2) Bladder Rupture - Dr. Ali Kamal

Rupture of the bladder

- This may be Intraperitoneal (20%) or extra peritoneal (80%).
- Intraperitoneal rupture may be secondary to a blow, kick or fall on a fully distended bladder and it is more common in the male than in the female, and usually follows a bout of fluid drinking. More rarely, it is due to surgical damage.
- Extra peritoneal rupture is usually caused by a fractured pelvis or is secondary to major trauma or surgical damage.

Intraperitoneal rupture

1. Sudden, agonizing pain in the hypogastrium, often accompanied by syncope
2. The shock later subsides and the abdomen commences to distend
3. No desire to micturate
4. Varying degrees of abdominal rigidity and abdominal distension are present on examination
5. No suprapubic dullness, but there is tenderness
6. There may be shifting dullness
7. If the urine is sterile, symptoms and signs of peritonitis are delayed

Extra peritoneal rupture

- In many cases of pelvic trauma, this is difficult to distinguish from rupture of the membranous urethra.

Confirming a suspected diagnosis of intraperitoneal rupture

1. Plain abdominal X-ray in the erect position may show the ground-glass appearance of fluid in the lower abdomen
2. Intravenous urography (IVU) may confirm a leak from the bladder
3. A peritoneal tap may be of value if facilities for radiological examination are not available
4. Retrograde Cystography (RCG). If doubt still exists and if there is no sign of fracture then retrograde cystography can be performed safely. With careful asepsis a small [14 French gauge (FG)] catheter is passed. Usually some blood-stained urine will drain, contrast injected

Treatment of Intraperitoneal rupture

- The mainstay is to provide adequate drainage of the bladder. The standard treatment is to perform a lower midline laparotomy, urine is removed by suction, after which the patient is placed in Trendelenberg’s position. The edges of the rent, which are usually situated in the posterior part of the dome of the bladder, are trimmed and sutured with two layers of interrupted catgut stitches, and the operation completed by placement of a suprapubic and urethral catheter.

Wounding of the bladder during operation

Operations in which the bladder is liable to be injured are:

1. Inguinal or femoral herniotomy;
2. Hysterectomy by either the abdominal or vaginal route;
3. Excision of the rectum.
4. TURBT
5. TURP
When accidental perforation of the bladder occurs during endoscopic resection of a bladder tumour, or the prostatic capsule is perforated during transurethral prostatectomy, the perforation is usually extraperitoneal. When the accident is recognised at the time, drainage of the bladder with a large urethral catheter and the administration of antibiotics usually suffice. If, however, a mass of extravasated fluid is palpable per abdomen it is best to place a small drain into the extra-peritoneal perivesical space through a small stab incision. A laparotomy will usually be required if an intraperitoneal perforation is caused by transurethral resection of a large bladder tumour on the dome of the bladder.

**Retention of urine**

- Retention of urine is either acute or chronic, the latter leading ultimately to retention-with-overflow

**Acute retention**

*The most frequent causes of acute retention;*

**In the male:**
1. Bladder outlet obstruction
2. Urethral stricture
3. Postoperative

**In the female:**
1. Retroverted gravid uterus
2. Multiple sclerosis

**In the male child:**
1. Meatal ulcer with scabbing

**Other causes:**
1. Spinal anaesthesia
2. Acute urethritis or prostatitis
3. Blood clot in the bladder (clot retention)
4. Urethral calculus
5. Rupture of the urethra
6. Phimosis
7. Neurogenic (injury or disease of the spinal cord)
8. Smooth muscle cell dysfunction associated with ageing
9. Faecal impaction
10. Anal pain (haemorrhoidectomy)
11. Intensive postoperative analgesic treatment
12. Certain drugs antihistamine, Anticholinergic and tricyclic antidepressants

**Clinical features**

Clinical features of acute retention urine

1. No urine passed for several hours
2. The bladder may be visible and is tender to palpation and dull to percussion
3. Painful.
Treatment

A. In most patients, the correct treatment is to pass a fine urethral catheter (14 FG — French guage is defined as the circumference in millimeters) and to arrange further urological management.
B. Suprapubic punctures.
C. Urethral instrumentation.

Chronic retention

1. Painless
2. Upper tract dilatation.
3. Those with high serum creatinine are at risk of developing a (post-obstructive diuresis) following catheterization and may need careful monitoring with replacement of inappropriate urine losses by intravenous saline; they are also at risk of haematuria as the previously distended urinary tract suddenly shrinks.

Retention with overflow

- In this condition the patient has no control of his or her urine, small amounts passing involuntarily from time to time from a distended bladder. It may follow a neglected acute retention or chronic retention.
- Retention with overflow is referred to also under ‘OVERFLOW INCONTINENCE’ and ‘prostatic enlargement’. The general principles which govern the treatment of this condition are similar to those of acute retention.