



Evaluation of dysuria & hematuria

Color index :

Important

Further explanation

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OVERVIEW:

Dysuria : pain, burning, or discomfort during or immediately after urination

The most common causes are infection or inflammation of the bladder or urethra

Voiding symptoms: symptoms that occur at the time of urination: dysuria, hesitancy, dribbling, poor stream

Storage symptoms: symptoms that occur during bladder storage and filing: urgency, frequency, nocturia, incontinence

Infection

Differential Diagnosis:

- ★ **UTI** → Frequency/urgency, suprapubic pain, **hx of previous UTI, sexual activity, BPH in men.**
- ★ **Urethritis** → Common in young patient, Urethral discharge, **frequency and urgency are frequently absent**
- ★ **Pyelonephritis** → Fever, rigors, Flank pain **costovertebral angle tenderness**
- ★ **Prostatitis** → Perineal or rectal pain, urinary frequency, urgency, tender prostate
- ★ **Epididymitis** → Unilateral scrotal pain and **swelling of gradual onset with hematuria**
- ★ **Cystitis** → Suprapubic pain frequency urgency voiding of small urine volumes, hx of previous UTI, common in young female, uncommon and always complicated in young male .

Inflammatory

- ★ **Atrophic vaginitis** → Postmenopausal women, **vaginal discharge, external irritation/pruritus, dyspareunia**
- ★ **Behcet's syndrome** → Frequency, urgency, **painful oral and genital ulcers, uveitis, arthralgia**
- ★ **Reactive arthritis** → Cant pee, cant see, cant climb a tree :D
- ★ **Interstitial cystitis** → Urgency. Frequency, dyspareunia, **pain is exacerbated by specific foods and emotional or physical stress**
- ★ **Valvudenya**
- ★ **Drugs or radiation** → dopamine

Mechanical

- ★ **BPH** → Voiding and storage symptoms, age over 50 years
- ★ **Urethral stricture /stenosis** → Hx of Urethral surgery, previous hospitalization → prolonged catheter + hx of gonorrhea
- ★ **Urolithiasis** → Sudden onset of **colicky flank / groin pain, nausea, vomiting** inability to get comfortable, costovertebral angle tenderness
- ★ **Cystocele**

Neoplasm & hormonal

- ★ **Prostate cancer** → **hematuria**, voiding and storage symptoms, **back pain**, above 50 of age, family hx of prostate cancer
- ★ **Bladder cancer** → **hematuria**, frequency, urgency, smoking, above 50 of age
- ★ **Renal cancer** → **haematuria**, urinary frequency/urgency, flank pain
- ★ **Cervical cancer** → **haematuria, intermenstrual or post-menopausal bleeding**, menorrhagia, urinary frequency/urgency
- ★ **Urethral cancer** → **Insidious, haematuria**, urethral discharge, urethral pain
- ★ **Penile cancer** → **haematuria**, urinary frequency, urgency
- ★ **Endometriosis** → if it involve the bladder, cyclic

Personal Profile

Chief Complain: dysuria

Time course

How long have you had pain with urination?

- 1–2 days? → bacterial cystitis, Acute bacterial prostatitis Bacterial epididymitis
- 2–7 days? Urethritis/epididymitis (gonorrhea, chlamydia, herpes simplex virus)
- More than 14 days? Chlamydia infection (in women)
- Weeks to months? Interstitial cystitis Chronic bacterial prostatitis, Vulvodinia

Character

- Cyclic ? Endometriosis, Pelvic Inflammatory Disease
- The pain come After having sex ? Recurrent UTI
- The pain at the beginning of urination ? Urethritis
- At the end? Cystitis or prostatitis

Aggravating and relieving factors

Does your pain get worse after you consume certain foods or drinks? Interstitial cystitis or painful bladder syndrome

Does your pain increase when your bladder is full and improve after urination? Interstitial cystitis or painful bladder syndrome

Associated symptoms

Urinary symptoms

- Do you urinate more frequently than usual? The causes of urine frequency are increase urine production (polyuria), decrease bladder capacity (Cystitis) or incomplete emptying of the bladder (BPH)
- Do you have sensation of needing to urinate immediately (Urine urgency)? Suggest cystitis, bladder cancer, neurogenic bladder dysfunction
- Urinary incontinence ? Cystitis, bladder cancer (irritate and obstruct the bladder) neurological disease (upper motor neuron lesion, multiple sclerosis, Parkinson's disease)
- Is the amount of urine less than usual (incomplete emptying) ? Bladder inflammation
- Has the appearance of your urine changed ? Cloudy urine suggest UTI
- Dysuria without frequency, urgency ? Urethritis (for men)
- Weak stream, dribbling, hesitancy ? BPH
- Have you noticed blood in the urine ? Cystitis, BPH, bladder cancer
- Urethral or vaginal discharge ? Urethritis, cervicitis
- Have you been treated for a UTI in the past? recurrent UTI.

With fever

- Flank pain ? Pyelonephritis
- Testis pain and swelling ? Epididymitis, prostates
- Perianal pain ? prostates

vaginal or urethral discharge...

- Color of the discharge? Purulent or mucopurulent discharge characterizes urethritis or - cervicitis
- Burning or pain in external genital area? candidal vulvovaginitis.
- Is the discharge bloody? urethral cancer (rare)

<p>Others</p>	<ul style="list-style-type: none"> - Are you having pain in your mid-back (flank pain)? Nephrolithiasis , renal cell carcinoma - Weight loss and fatigue ? Bladder cancer, renal cell carcinoma - mouth ulcers, arthralgia, eyes symptoms ? Behcet's syndrome, Reactive arthritis - Painful genital ulcer ? herpes simplex virus - vaginal dryness ? Atrophic vaginitis
<p>Sexual and social history</p>	<ul style="list-style-type: none"> - are you sexually active ? new sexual partner? Have you travelled recently ? STD - have you used spermicide to prevent pregnancy ? Increase risk for UTI - do you smoke ? What jobs have you had(paint industry) ? Bladder cancer

- ★ Dysuria with an insidious onset raises the possibility of rare neoplastic etiologies.
- ★ Dysuria in the presence of systemic symptoms (fever or chills, abdominal or flank pain, nausea and vomiting) usually indicate acute bacterial causes of dysuria such as :
 - Pyelonephritis, acute prostatitis, epididymitis, or pelvic inflammatory disease.
- ★ women with dysuria but no vaginal symptoms, UTI is more common
- ★ Adult women with dysuria and vaginal discharge most likely they have vulvovaginitis
- ★ Dysuria in older women usually arises from noninfectious causes such as atrophic vaginitis.

OVERVIEW:

- ★ **Hematuria** : Bleeding from the urinary tract.
 - ★ **Gross hematuria** : The presence of blood in the urine in sufficient quantity to be visible to the naked eye.
- > 3500 red blood cells per high-power field are present.
- ★ **Microscopic hematuria** : 2–3 red blood cells per high-power field on urine microscopy.

DDx of Hematuria

A- Non glomerular

Upper Urinary tract

Ureteral calculus → Severe colicky pain **radiating from loin to groin**, the patient is *writhing*, *hx of stone*

Renal calculus → Flank **pain radiated to the testis**, Haematuria. Dysuria. Signs of uraemia, the patient is *writhing*, *hx of stone*

Pyelonephritis → Flank pain, fever, chills, vomiting, Hx of UTI, DM, **costovertebral angle tenderness**

Renal trauma → Blunt flank trauma, penetrating flank or abdominal wounds (gunshot or stab), fractured lower ribs

Papillary necrosis → Flank pain, Hx of diabetes mellitus and sickle-cell disease or with long-term ingestion of NSAID

Sickle cell disease → Hx of SCD, persistent pain in skeleton, chest, and/or abdomen, dactylitis

Renal infarct → Sudden flank or abdominal pain, **hx of Afib**

Renal TB → Malaise, weight loss, **Hx of TB exposure**

Renal vein thrombosis → Sudden flank pain, **Hx of nephrotic syndrome**

Lower Urinary tract

Urethritis → → Common in young patient, Urethral discharge, frequency and urgency are frequently absent

Prostatitis → Perineal or rectal pain, urinary frequency, urgency, tender prostate

BPH → voiding & storage symptoms, hx of BPH

Cystitis → Frequency/urgency, suprapubic pain, Hx of previous UTI, sexual activity, BPH in men, common in young female, uncommon with young male

Bladder cancer → Hematuria, frequency, urgency, **smoking, above 50 of age**

Prostate cancer → Hematuria, voiding and storage symptoms, back pain, **above 50 of age, family Hx of prostate cancer**

Exercise induced → Recent hx of vigorous exercise

B - Glomerular

Primary GN

IgA Nephropathy → Recurrent macroscopic haematuria associated with **upper respiratory tract infections**

Postinfection → Common from age 2 to 10 years, abrupt onset of oedema, gross haematuria, **1 to 2 weeks post-pharyngitis**,

Secondary GN

SLE → 15 and 45 years, more common in female, malar rash, arthralgia, fatigue

Wegener's Granulomatosis → **Hemoptysis** & hematuria

Goodpasture → **Hemoptysis** & hematuria

Personal Profile

Chief Complain: hematuria

<p>Time course</p>	<ul style="list-style-type: none"> - Is this the first episode ? Transient or self limiting condition - When did it start ? - How did you notice it ? - Did you exercise vigorously prior to the hematuria ? Exercise Induced Hematuria - Have you had a recent injury to you abdominal, back or flank ? Trauma - Are you having your menstrual period ? Vaginal source or Endometriosis - Have you recently had Urinary catheter, Urinary Procedure or UTI ? Iatrogenic or Recurrent UTI - Have you recently had URT symptoms OR sore throat ? <p>1: if the hematuria starts after the symptoms by 1-3 days : most likely IgA nephropathy 2: if After 1-3 weeks : Post infection GN</p>
<p>Quality</p>	<ul style="list-style-type: none"> - Is it painful or painless ? Painless Hematuria indicate malignancy, bleeding disorder, drugs related. while Painful indicate Renal stone, UTI , trauma but does not r/o malignancy. if it painful ? ask about the timing of pain <ul style="list-style-type: none"> ◆ Before hematuria:stone (hx of pain for 1 weak then developed hematuria ◆ After hematuria:clot colic due to malignancy or arteriovenous malformation - Does the urine contain clots ? Nonglomerular source - If there are clots, what are the shape ? <ul style="list-style-type: none"> 1:Pipes like ? Bleeding from the ureter 2: Balls like ? Bleeding from the bladder - Is the blood present <ul style="list-style-type: none"> 1:at the beginning ? Lesion from the urethra or distal to the bladder neck 2: at the end ? Lesion from the bladder neck, bladder trigone or posterior urethra 3: Throughout ? Hemorrhagic cystitis , renal or ureteral source, malignancy
<p>Associated symptoms</p>	<ul style="list-style-type: none"> - Urinary symptoms ? - Fever ? Pyelonephritis, Acute prostatitis, Prostatic abscess and Renal cell carcinoma - Sharp pain in your lower abdomen or above the groin ? Renal calculus - Suprapubic pain ? Cystitis - Flank pain ? Pyelonephritis, Papillary necrosis, Renal calculus and renal infarction - Voiding and storage symptoms ? BPH - Weight, appetite loss and malaise ? Malignancy - Swelling of the eyelids or feet ? GN - Deafness ? Alport's syndrome - Hemoptysis ? Wegener's, goodpasture - Joint or skin rash ? GN secondary to SLE, polyarteritis nodosa - Easy bruising, bleeding from other sites ? Bleeding disorder
<p>Past medical</p>	<ul style="list-style-type: none"> - Are you taking <ul style="list-style-type: none"> 1: blood thinner ? Warfarin ? 2: Cyclophosphamide ? Hemorrhagic cystitis , bladder cancer - Have you ever had Kidney stone ? Urinary calculus - Have you ever had gout ? Uric acid stone - Do you have sickle cell anemia? - Hx of Nephrotic syndrome ? Renal vein thrombosis - Hx of endocarditis ? GN
<p>Social hx</p>	<p>Smoking ? Bladder cancer Occupation ? Leather, dye, rubber, tire manufacturing? Bladder cancer Hx of traveling eg: egypt ? <i>Schistosma haematobium</i> → bladder cancer</p>