spermatic Cord (Intra-vaginal):

- True surgical emergency of the highest order
- Irreversible ischemic injury to the testicular parenchyma may begin as soon as 4 hours
- Testicular salvage ↓ as duration of torsion ↑

- ❖ Extravaginal = spermatic cord & tunica vaginalis are twisted
- ❖ Intra-vaginal = only spermatic cord is twisted
- ❖ The rotation of the torsion is from lateral to medial and the manual detorsion is from medial to lateral





UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

Presentation:

- ❖ *Acute onset* of scrotal pain.
- ❖ Majority with history of *prior episodes* of severe, self-limited scrotal pain and swelling.
- ❖ N/V
- ❖ Referred to the ipsilateral lower quadrant of the abdomen.
- ❖ Dysuria and other bladder symptoms are usually absent.

Physical examination:

- ❖ The affected testis is high-riding Transverse orientation.
- ❖ Acute hydrocele or massive scrotal edema
- ❖ Cremasteric reflex is absent.
- ❖ Tender larger than other side.
- ❖ Brehns sign Positiv. *Manual detortion.*

Brehs sign=elevation of pt testis if it torsion the pain will increase if the pain decrease so it is orchitis



Adjunctive tests:

- ❖ To aid in differential diagnosis of the acute scrotum.
- ❖ To confirm the absence of torsion of the cord.
- ❖ *Doppler examination* of the cord and testis
 - ✓ High false-positive and false-negative results
- ❖ Color Doppler ultrasound:
 - ✓ Assessment of anatomy and determining the presence or absence of blood flow.
 - ✓ Sensitivity: 88.9% specificity of 98.8%
 - ✓ *Operator dependent.*
- ❖ Radionuclide imaging :
 - ✓ Assessment of testicular blood flow.
 - ✓ PPV of 75%, a sensitivity of 90%, and a specificity of 89%.
 - ✓ False impression from hyperemia of scrotal wall.
 - ✓ Not helpful in Hydrocele and Hematoma

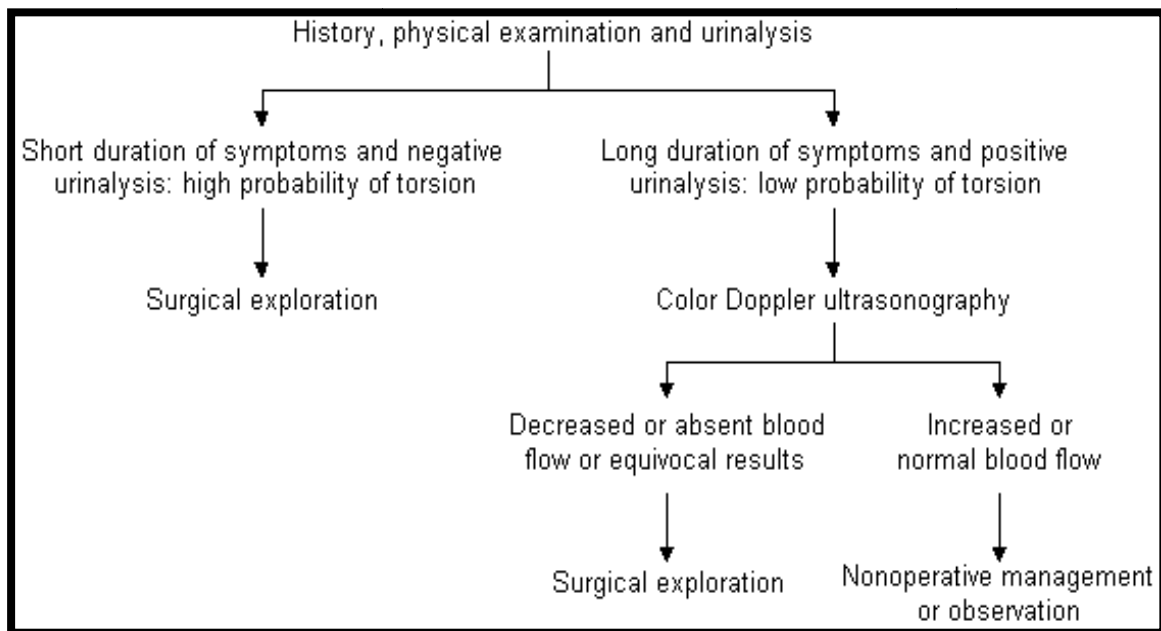


UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

Surgical exploration:

- ❖ A median raphe scrotal incision or a *transverse* incision.
- ❖ The affected side should be examined first
- ❖ The cord should be detorsed.
- ❖ Testes with *marginal viability* should be placed in warm sponges and re-examined after several minutes.
- ❖ A necrotic testis should be removed
- ❖ If the testis is to be preserved, it should be placed into the dartos pouch (*suture fixation*)



- ❖ The *contralateral* testis must be fixed to prevent subsequent torsion.

Epid.Orchitis:

Presentation:

- ❖ Indolent process.
- ❖ Scrotal swelling, erythema, and pain.
- ❖ Dysuria and fever is more common

- The most common causes of acute scrotum are torsion then orchitis
- Pt with epi-orchitis usually has history of UTI or bladder obstruction



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

P/E :

- ❖ localized epididymal tenderness, a swollen and tender epididymis, or a massively swollen hemiscrotum with absence of landmarks.
- ❖ Cremasteric reflex should be present

● Urine:

- ❖ pyuria, bacteriuria, or a positive urine culture (Gram-negative bacteria) .

● Management:

- ❖ Bed rest for 1 to 3 days then relative restriction .
- ❖ Scrotal elevation, the use of an athletic supporter
- ❖ parenteral antibiotic therapy should be instituted when UTI is documented or suspected.
- ❖ Urethral instrumentation should be avoided

Utheral catheter should be avoided in case of epi-orchitis because it will augment the obstruction

PRIAPISIM:

- Persistent erection of the penis for more than *4 hours* that is not related or accompanied by sexual desire.
- **2 Types:**
 - ❖ ischaemic (veno-occlusive, low flow (most common))
 - ✓ Due to haematological disease, malignant infiltration of the corpora cavernosa with malignant disease, or drugs.
 - ✓ Painful.
 - ❖ nonischaemic (arterial, high flow).
 - ✓ Due to perineal trauma, which creates an arteriovenous fistula.
 - ✓ Painless
- **Age:**
 - ❖ Any age
 - ❖ two main age groups affected are 5- to 10-year-old boys and 20- to 50-year-old men.



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

- **Causes:**

- ❖ Primary (Idiopathic) : 30%- 50%
- ❖ Secondary:
 - ✓ *Drugs*
 - ✓ *Trauma*
 - ✓ *Neurological*
 - ✓ *Hematological disease*
 - ✓ *Tumors*
 - ✓ *Miscellaneous*

The most common cause of priapism is sickle cell anemia (the clot of blood will obstruct the venous drainage)

- **The diagnosis:**

- ❖ Usually obvious from the history
 - ✓ *Duration of erection >4 hours?*
 - ✓ *Is it painful or not?*
 - ✓ *Previous history and treatment of priapism ?*
 - ✓ *Identify any predisposing factors and underlying cause*
- ❖ Examination
 - ✓ *Erect, tender penis (in low-flow priapism).*
 - ✓ *Characteristically the corpora cavernosa are rigid and the glans is flaccid.*
 - ✓ *Abdomen for evidence of malignant disease*
 - ✓ *DRE: to examine the prostate and check anal tone.*
- ❖ Investigations:
 - ✓ CBC (white cell count and differential, reticulocyte count)
 - ✓ Hemoglobin electrophoresis for sickle cell test
 - ✓ Urinalysis including urine toxicology
 - ✓ Blood gases taken from either corpora,
 - *low-flow (dark blood; pH <7.25 (acidosis); pO₂ <30mmHg (hypoxia); pCO₂ >60mmHg (hypercapnia))*
 - *high-flow (bright red blood similar to arterial blood at room temperature; pH = 7.4; pO₂ >90mmHg; pCO₂ <40mmHg)*
 - ✓ Colour flow duplex ultrasonography in cavernosal arteries:
 - *Ischaemic (inflow low or nonexistent)*
 - *Nonischaemic (inflow normal to high).*
 - ✓ Penile pudendal arteriography

- **Treatment:**

- ❖ Depends on the type of priapism.
- ❖ Conservative treatment should first be tried
- ❖ Medical treatment
- ❖ Surgical treatment.



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

- ❖ Treatment of underlying cause
- ☒ →→ It is important to warn all patients with priapism of the possibility of impotence.

Traumatic Urological Emergencies

RENAL INJURIES:

- The kidneys relatively protected from traumatic injuries.
- Considerable degree of force is usually required to injure a kidney.
- **Mechanisms and cause:**
 - ❖ Blunt
 - ✓ *direct blow or acceleration/ deceleration (road traffic accidents, falls from a height, fall onto flank)*
 - ❖ Penetrating
 - ✓ *knives, gunshots, iatrogenic, e.g., percutaneous nephrolithotomy (PCNL)*
- **Indications for renal imaging:**
 - ❖ Macroscopic hematuria
 - ❖ Penetrating chest, flank, and abdominal wounds
 - ❖ Microscopic [>5 red blood cells (RBCs) per high powered field] or dipstick hematuria a hypotensive patient (SBP <90 mmHg)
 - ❖ A history of a rapid acceleration or deceleration
 - ❖ Any child with microscopic or dipstick hematuria who has sustained trauma.
- **What Imaging Study?**
 - ❖ IVU:
 - ✓ *replaced by the contrast-enhanced CT scan*
 - ✓ *On-table IVU if patient is transferred immediately to the operating theatre without having had a CT scan and a retroperitoneal haematoma is found,*
 - ❖ Spiral CT: does not allow accurate staging
 - ❖ Renal US:
 - ✓ *Advantages:*
 - can certainly establish the presence of two kidneys
 - the presence of a retroperitoneal hematoma
 - power Doppler can identify the presence of blood flow in the renal vessels.



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

✓ *Disadvantages:*

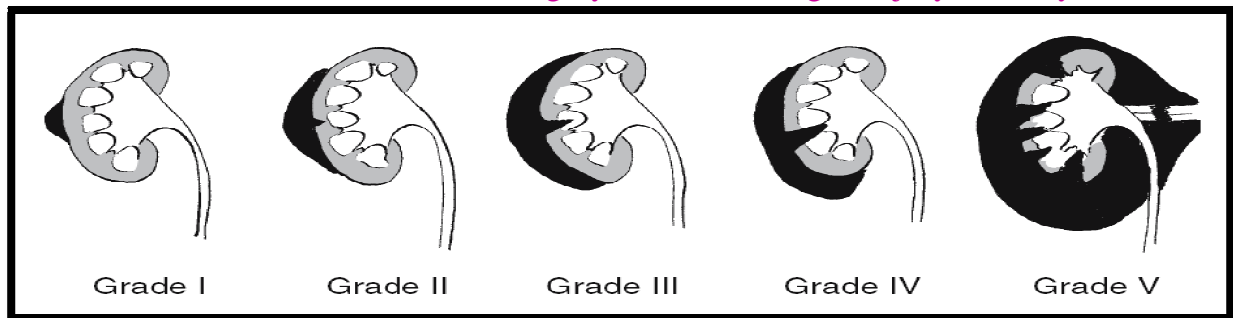
- cannot accurately identify parenchymal tears, collecting system injuries, or extravasations of urine until a later stage when a urine collection has had time to accumulate.

❖ Contrast-enhanced CT:

- ✓ *the imaging study of choice*
- ✓ *accurate, rapid, images other intra-abdominal structures*

● **Staging (Grading)**

● **American Association for the Surgery of Trauma Organ Injury Severity Scale**



● **Management:**

❖ **Conservative:**

- ✓ *Over 95% of blunt injuries*
- ✓ *50% of renal stab injuries and 25% of renal gunshot wounds (specialized center).*
- ✓ *Include:*
 - Wide Bore IV line.
 - IV antibiotics.
 - Bed rest
 - serial CBC (Htc)
 - F/up US &/or CT.
 - 2-3 wks.

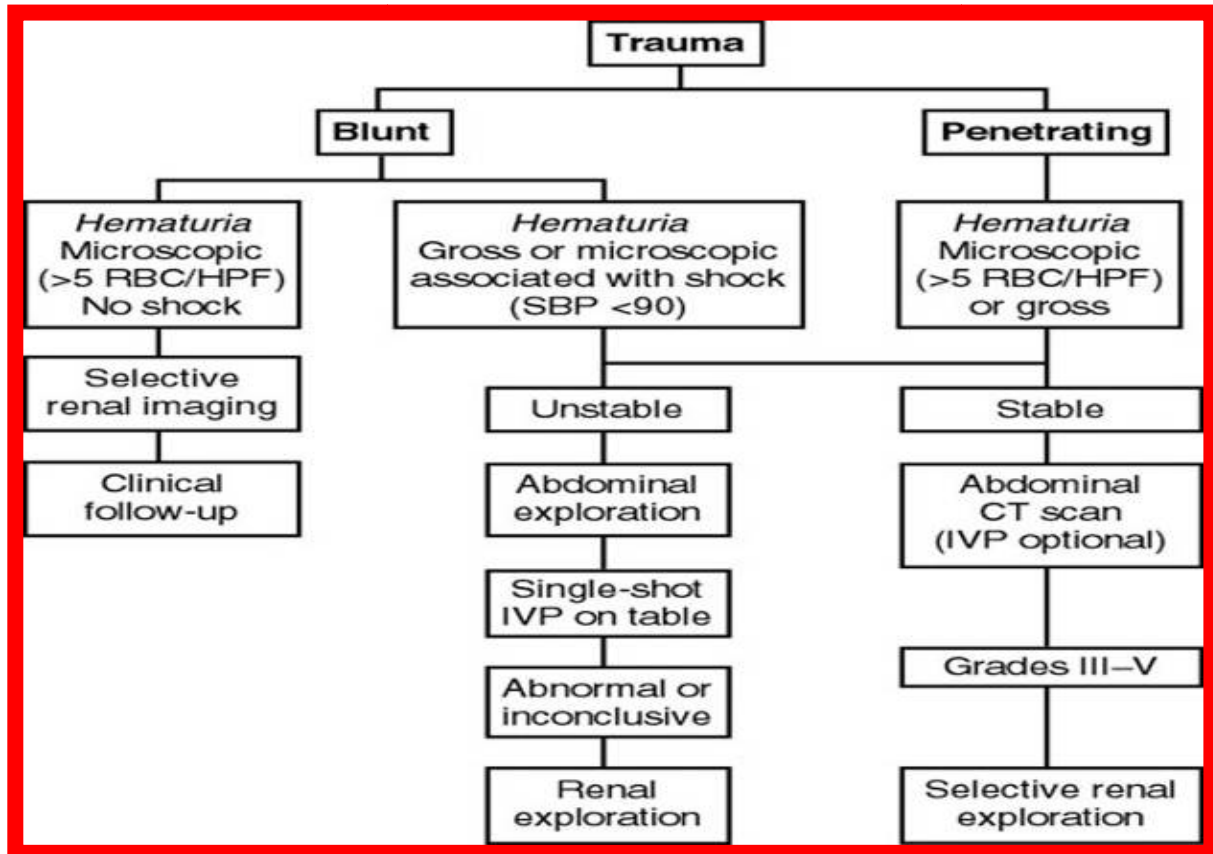
● **Surgical exploration:**

- ❖ Persistent bleeding (persistent tachycardia and/or hypotension failing to respond to appropriate fluid and blood replacement)
- ❖ Expanding perirenal haematoma (again the patient will show signs of continued bleeding)
- ❖ Pulsatile perirenal haematoma



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi



URETERIC ENJURIES:

- The ureters are protected from external trauma by surrounding bony structures, muscles and other organs
- **Causes and Mechanisms :**
 - ❖ External Trauma
 - ❖ Internal Trauma
- External Trauma:
 - ❖ Rare
 - ❖ Severe force is required
 - ❖ Blunt or penetrating.
 - ❖ Blunt external trauma severe enough to injure the ureters will usually be associated with multiple other injuries
 - ❖ Knife or bullet wound to the abdomen or chest may damage the ureter, as well as other organs.



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

- **Internal Trauma**
 - ❖ Uncommon, but is more common than external trauma
 - ❖ Surgery:
 - ✓ *Hysterectomy, oophorectomy, and sigmoid colectomy*
 - ✓ *Ureteroscopy*
 - ✓ *Caesarean section*
 - ✓ *Aortoiliac vascular graft placement,*
 - ✓ *Laparoscopic procedures,*
 - ✓ *Orthopedic operations*

- **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*
 - ✓ *7. The pathology report on the organ that has been removed may note the presence of a segment of ureter!*

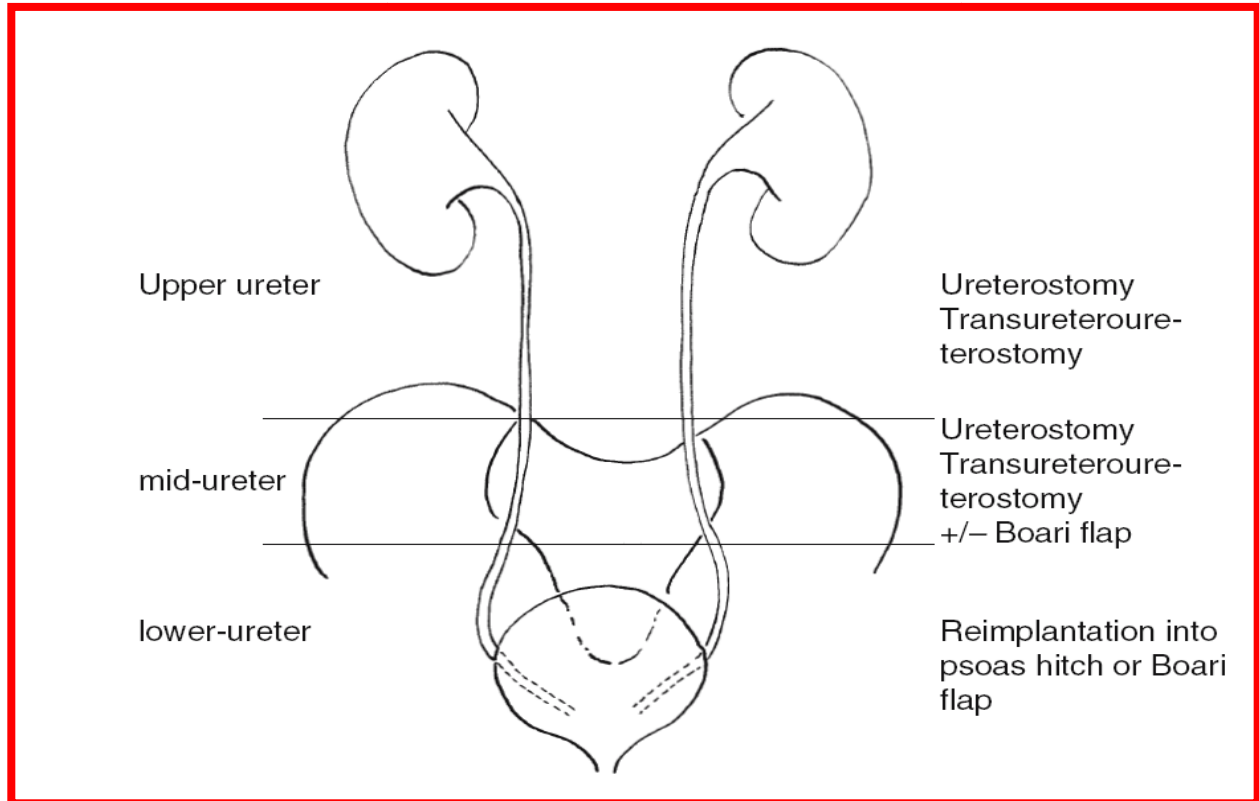
- **Treatment options:**
 - ❖ JJ stenting
 - ❖ Primary closure of partial transection of the ureter
 - ❖ Direct ureter to ureter anastomosis
 - ❖ Reimplantation of the ureter into the bladder (ureteroneocystostomy), either using a psoas hitch or a Boari flap
 - ❖ Transureteroureterostomy
 - ❖ Autotransplantation of the kidney into the pelvis
 - ❖ Replacement of the ureter with ileum
 - ❖ Permanent cutaneous ureterostomy
 - ❖ Nephrectomy



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

Ureteric injuries



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



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

- ❖ Spontaneous rupture after bladder augmentation
- Types of Perforation
 - A) intra-peritoneal perforation:
 - the peritoneum overlying the bladder, has been breached along with the wall the of the bladder, allowing urine to escape into the peritoneal cavity.





UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

B) extra-peritoneal perforation:

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



- **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 haematuria*
- **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.



UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

URETHRAL INJURIES:

- ANTERIOR URETHRAL INJURIES
- POSTERIOR URETHRAL INJURIES

Anterior urethral injuries:

- Rare
- **Mechanism:**
 - ❖ The majority a result of a straddle injury in boys or men.
 - ❖ Direct injuries to the penis
 - ❖ Penile fractures
 - ❖ Inflating a catheter balloon in the anterior urethra
 - ❖ Penetrating injuries by gunshot wounds.
- **Symptoms and signs:**
 - ❖ Blood at the end of the penis
 - ❖ Difficulty in passing urine
 - ❖ Frank hematuria
 - ❖ Hematoma may around the site of the rupture
 - ❖ Penile swelling
- **Diagnosis:**
 - ❖ Retrograde urethrography
 - ✓ *Contusion: no extravasation of contrast:*
 - ✓ *Partial rupture : extravasation of contrast, with contrast also present in the bladder.:*
 - ✓ *Complete disruption: no filling of the posterior urethra or bladder*
- **Management:**
 - ❖ Contusion
 - ✓ *A small-gauge urethral catheter for one week*
 - ❖ Partial Rupture of Anterior Urethra
 - ✓ *No urethral catheterization*
 - ✓ *Majority can be managed by suprapubic urinary diversion for one week*
 - ✓ *Penetrating partial disruption (e.g., knife, gunshot wound), primary (immediate) repair.*
 - ❖ Complete Rupture of Anterior Urethra
 - ✓ *patient is unstable a suprapubic catheter.*
 - ✓ *patient is stable, the urethra may either be immediately repaired or a*



UROLOGICAL EMERGENCY

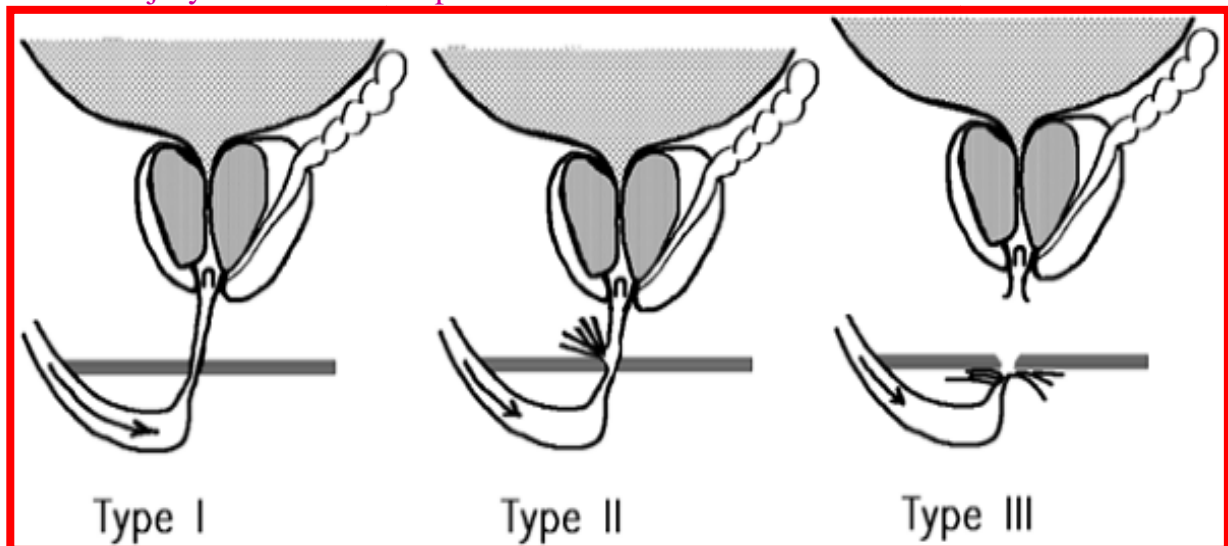
Dr. Hamdan Al-Hazmi

suprapubic catheter

- ❖ Penetrating Anterior Urethral Injuries
 - ✓ *generally managed by surgical debridement and repair*

Posterior urethral injuries:

- Great majority of posterior urethral injuries occur in association with pelvic fractures
- 10% to 20% have an associated bladder rupture
- **Signs:**
 - ❖ Blood at the meatus, gross hematuria, and perineal or scrotal bruising.
 - ❖ High-riding prostate
- **Classification** of posterior urethral injuries:
 - ❖ type I:(rare)
 - ❖ *stretch injury with intact urethra*
 - ❖ type II : (25%)
 - ❖ *partial tear but some continuity remains*)
 - ❖ type III:(75%)
 - ❖ *complete tear with no evidence of continuity*
 - ❖ In women, partial rupture at the anterior position is the most common urethral injury associated with pelvic fracture.



- **Management:**
 - ❖ Stretch injury (type I) and incomplete urethral tears (type II) are best treated by stenting with a urethral catheter.

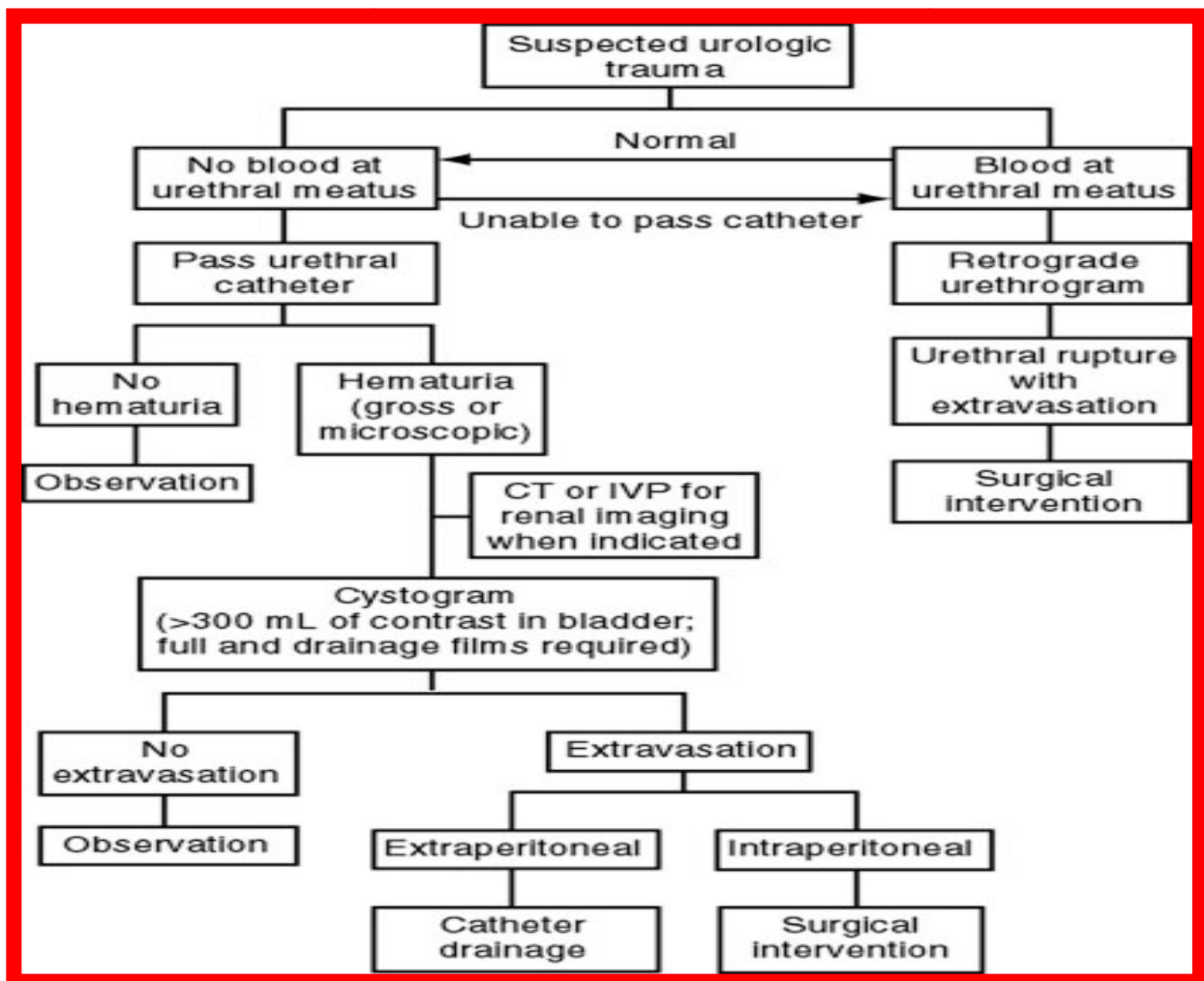


UROLOGICAL EMERGENCY

Dr. Hamdan Al-Hazmi

❖ Type III

- ✓ Patient is at varying risk of urethral stricture, urinary incontinence, and erectile dysfunction (ED)
- ✓ Initial management with suprapubic cystostomy and attempting primary repair at 7 to 10 days after injury.



Done By Surgery Queens
Done By Surgery Queens