Manifestations of Urological Disease

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**Pain (renal):** localized & referred

**Localized**

**Different forms:**
- **colicky:** (peristalsis) stones, blood clots
- **dull aching:** (sudden distension of capsule) hydronephrosis
- **stabbing:** renal infarction
- **throbbing:** renal abcess
- **stitching:** perinephric abcess (pleural inflammation)

- **Site:** costovertebral angle (boundaries) and spreads to subcostal area
Referred pain:
Renal: to testicle

Q. Why referred pain?

A. Both renal & testicular plexuses have the same aut. n. supply)*
Ureteric divisions

Figure 1

Figure 2
Ureteral pain

**Cause:** (usually) acute obstruction

**Types:**
1. **localized** → ureteric peristalsis → colicky
   → back pressure & renal capsular distension → dull aching pain

2. **referred** → U1/3 ureter → testicle (T11-12)
   M 1/3 ureter → Mc Burney’s point (rt), diverticulitis (lt)
   L 1/3 ureter → scrotum/labia

Vesical pain

1. Acute retention (at S.P area)
2. Acute cystitis (at distal urethra, during the act)
**Prostatic pain**

- Not in the prostate itself
- Lumbo-sacral back pain (prostatic carcinoma)

**Testicular pain**

- Localized: the usual (torsion, orchitis, tumor)
- Referred: along sp. cord into lower abdomen.

**Epididymal pain**

- In acute epididymitis
- Localized (usually)
Hematuria

**Def:** The presence of blood in urine either grossly or microscopically.

**Degree of colouration:** mild, moderate or severe.

**Timing:** initial, terminal, total

**Main causes:** tumors & stones
Hematuria vs. bleeding per urethra:

- **Bleeding proximal to external sphincter**: hematuria.
  - It is related to voiding.

- **Bleeding distal to external sphincter**: bleeding per urethra.
  - It is not related to voiding.
Mass

- In loin / upper abdomen:
  - Hydronephrosis
  - Polycystic kidney
  - Renal tumor

- In neck (enlarged lymph nodes)
  - Metastatic tumor from prostate or testis

- In scrotum
  - Varicocele
  - Hydrocele
  - Testicular tumor
  - Hernia
Gastrointestinal symptoms of urological disease

Examples:
- Acute pyelonephritis: abd pain + distension
- Ureteric colic: nausea + vomiting

Causes:
1. Organ relationship:
   - Rt kidney: related to hepatic flexure, GB, liver, duodenum
   - Lt kidney: just behind splenic flexure, pancreas, spleen

2. Peritoneal irritation:
   - Ant surfaces of both kidneys are covered by peritoneum.
   - Irritation of peritoneum → tender belly

3. Reno-intestinal reflexes:
   - Common innervation of both organ systems
   - Afferent stimuli (renal capsule) → change in tone of smooth muscle of all GIT → e.g. pylorospasm (mimic peptic ulcer).
Lower urinary tract symptoms (LUTS)

A. Irritative
- **frequency**: increase the number of urinations
  - **cause**: 1) ↓ bladder capacity due to:
    - inflammation
    - space occupying lesion (tumor) / object (stone)
    - bl fibrosis (TB, schisosomiasis, post-radiation)
  2) non-urological: ↑ urinary out-put
    - DM, DI

- **urgency**: irresistible desire to urinate.
  up to incontinence (urge incontinence)
  - **cause**: bladder irritability due to:
    - obstruction (BPH)
    - inflammation (cystitis)
    - neuropathic bladder disease (DM)

- **Nocturia**: urinary frequency during night
  - **cause**: bladder compression/irritability, ↑ urinary out-put
    - BPH - DM
    - cystitis - late pregnancy
B. Obstructive:
1. **Failure to initiate the urination act:**
   - Hesitency: delay to start the act
   - Straining to urinate
   - Retention:

<table>
<thead>
<tr>
<th>item</th>
<th>Acute urinary retention</th>
<th>Chronic urinary retention</th>
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</thead>
<tbody>
<tr>
<td><strong>definition</strong></td>
<td>Sudden inability to evacuate the bladder completely</td>
<td>Gradual inability to evacuate the bladder completely</td>
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<tr>
<td><strong>Clinical presentation</strong></td>
<td>Agonizing SP pain</td>
<td>S.P mass, very little SP pain</td>
</tr>
<tr>
<td><strong>Way of consultation</strong></td>
<td>By the patient himself</td>
<td>Mostly by the physician (incidental)</td>
</tr>
<tr>
<td><strong>Renal function</strong></td>
<td>Normal</td>
<td>Deteriorated</td>
</tr>
</tbody>
</table>
2. Failure to maintain the urination act:

a. Interruption of the urinary Stream
b. ↓ force & caliber of urinary stream
c. Double voiding (second urination within a short time of the previous one)
3. Failure to terminate the urination act:

a. Terminal drippling (urethral diverticulum, EP)
b. Sense of incomplete bladder emptying (EP)
OTHER OBJECTIVE MANIFESTATIONS
A. Urethral discharge
**Cause:** *Neisseria gonorrhoeae* or *Chlamydia trachomatis*.

*c/o:* burning urination or itching sensation in the urethra

B. Skin Lesions of the External Genitalia
- ulceration of the glans penis or its shaft e.g. syphilitic chancre, herpes simplex, or squamous cell carcinoma.
- Venereal warts of the penis are common.
Systemic manifestations:

- **Fever**: acute pyelonephritis
  acute prostatitis

- **Loss of weight**: advanced stages of cancer
  renal insufficiency (chronic infection, obstruction)
Dysuria

- **Definition:** painful urination.
- **Cause:** acute inflammation of bladder, urethra or prostate
- It is the **first symptom** of UTI and frequently associated with frequency & urgency.

Enuresis

- **Definition:** bedwetting at night
- **Physiological:** at the first 2 or 3 y of life
- **Pathological:** after that.
  - **Types:** **functional:** delayed neuromuscular maturation of the urethrovesical component
  - **Organic:** UTI
    - distal urethral stenosis (girls)
    - posterior urethral valves (boys)
    - neurogenic bladder
Change in urine volume

Normal urine output: 1500 mL/d

- **Oliguria**: decrease in the daily urine volume
  in children: <0.5 mL/kg/h
  in adults: <400 mL/d

- **Anuria**: absence of urine secretion (<50 mL/d)
  **Causes**: bil ureteric obstruction, ARF

- **Polyuria**: increase in the daily urine volume (in adult >2.5 L/d)
  **Causes**: post-obstructive diuresis, DM, DI
Change in urine appearance

- **Pneumaturia**: passage of gas in the urine
  
  **Due to**: a fistula between the urinary tract and the bowel
  e.g. following carcinoma of the sigmoid colon or diverticulitis

- **Cloudy Urine**: smoked, turbid, nebulous
  1) phosphate or uric acid precipitation (crystals)
  2) infected urine (bacteria, malodorous)
Change in urine appearance-(contin.)

- **Chyluria** (milky white urine): The passage of lymphatic fluid or chyle in the urine

  **Due to**: obstruction of the renal lymphatics
  **causes**: (filariasis, trauma, T.B, retroperitoneal tumors)
  mechanism → forniceal rupture & lymphatic leakage into renal pelvis (lymphatic–urinary system fistula)

- **Bloody urine** (hematuria): the commonest causes (tumors & stones)
Bloody Ejaculation (hematospermia)

**Cause:**
- congestion
- inflammation
- tumors
  of the prostate or seminal vesicles
Complaints related to sexual problems

- **in Men**
  With *prostatic* problems, men frequently report:
  - impaired quality of erection
  - premature ejaculation
  - loss of sexual desire

- **in Women**
  With *psychosomatic cystitis syndrome*, women frequently report:
  - an unhappy sex life
In brief,

The manifestations of urologic disease include:

- The triad
- Gastrointestinal symptoms of urological disease
- LUTS
- Urethral discharge
- Skin Lesions of the External Genitalia
- Systemic manifestations
- Dysuria
- Enuresis
- Change in urine volume, appearance
- Hematospermia
- Complaints related to sexual problems
Thank You
Questions