RETROPERITONEAL INJURIES - UROLOGICAL

PIKULA RADEK

Renal Trauma

- Causes

Penetrating injuries	Blunt trauma
20%	80%
Gun shot	Car accident
stab	FFH

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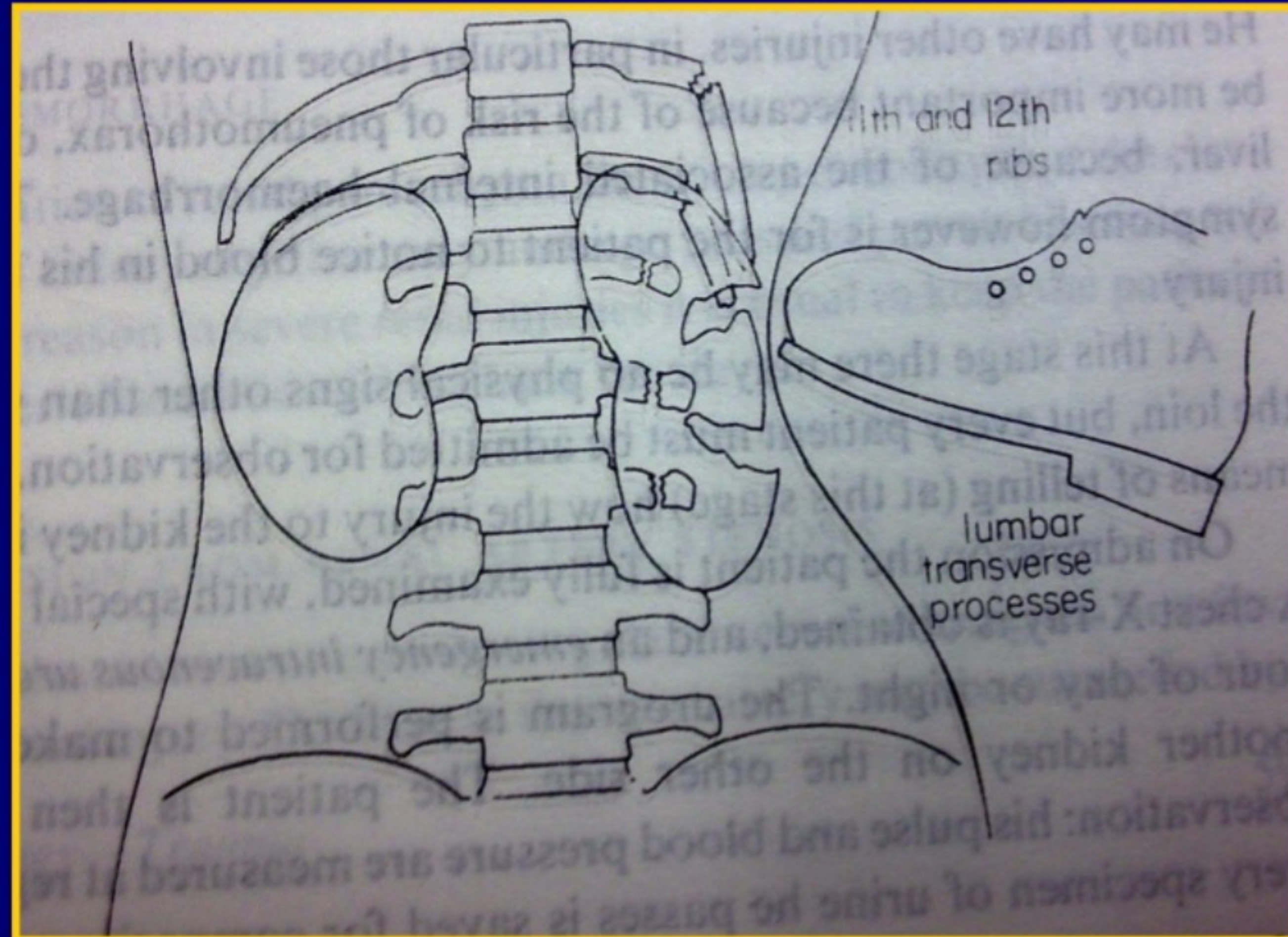
Blunt trauma



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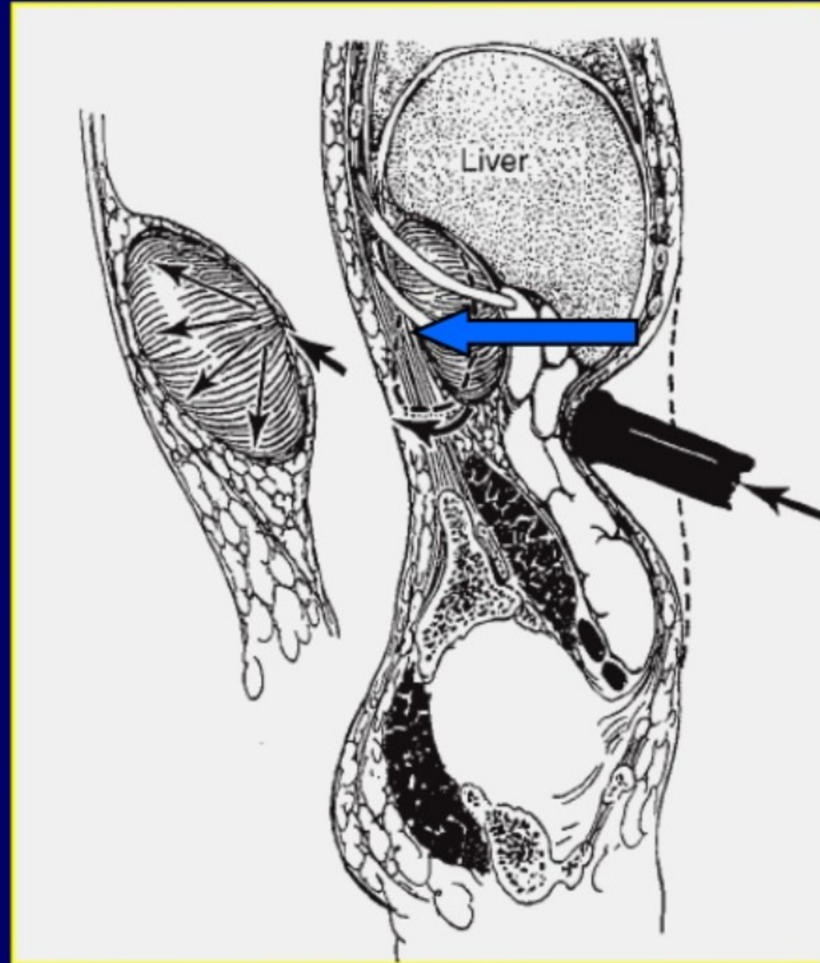
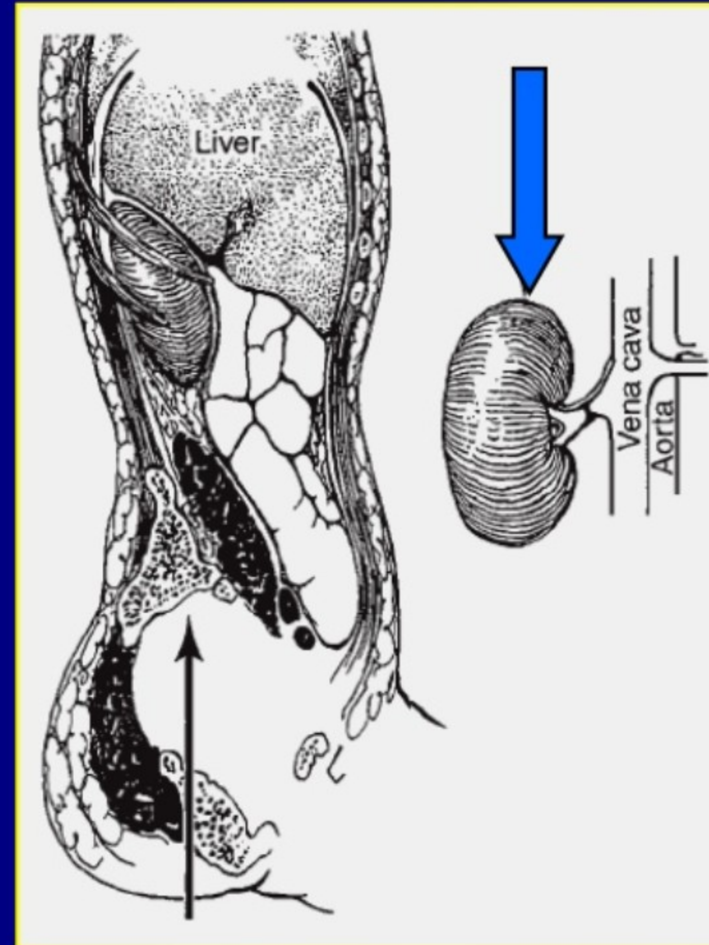
Direct blow to abdomen

FFH





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Clinical Features

1- History of trauma
2-Shock
3-Skin bruises
4- Hematuria : may be *absent* *in(10 – 25 %)* :
    * lesion not communicating with the pelvis
    * avulsion of the pedicle or P.U.J
    * obstruction of the ureter by clot

Grades of renal injury

Organ Injury Scaling Committee scale

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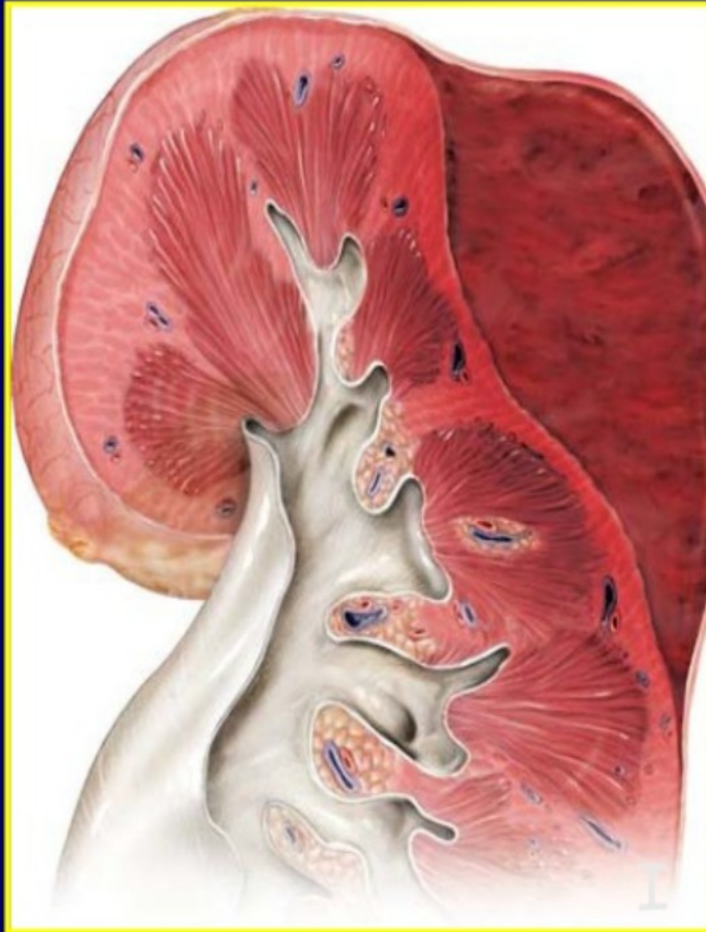
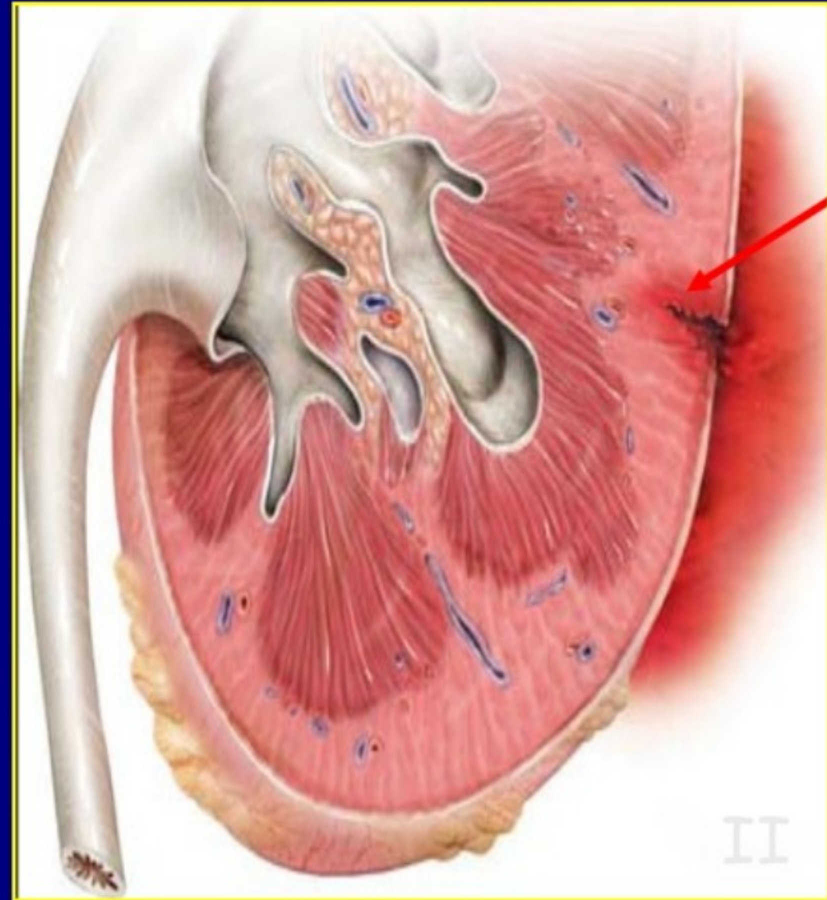
A. Minor injuries

Subcapsular hematoma



lacerations < 1 cm



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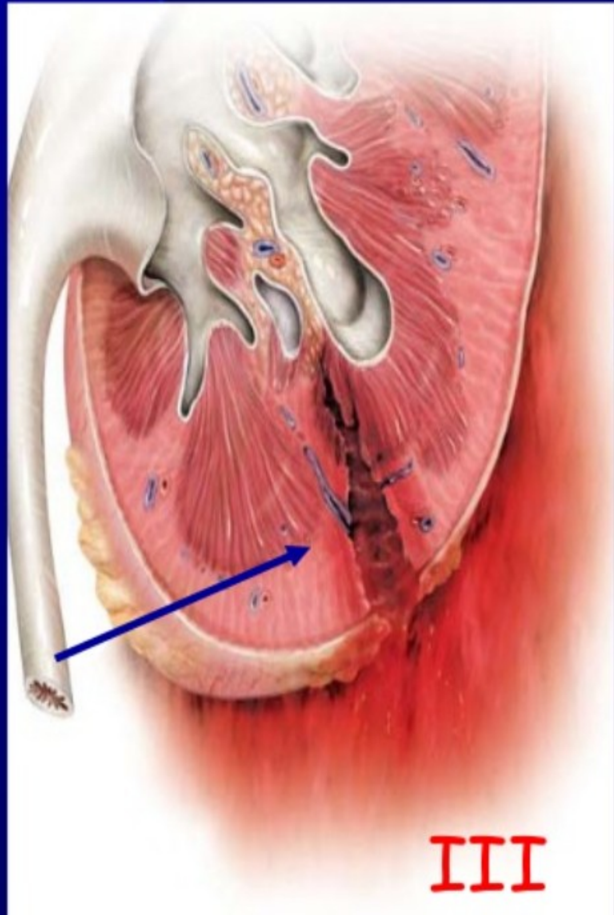
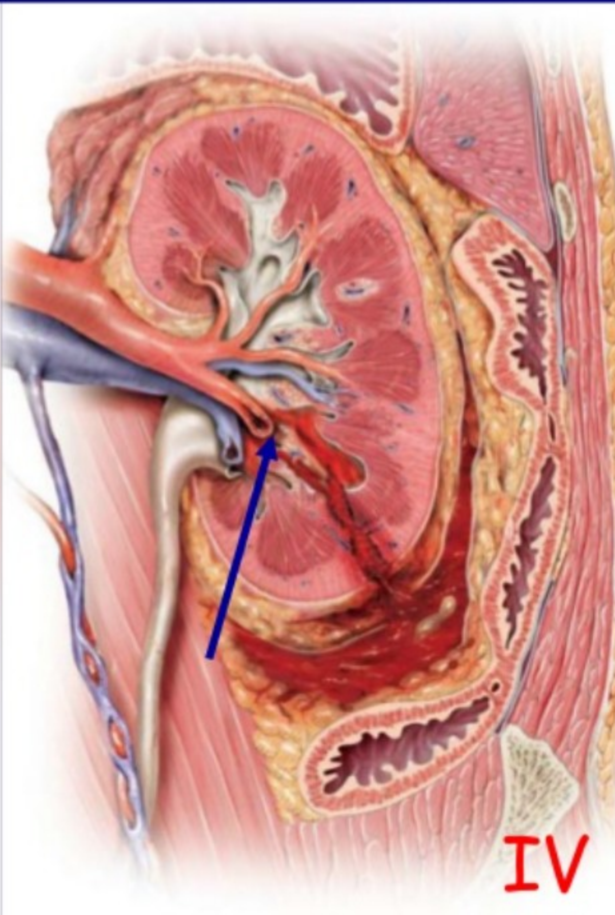
B. Major injuries

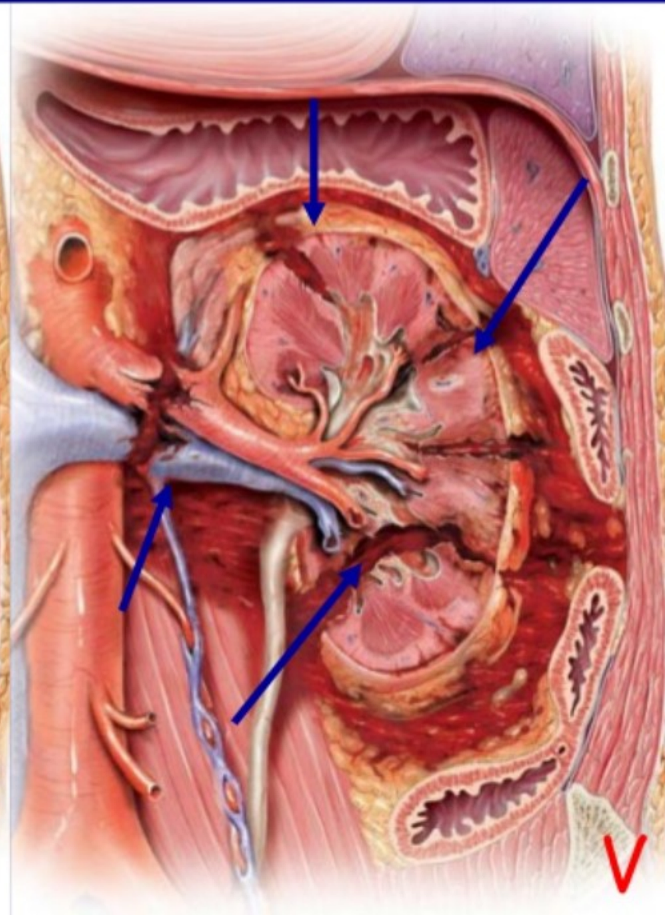
lacerations > 1 cm

Communicate ē Collecting S.

shuttered kidney







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Complications

Early

- Delayed bleeding
- Perinephric abscess
- Urinary extravasation

Late

- Hydronephrosis
- Hypertension
- A-V fistula with stab inj.
- Renal atrophy

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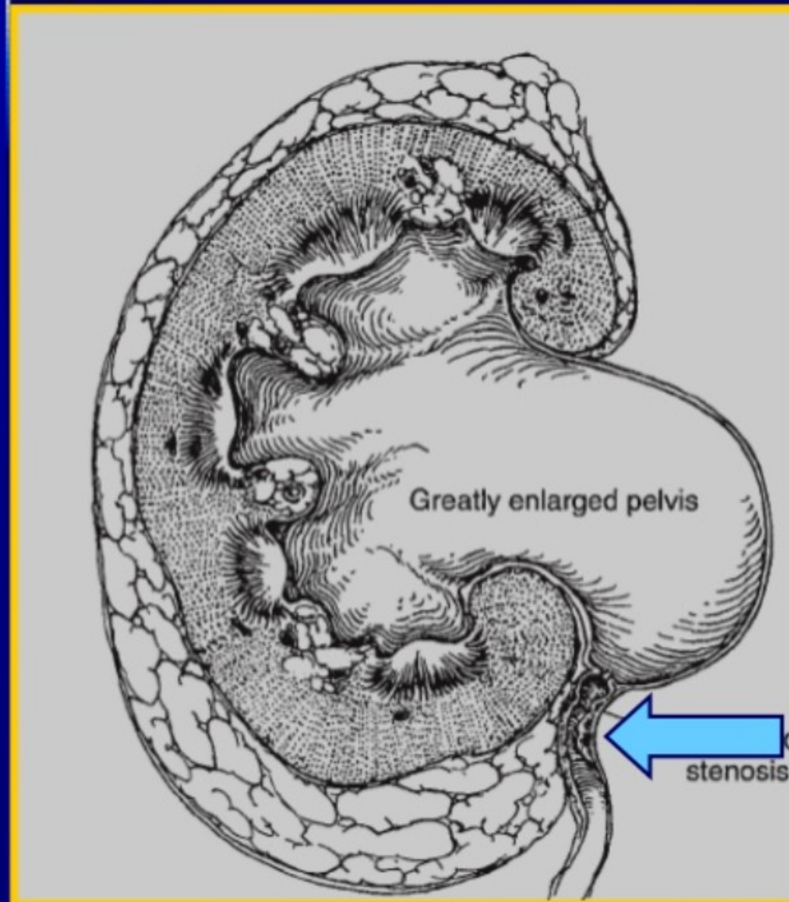
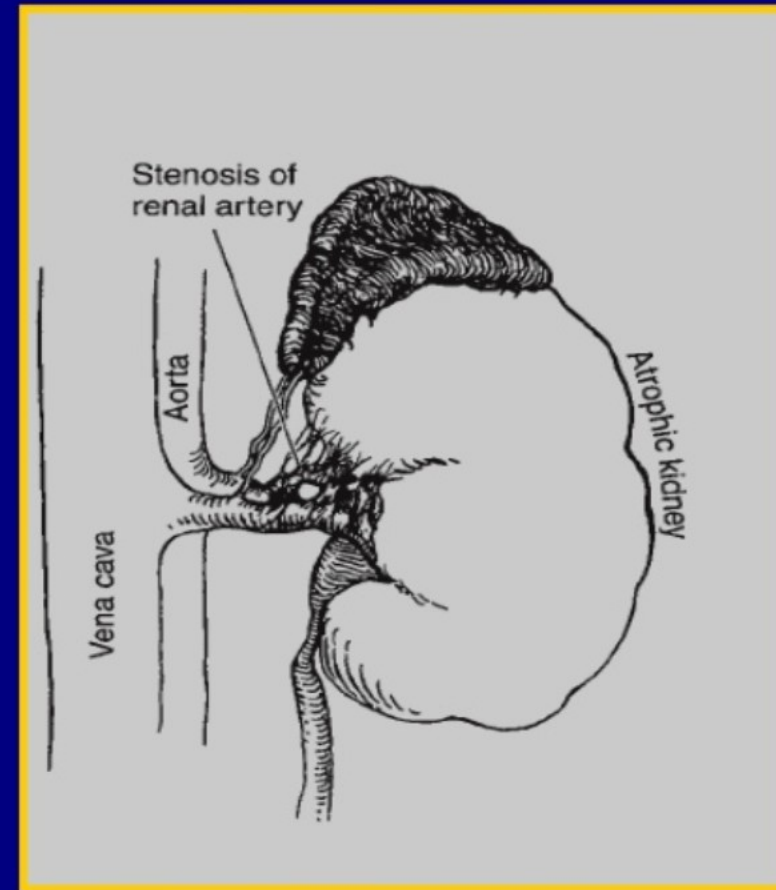
Late Complications



Ureteropelvic stenosis



Atrophy of kidney

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Management

- Gives priority to the airway , breathing, and circulation in that order (ABC)
- Secondary survey, an examination from head to toe.

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Diagnosis

- Victims of polytrauma often suffer devastating injuries that take priority over possible renal injuries
- The presence of loin pain bruising, lower rib fractures, and haematuria are suggestive of renal trauma.

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Investigations

- IVU

**Normal ⟶ observation

**Abnormal ⟶ DO more investigations

- U.S : follow up of peri-renal hematoma & extravasation

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- C.T scan (ideal diagnosis)
  - Accurate diagnosis
  - Site & depth of laceration (proper staging)
  - Associated injury of abdominal organs

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Stisknutím Esc ukončíte režim na celou obrazovku.

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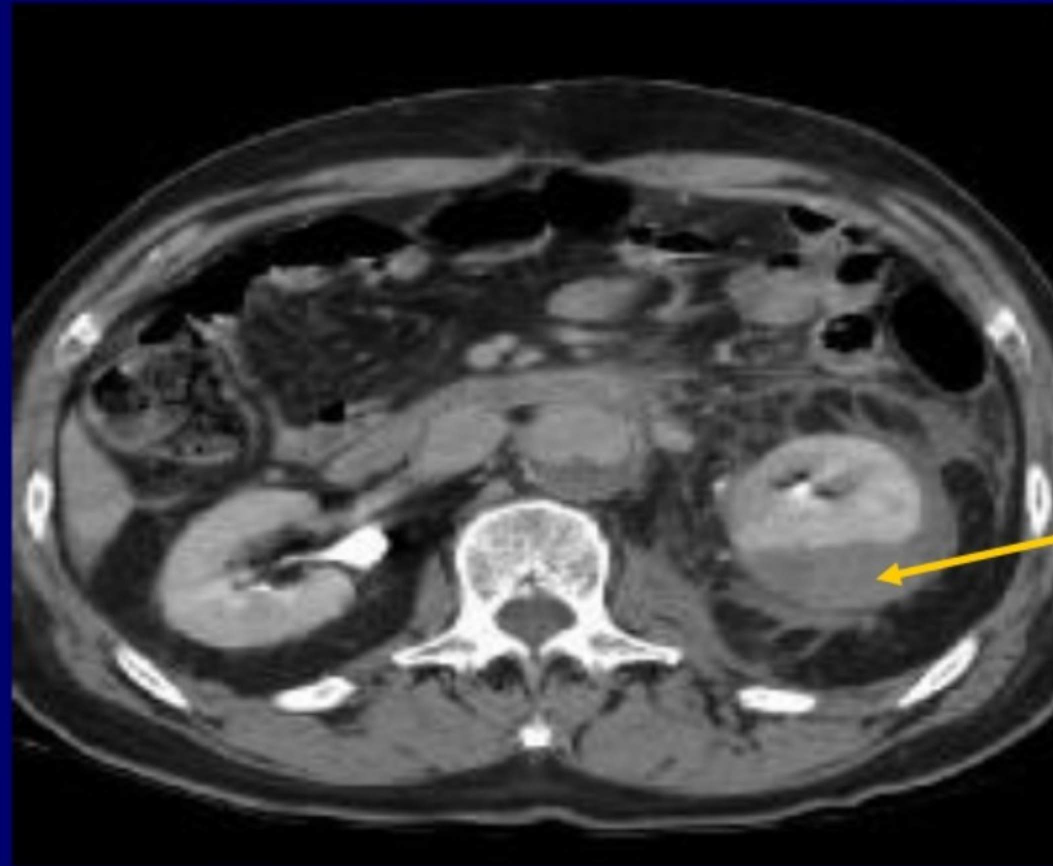
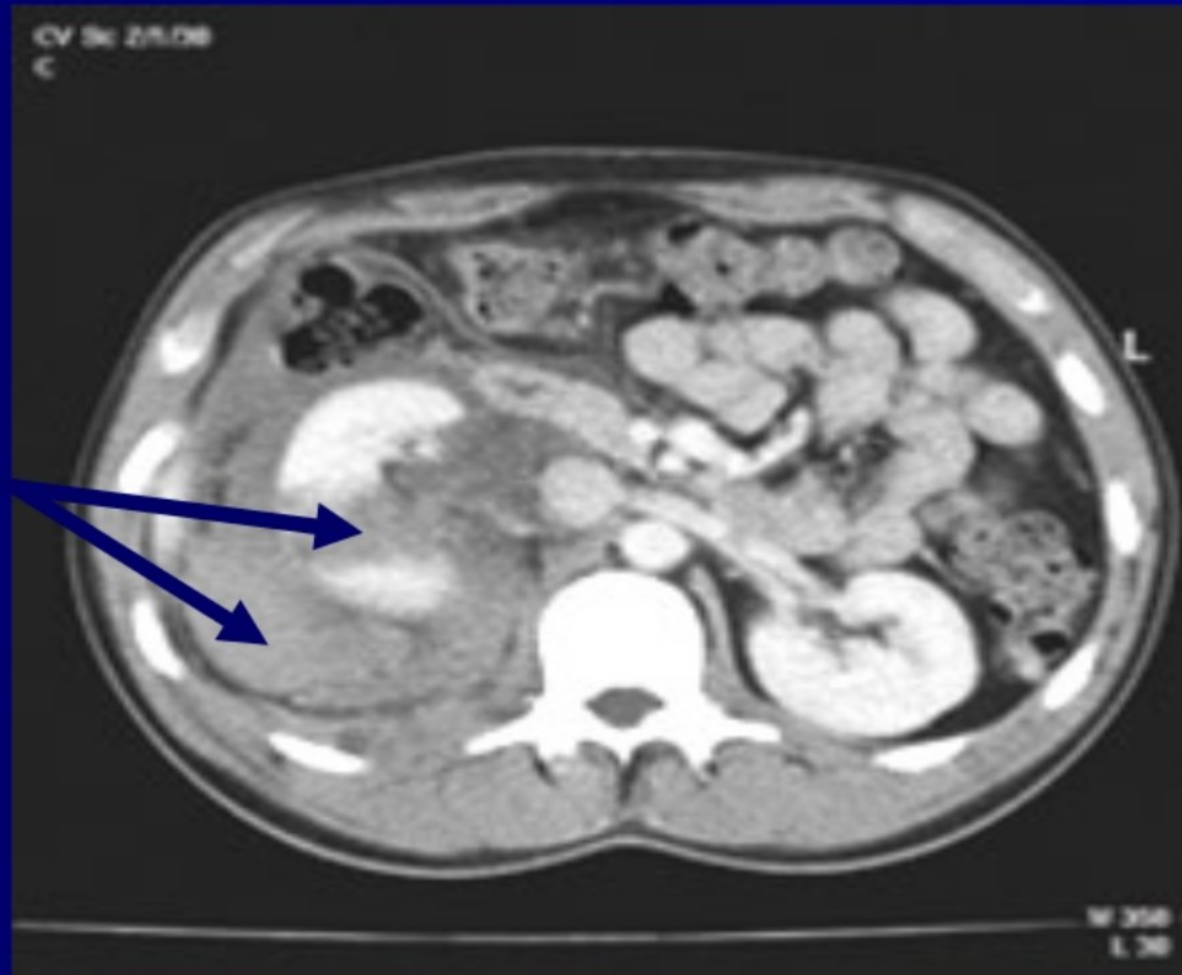
Grade 1 renal injury



subcapsular hematoma

- Rt. Kidney injury +retroperitoneal hematoma



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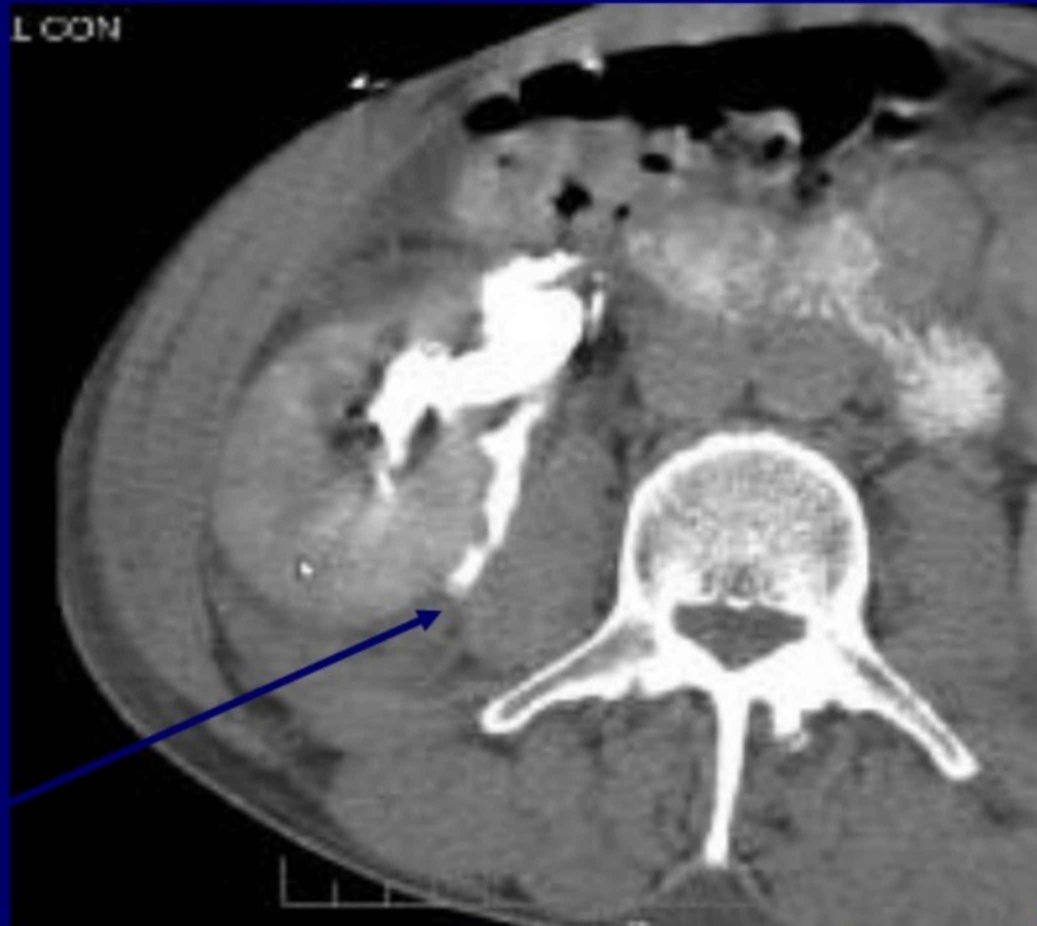
- Grade 5 renal injury.
- Partial PUJ tear and multiple deep lacerations.



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Conservative Treatment

-Bed rest
- IV. fluid
- Analgesics
- Follow up by U.S

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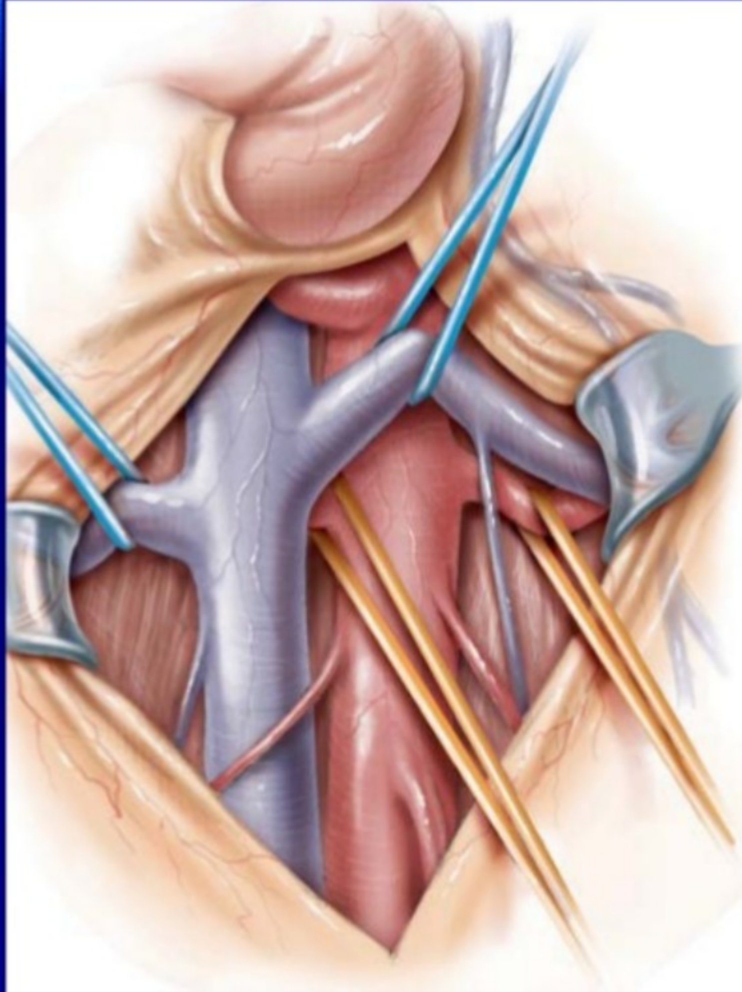
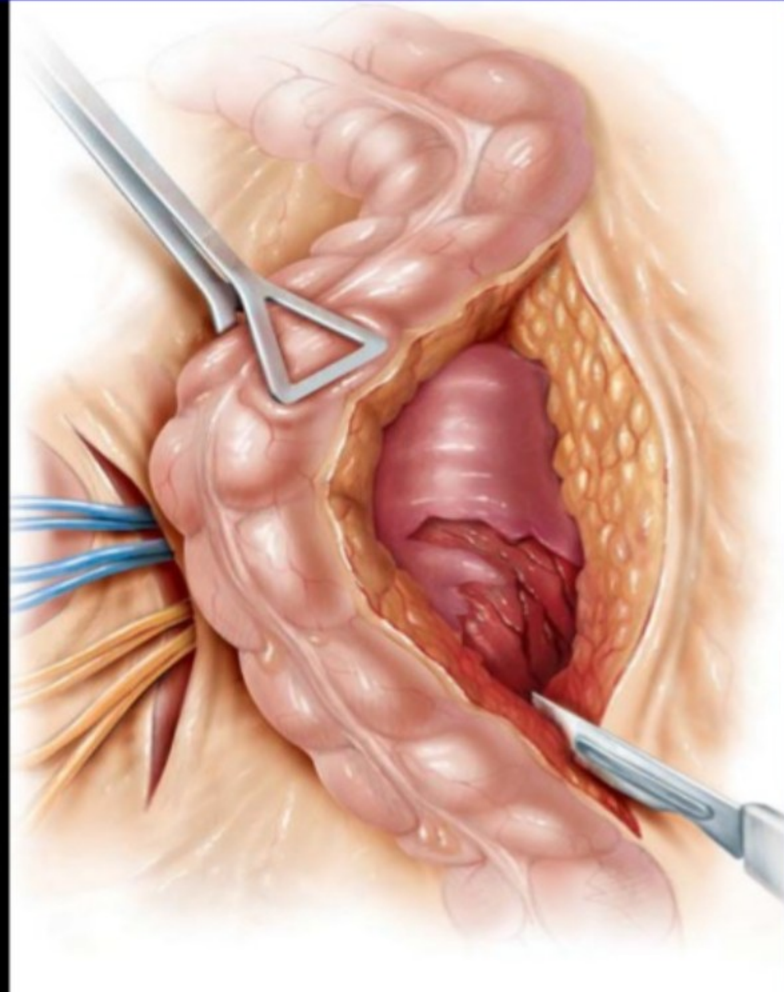
Surgical Explorations





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- Superficial tears.......*suture*
- Deep tear............... *partial nephrectomy*
- Avulsion of pedicle ….. *nephrectomy*

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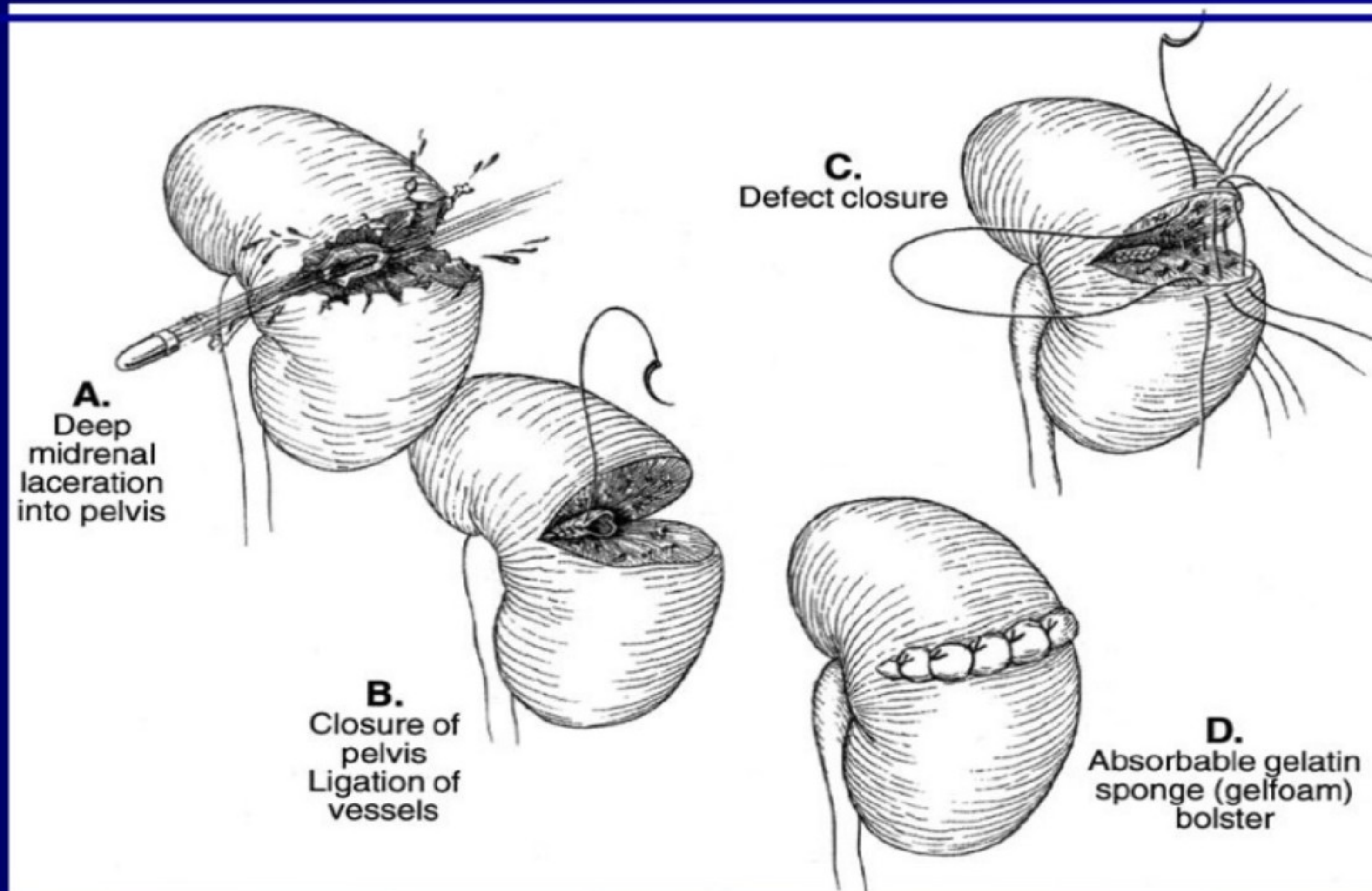
Surgical treatment



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Home messages

1. Renal trauma is usually blunt and minor
2. It is often sustained with polytrauma
3. Most patients are managed conservatively
4. Surgery is rarely indicated but life saving
5. Long term follow-up is needed to check for complications

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Ureteral injuries

Causes:

1. Gun shot
2. Stab wound
3. Fracture spine
4. Avulsion at PUJ
5. Gynecological operations

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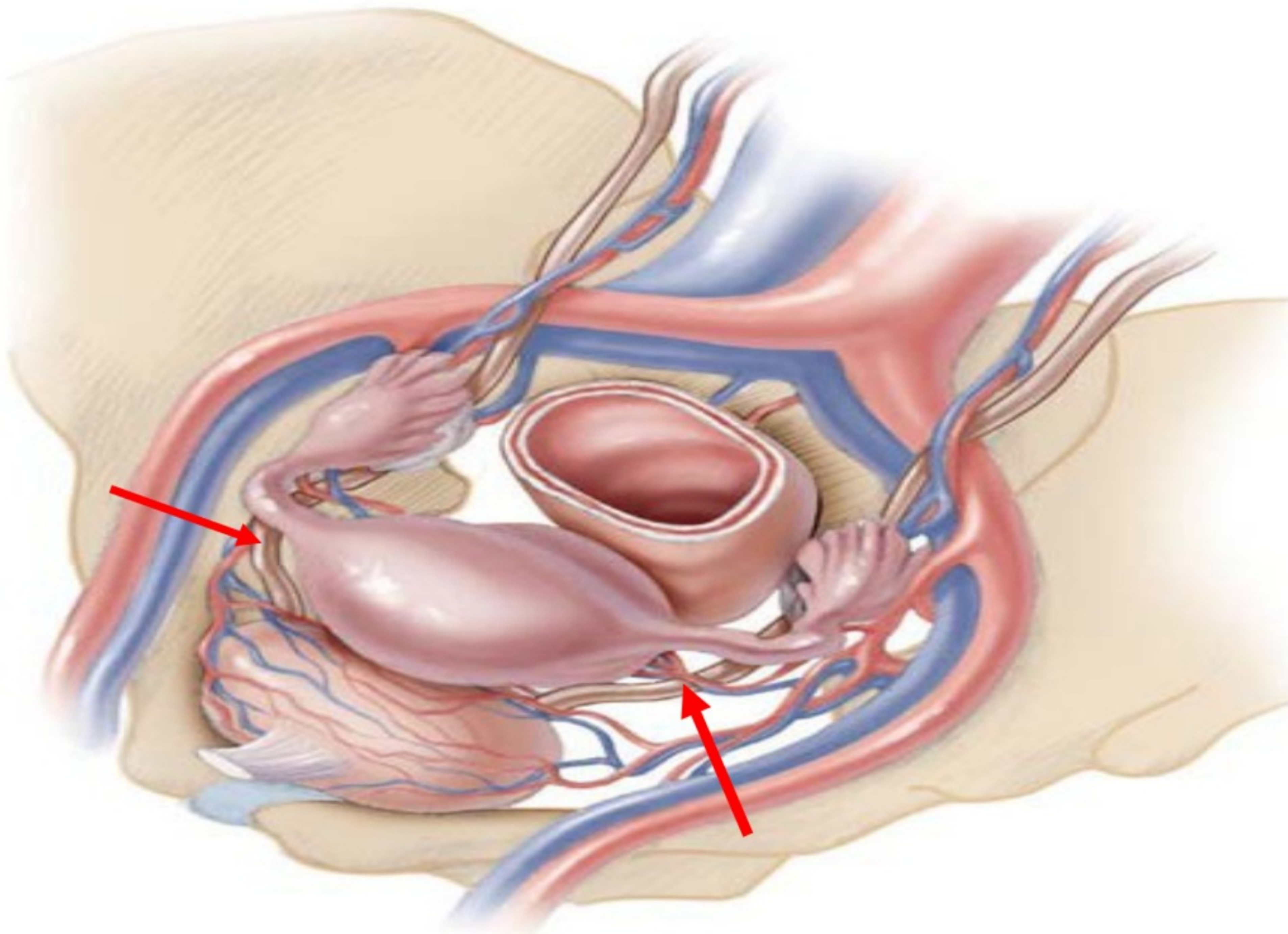

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Investigations

- IVU
- C.T scan
- Retrograde urography
- Antegrade urography

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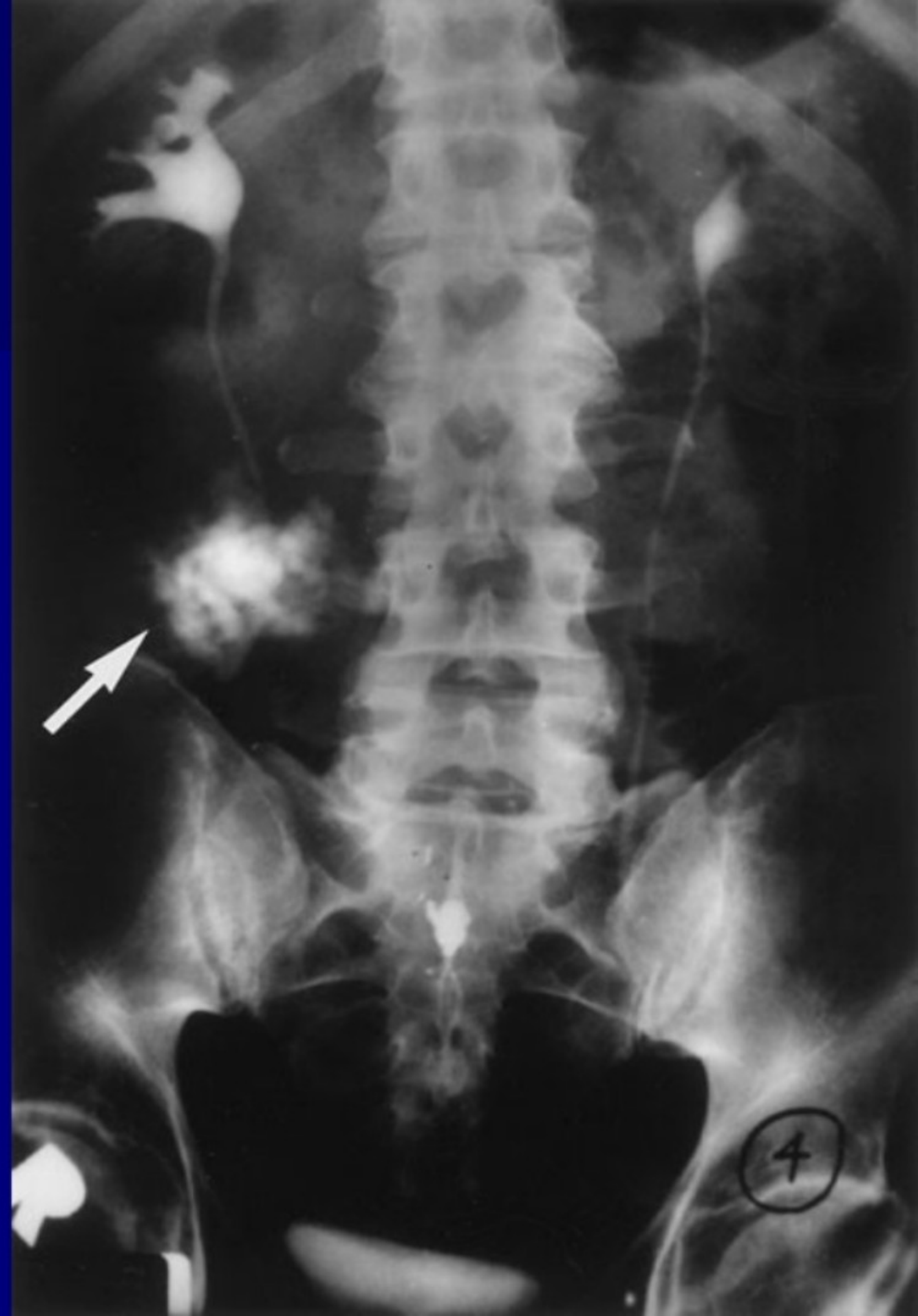
Extravasation Due To Uretral Injury



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Treatment

- Below iliac vein: ureteral reimplantation
- Above iliac vein:

1. End to end anastomosis
2. Transureteroureterostomy
3. Ilial replacement
4. Auto transplantation

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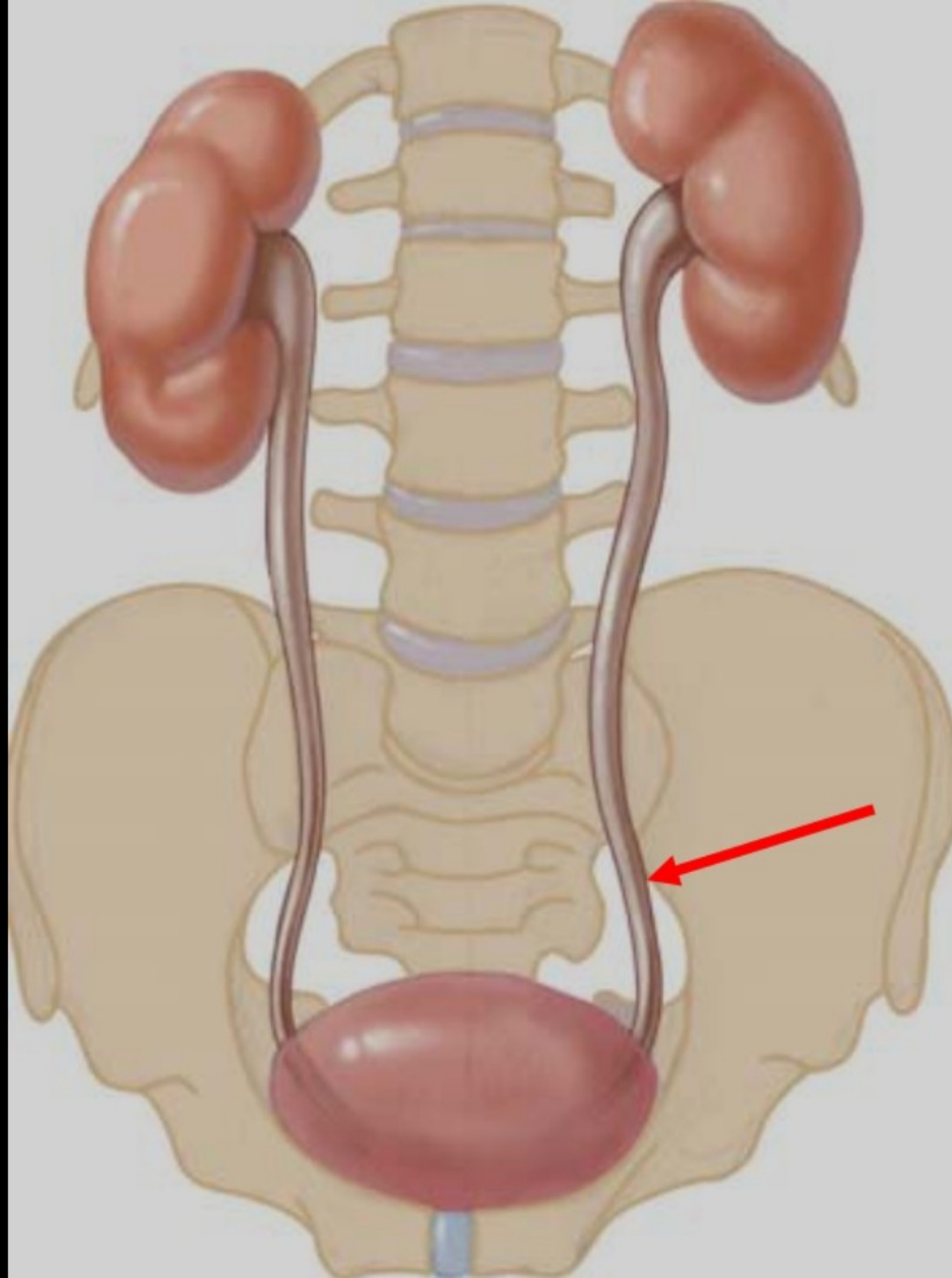

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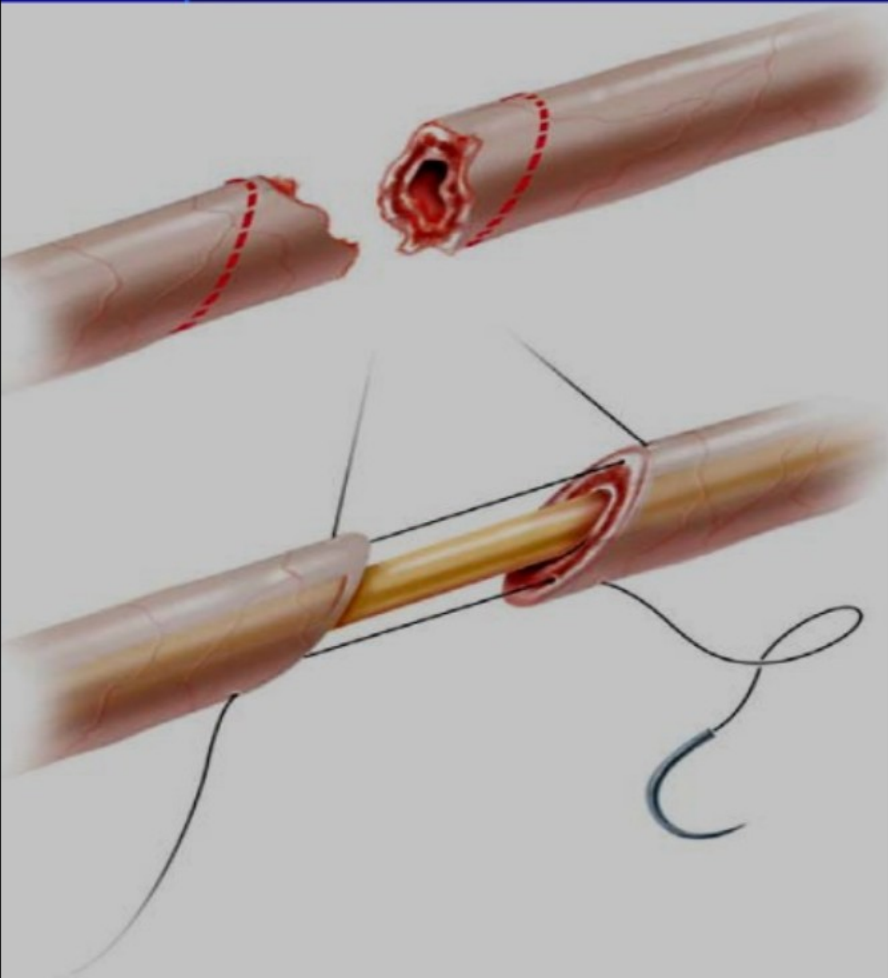
Above the iliac vein

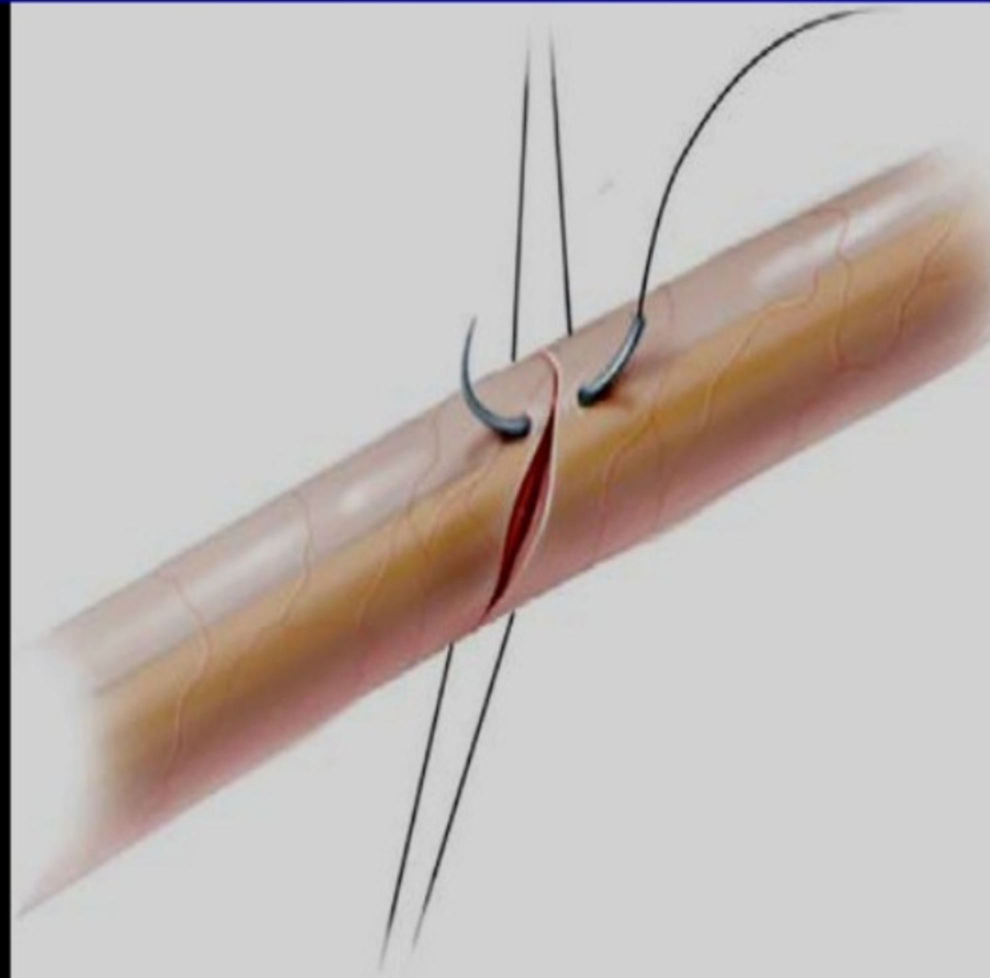
1. direct ureteroureterostomy
2. transureteroureterostomy
3. Ilial replacement
4. autotransplantation

Below the iliac vein

reimplantation

1-End to end anastomosis over JJ stent





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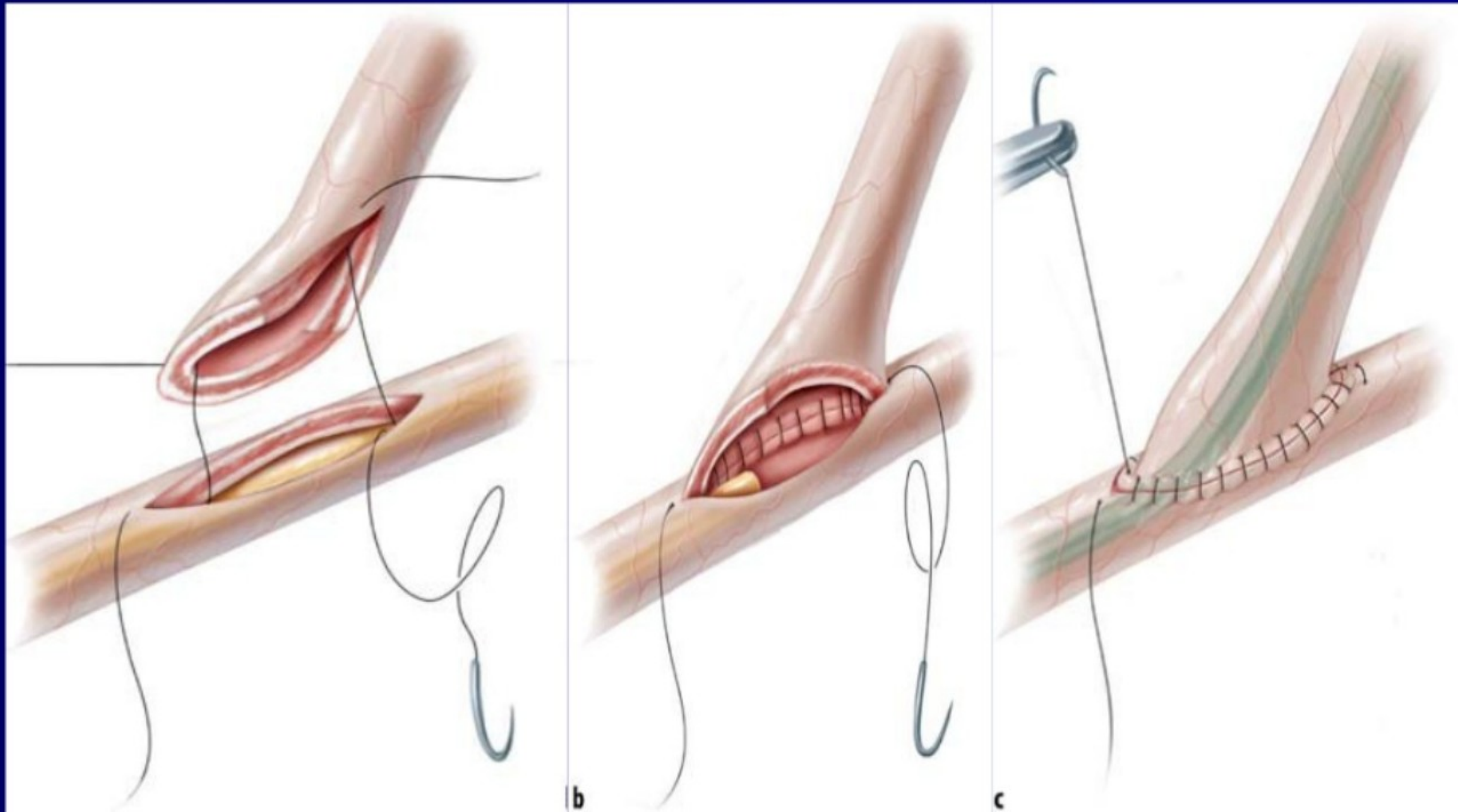
2- Transureteroureterostomy



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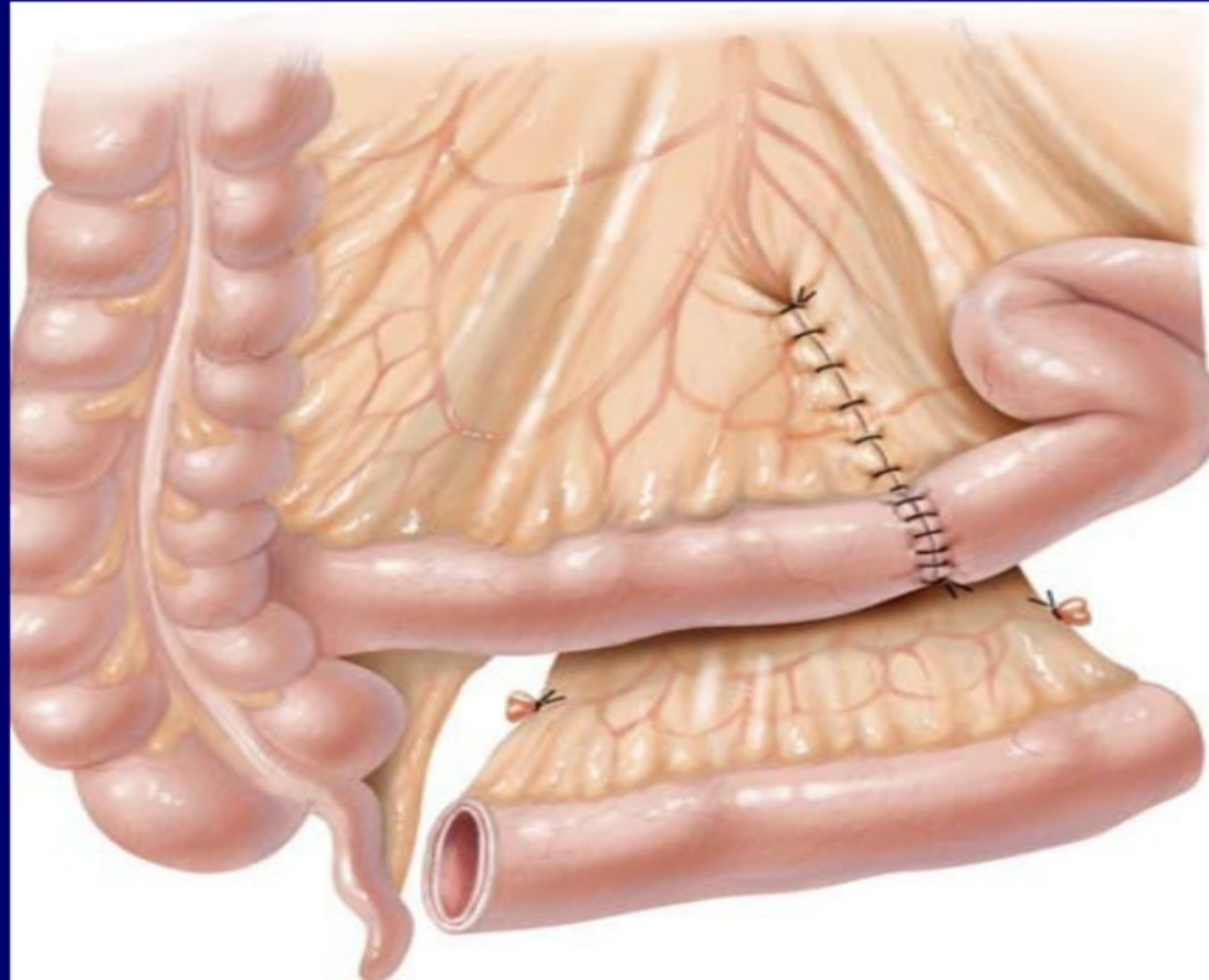
3- Ilial replacement



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4- Auto transplantation

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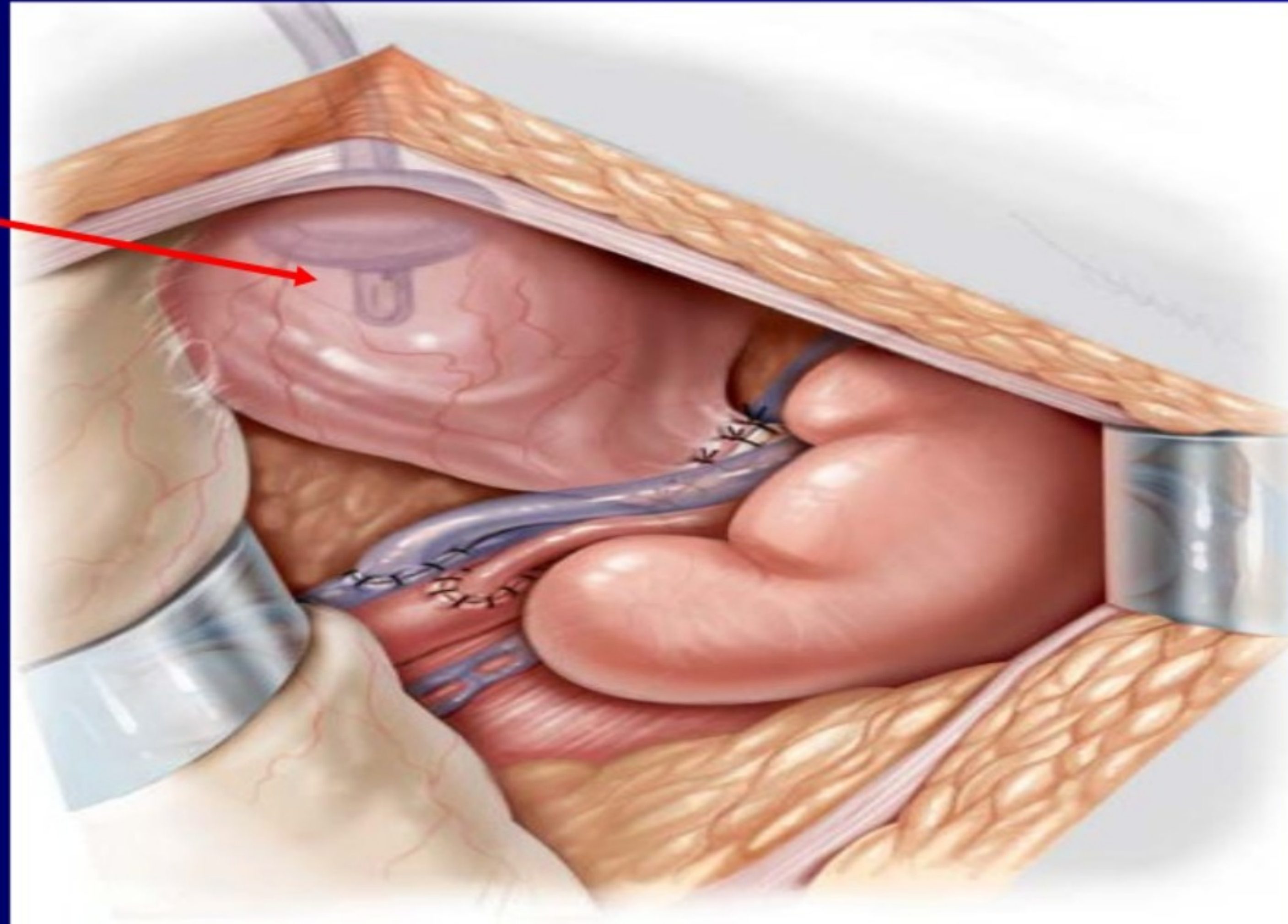
Bladder



Iatrogenic injury

- Up to 1w → exploration of ureter
- After 1 w → PCN. For 3 months & then evaluate

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Bladder injuries/ causes

Penetrating injury

1. Gun shot
2. stab wound
3. Gynecological op.
4. Endoscopy

Blunt injury

1. Blow to the abdomen
2. Fracture pelvis
3. Fall from height

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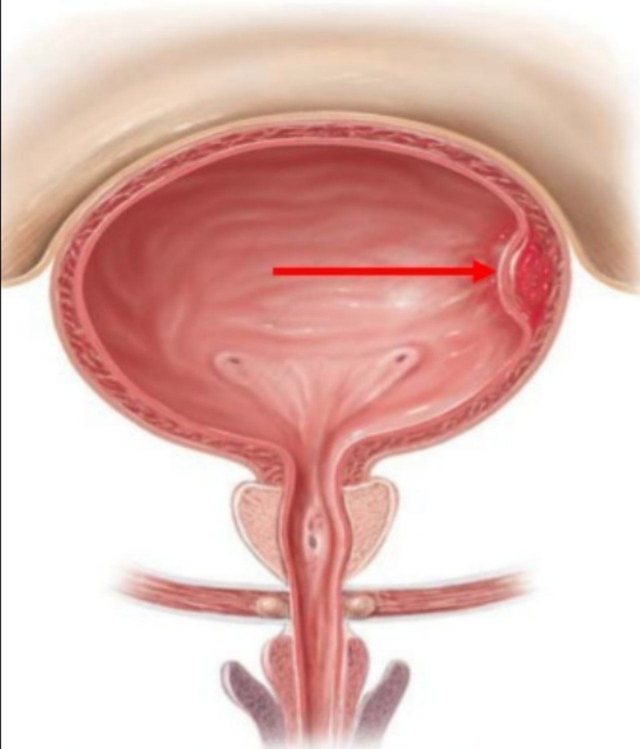

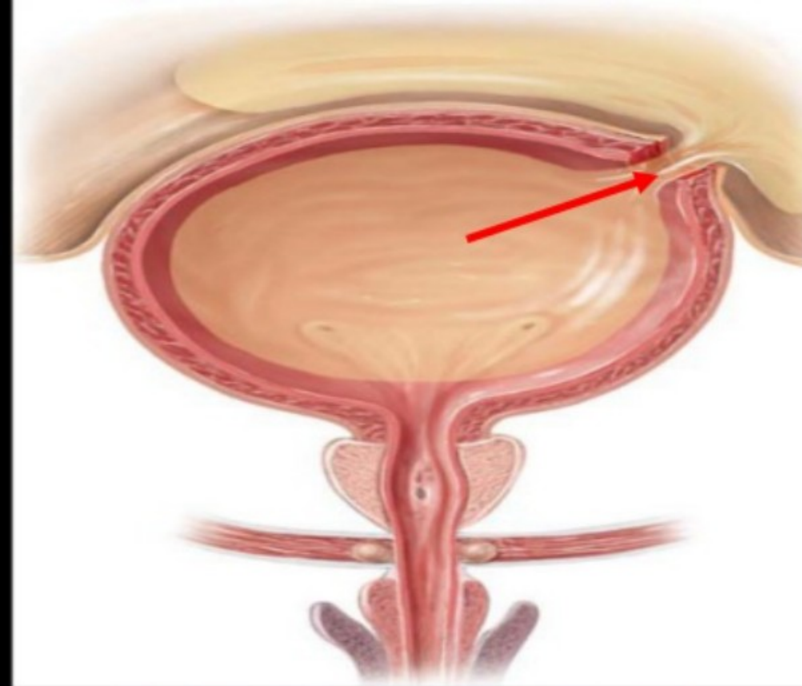

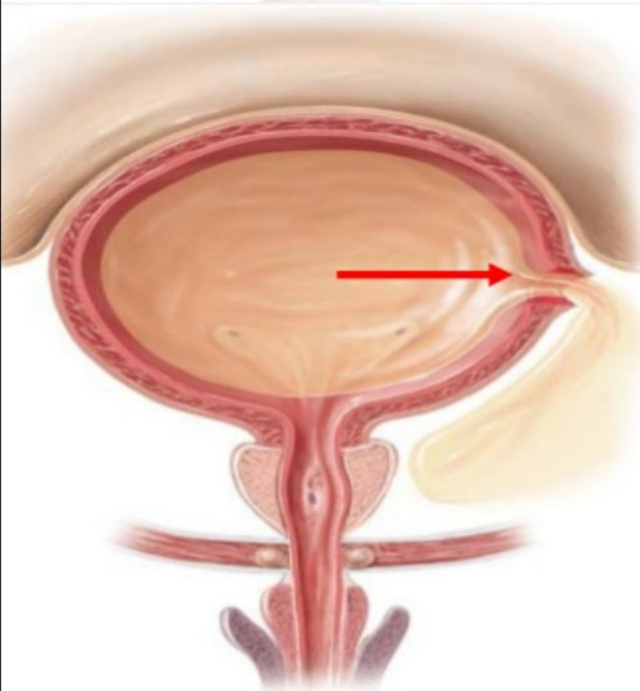

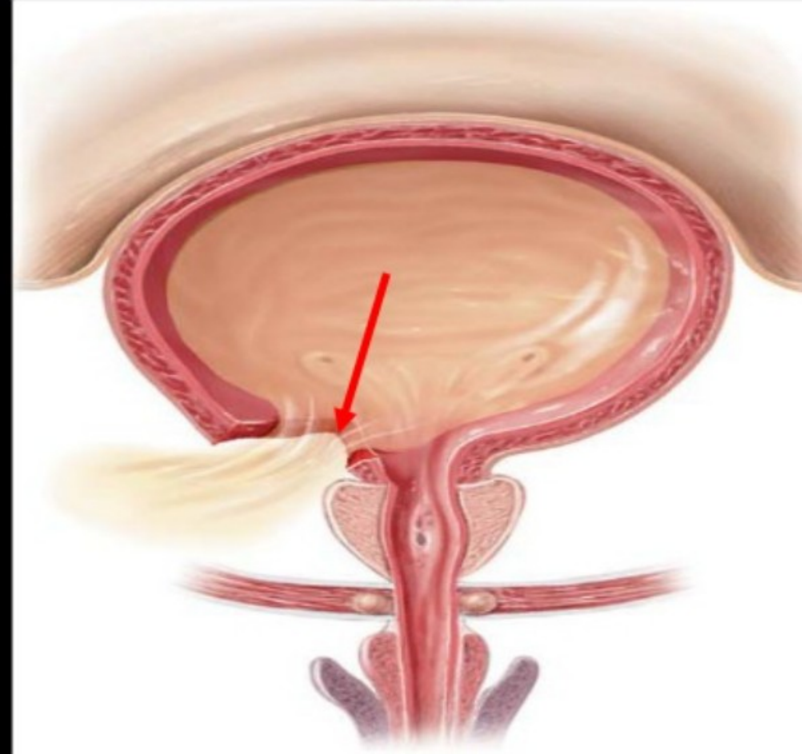

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Classificatio n

1. Intra-peritoneal rupture

- Extra-peritoneal rupture

- Combined intra & extra – peritoneal rupture

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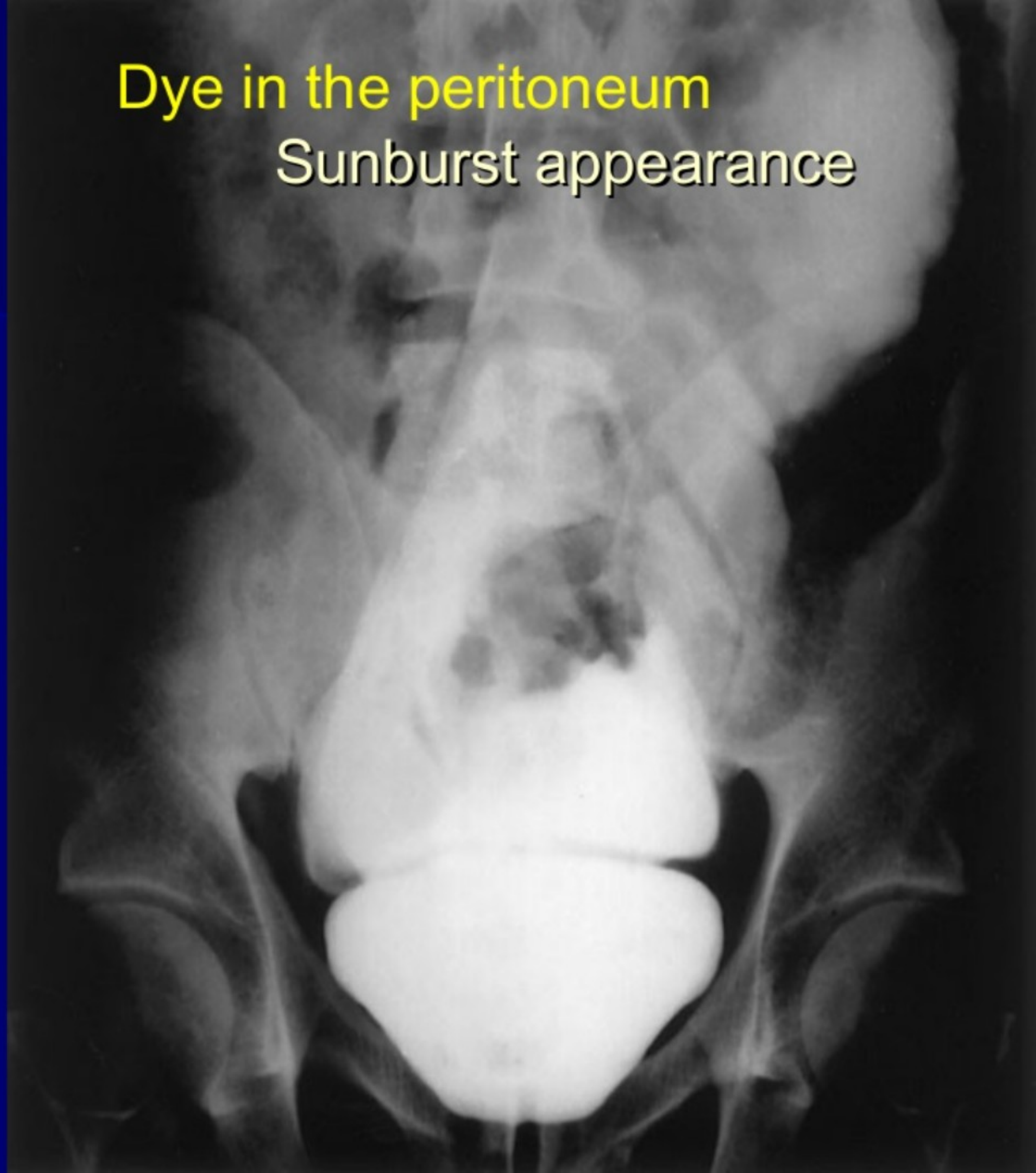
Intra peritoneal rupture



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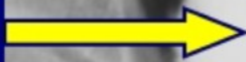
Tear drop deformity

Extraperitoneal rupture

Flame-shaped



Treatment

Intra peritoneal rupture

Exploration & repair To prevent peritonitis

Extraperitoneal rupture

1- minor extravasations: urethral catheter for 10 days

2- major extravasations or bladder neck involvement: exploration and repair

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Urethral injuries

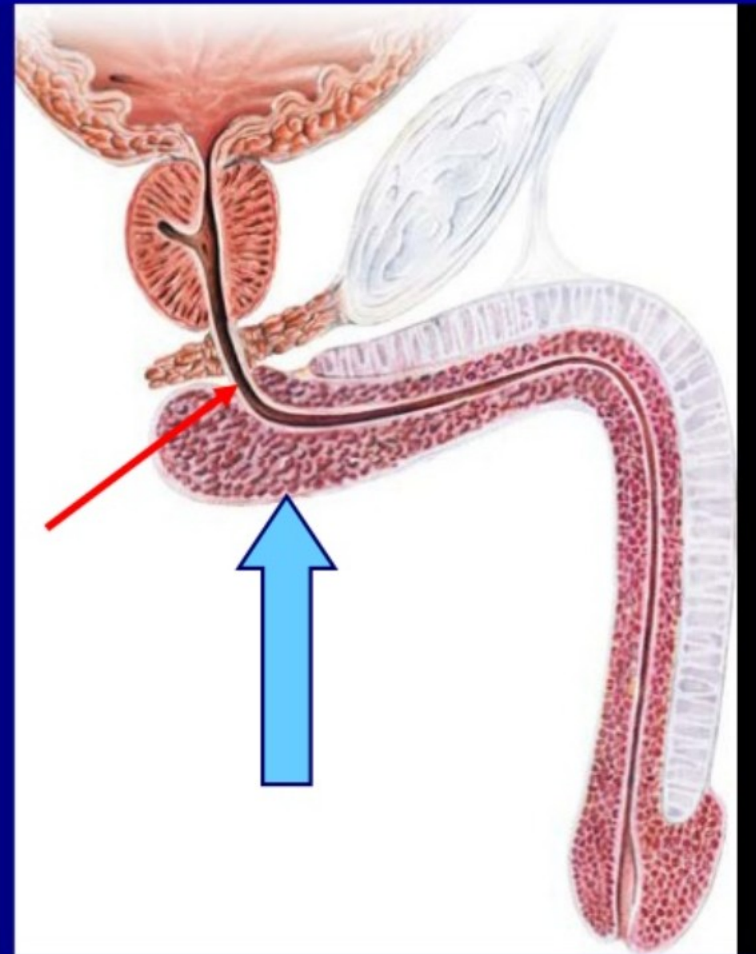
Causes :

- Posterior urethra

1. Fracture pelvis
2. Catheter introduction

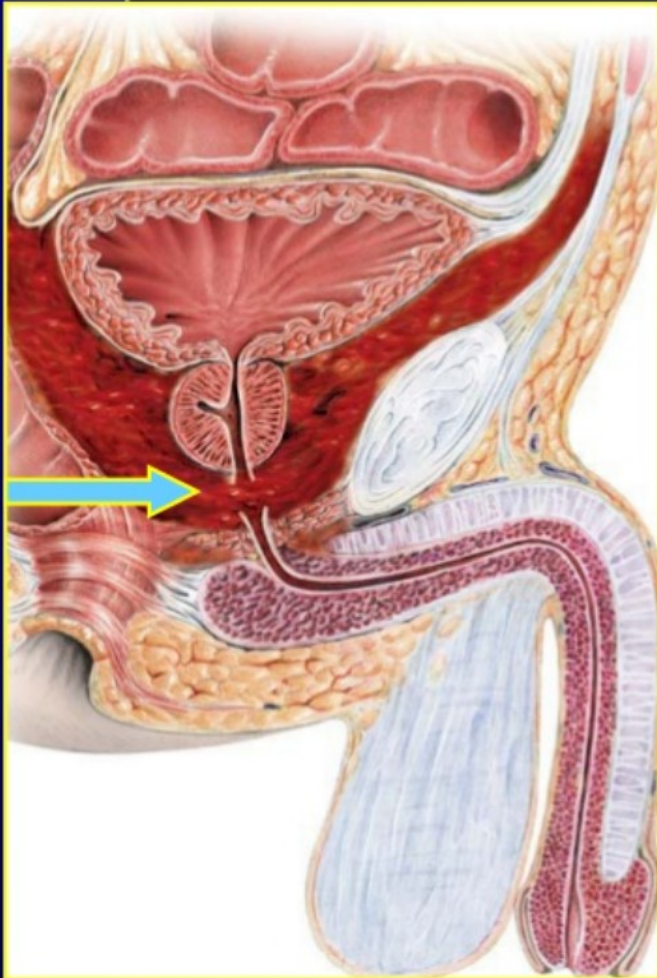
- Anterior urethra

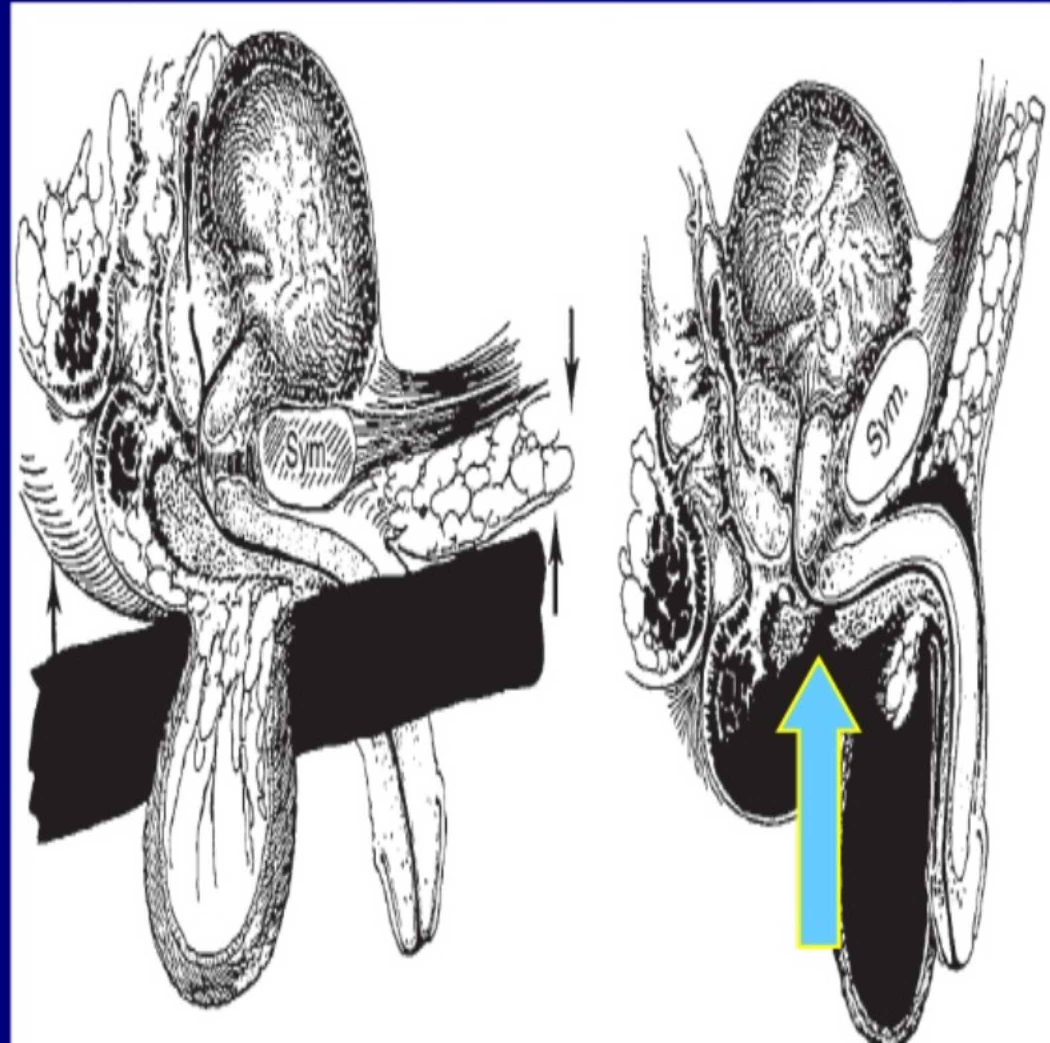
1. Falling astride
2. External trauma



Post urethral inj

Anterior urethral inj.
Falling astride





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Fracture penis may be associated with anterior urethral injury

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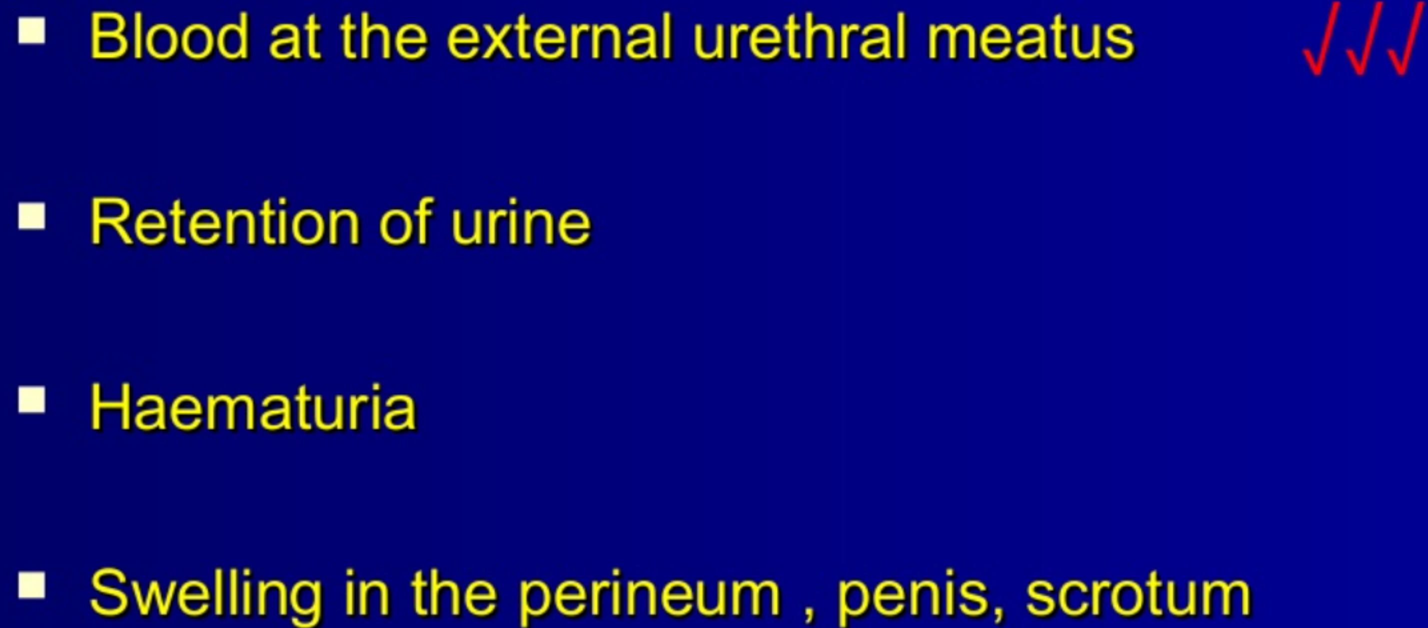
Clinical features



Radiological diagnosis

- No Catheterization *contraindicated*
- KUB. : identify Fr. Pelvis
- Ascending urethrogram

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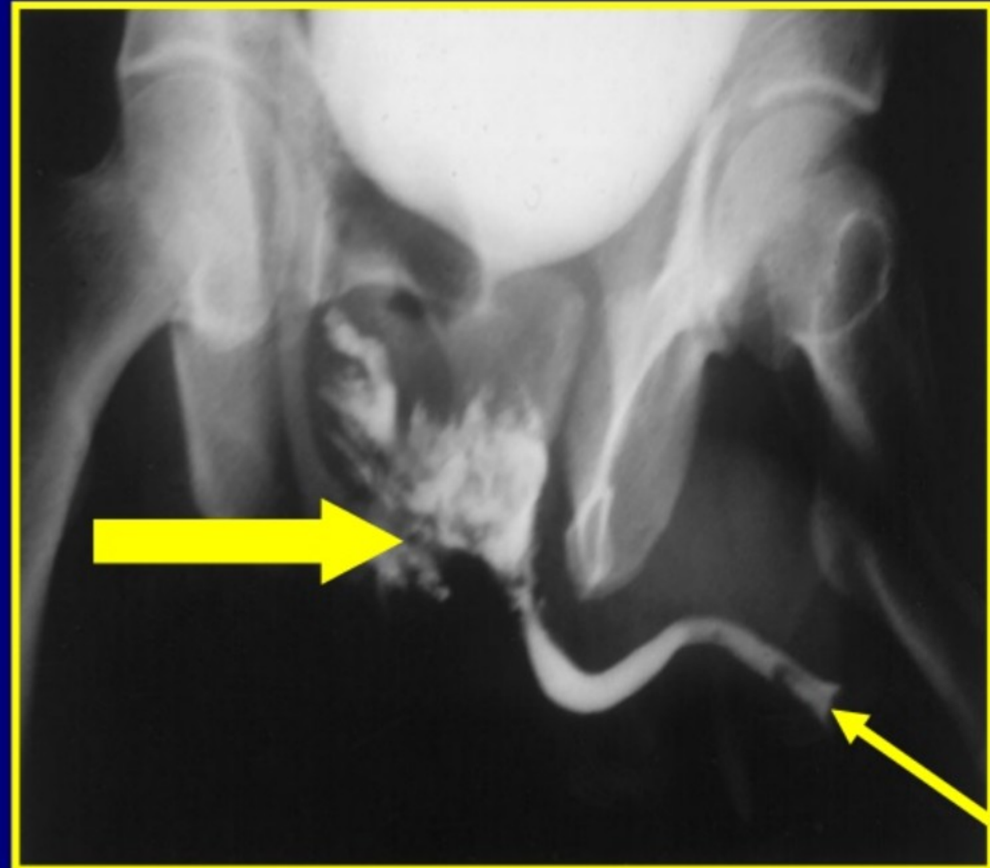
Antegrade & Retrograde cysto-urethrography

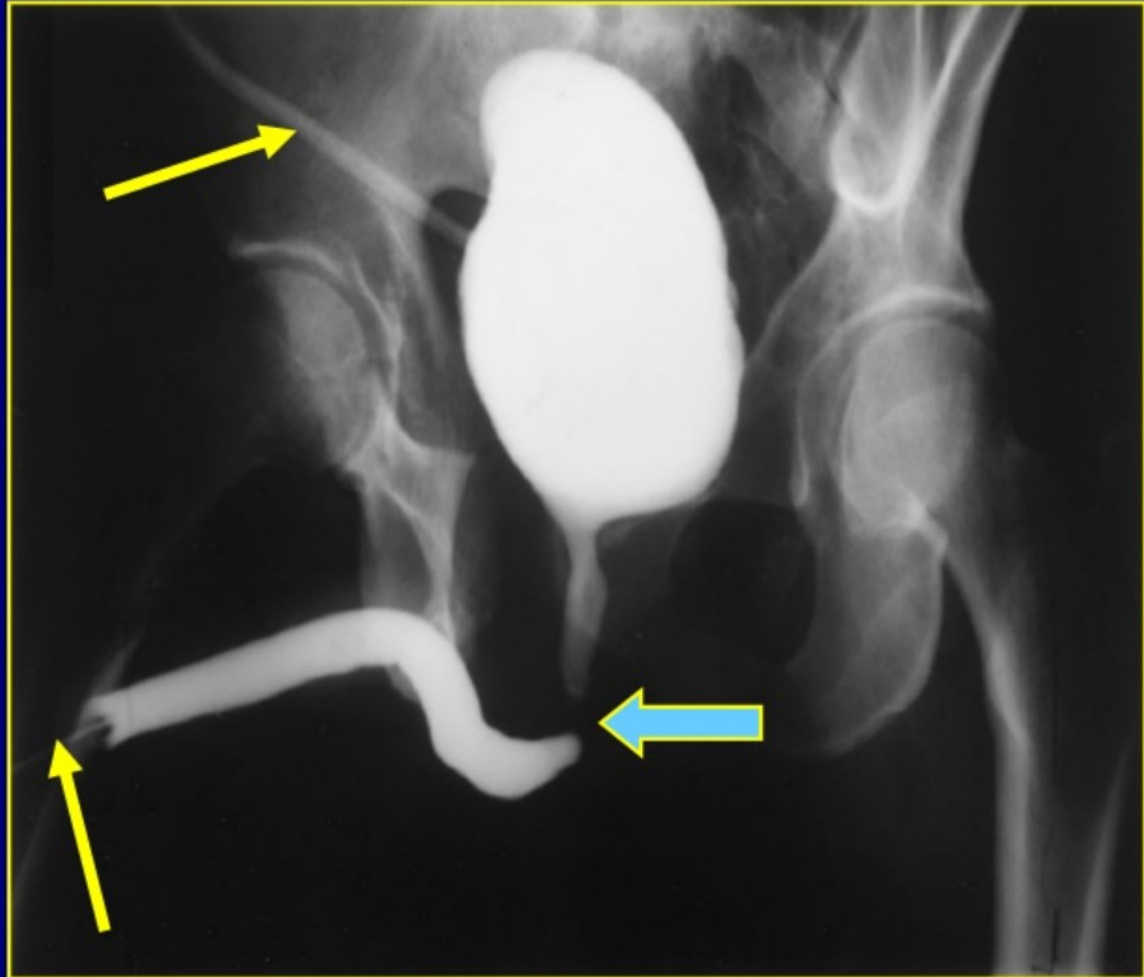
Posterior urethral disruption&

Extravasation
s



Antegrade & Retrograde cysto-urethrography

Stricture urethra



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Treatment of posterior urethral injury

1. Suprapubic catheter
2. Delayed surgical correction (3-6 m)

Why delayed correction?

to decrease incidence of

1. Incontinence
2. Impotence
3. Stricture

Clip slide

Anterior urethral injury treatment

1. Suprapubic cystocath
2. Follow up urethrography after 2-3 wks --------- surgical repair or VIU
3. Immediate surgical correction in certain cases e.g. Fracture Penis

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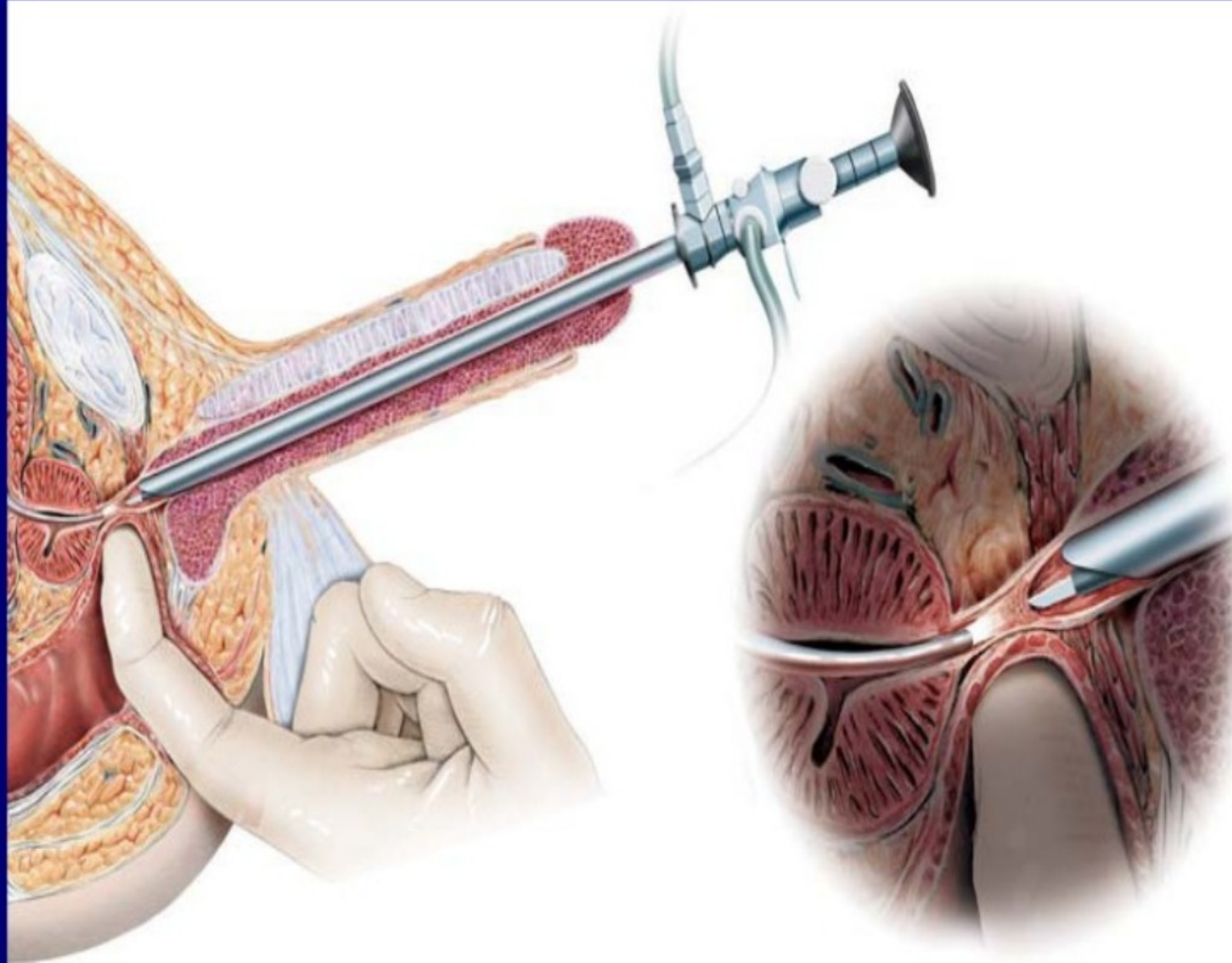
Visual internal urethrotomy (VIU)



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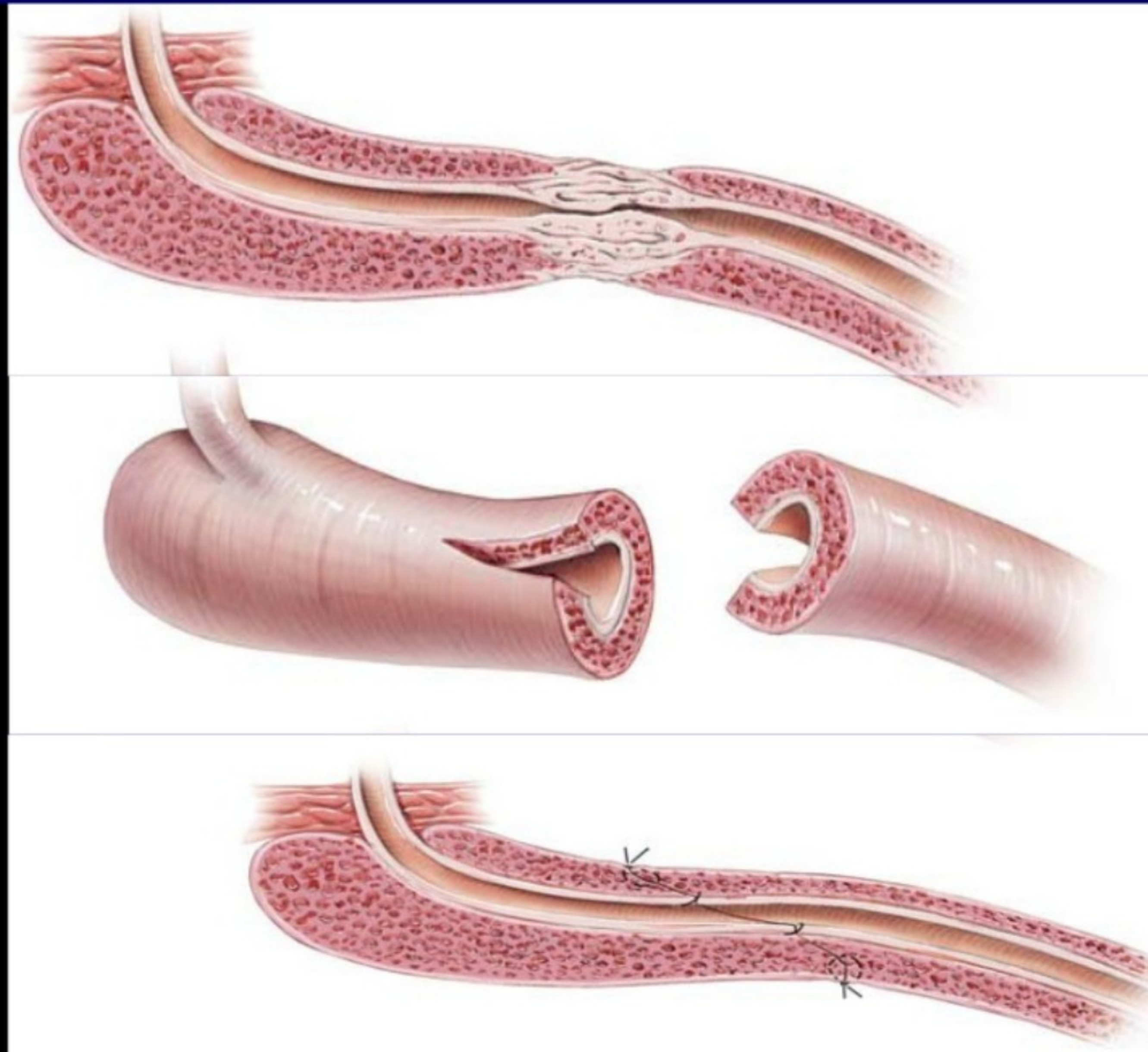
End to end urethroplasty



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