



SNS COLLEGE OF ALLIED HEALTH SCIENCES
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DEPARTMENT : PHYSICIAN ASSISTANT

COURSE NAME : NEPHROLOGY

UNIT : CLINICAL EXAMINATION OF KIDNEY

**TOPICS : MAJOR MANIFESTATIONS - DYSURIA,
PYURIA AND URETHRAL SYMPTOMS**



DYSURIA



Definition:

- Dysuria refers to painful or difficult urination.
- This symptom is often described as a burning, stinging, or aching sensation during urination.



Causes:

- Infections: Most commonly caused by urinary tract infections (UTIs) which include cystitis (bladder infection), urethritis (urethra infection), and pyelonephritis (kidney infection).



- Sexually Transmitted Infections (STIs): Gonorrhoea, chlamydia, and herpes.
- Non-infectious causes: Interstitial cystitis, prostatitis, trauma, chemical irritants (such as spermicides or douches), and certain medications.



Pathophysiology :

- Infections: Bacteria, viruses, or fungi invade the urinary tract, leading to inflammation of the mucosal lining.
- This inflammation causes irritation and pain during urination.



- **Interstitial Cystitis:** A chronic condition causing bladder pressure, bladder pain, and sometimes pelvic pain. The cause is not well understood but involves inflammation and defects in the bladder lining.
- **Trauma or Irritants:** Physical damage or exposure to irritants can cause inflammation and ulceration of the urinary tract mucosa.



Diagnosis:

- **History and Physical Examination:** Detailed history including onset, duration, associated symptoms, and risk factors. Physical exam focuses on the abdomen, genitals, and perineum.
- **Urinalysis:** Detects pyuria, hematuria, or bacteriuria.
- **Urine Culture:** Identifies the specific pathogen causing the infection.



- STI Testing: NAAT (Nucleic Acid Amplification Tests) for gonorrhea and chlamydia.
- Imaging: Ultrasound or CT scan if structural abnormalities are suspected.



Management:

- Antibiotics: Tailored based on the identified pathogen (e.g., nitrofurantoin or trimethoprim-sulfamethoxazole for uncomplicated UTIs).
- Pain Management: Phenazopyridine can be used for symptomatic relief.



- Hydration: Increased fluid intake to flush out the urinary tract.
- Addressing Underlying Conditions: Treatment of interstitial cystitis or discontinuing irritating products.



PYURIA



Definition:

- Pyuria is the presence of pus in the urine, typically indicating an inflammatory response within the urinary tract.



Causes :

- Infections: UTIs, prostatitis, epididymitis, and kidney infections.
- Inflammatory Conditions: Interstitial cystitis, tuberculosis of the urinary tract.
- Foreign Bodies: Indwelling catheters or urinary tract stones.
- Neoplasms: Bladder or kidney cancers.



Pathophysiology:

- **Infections:** Pathogens cause an immune response, leading to the migration of white blood cells (WBCs) into the urinary tract.
- **Inflammatory Conditions:** Chronic inflammation, even without infection, can lead to WBC presence in urine.
- **Neoplasms and Foreign Bodies:** Can cause local irritation and secondary infection or inflammation.



Diagnosis :

- Urinalysis: Shows elevated WBCs in the urine.
- Urine Culture: Differentiates between infectious and non-infectious causes by identifying pathogens.
- Imaging: CT scan, ultrasound, or cystoscopy to evaluate structural abnormalities or tumors.
- Special Tests: Acid-fast bacillus stain for tuberculosis, cytology for cancer.



Management:

- Antibiotics: Appropriate based on culture results.
- Removal of Foreign Bodies: If catheter or stones are causing pyuria.
- Anti-inflammatory Treatment: For non-infectious inflammatory conditions.
- Oncological Treatment: If pyuria is secondary to malignancy.



URETHRAL SYMPTOMS



Definition:

- Urethral symptoms refer to any abnormalities associated with the urethra, including pain, discharge, and itching.



Causes:

- Infections: Bacterial (e.g., gonorrhea, chlamydia), viral (e.g., herpes simplex virus), fungal.
- Trauma: Physical injury, catheterization, or sexual activity.
- Irritants: Chemical exposure from spermicides or hygiene products.
- Systemic Conditions: Reiter's syndrome, Behçet's disease.



Pathophysiology :

- Infections: Pathogens infect the urethral epithelium causing inflammation and symptomatic discharge or pain.
- Trauma and Irritants: Cause direct damage and inflammation of the urethral lining.
- Systemic Conditions: Immune-mediated responses leading to urethritis as part of broader systemic symptoms.



Diagnosis :

- History and Physical Examination: Focus on sexual history, onset, duration, and associated symptoms.
- Urethral Swab: For microscopic examination and culture to identify pathogens.
- Urine Testing: First-catch urine for NAAT to diagnose STIs.
- Imaging: Less commonly used unless structural abnormalities or foreign bodies are suspected.



Management:

- Antibiotics: Specific to the identified pathogen (e.g., ceftriaxone and azithromycin for gonorrhoea).
- Antivirals: For herpes simplex virus infections (e.g., acyclovir).



- Pain Management: NSAIDs for symptomatic relief.
- Avoidance of Irritants: Stopping the use of any identified chemical irritants.
- Treatment of Systemic Conditions: Addressing underlying systemic diseases such as autoimmune disorders.



ASSESSMENT



- What is Dysuria ?
- What is Pyuria ?