

Ureteritis: Causes, Symptoms, Diagnosis and Treatment

Ureteritis refers to inflammation of the **ureters** , the muscular tubes connecting the kidneys to the bladder.

It is **rare** and usually occurs in association with:

- **Cystitis** (bladder infection)
- **Pyelonephritis** (renal infection)

Classification of Ureteritis

Ureteritis can be subdivided based on **etiologic factors** into:

1. Infective Ureteritis

- **Most common** cause
- Associated with **ascending urinary tract infections**
- Pathogens:
 - *Escherichia coli*
 - *Klebsiella spp.*
 - *Proteus mirabilis*
 - *Aerobacter aerogenes*

2. Postoperative Ureteritis

- Due to manipulation, instrumentation, or surgical trauma (e.g. ureteric stents)

3. Noninfective Ureteritis

Includes rare, immune-mediated, or idiopathic causes:

- **Ureteral amyloidosis**
- **Eosinophilic ureteritis**
- **IgG4-related ureteritis**
- **Idiopathic segmental ureteritis**
- **Ureteritis cystica**

Ureteritis Cystica (UC)

Definition

A rare, benign condition characterized by:

- **Cystic metaplasia** of Brunn's epithelial nests in the urothelium
- Presence of **numerous subepithelial cysts** (1–10 mm), filled with clear fluid and lined by

flattened epithelium

- Often found **incidentally** on imaging

Etiology and Risk Factors

- **Chronic urothelial irritation** (recurrent UTIs, long-term catheterization, urolithiasis)
- **Vitamin A excess**
- **Immunoglobulin A overproduction**
- Typically affects **adult females**
- When affecting the **bladder** , it is termed **cystitis cystica**

Pathophysiology

- **Chronic inflammation** leads to **proliferation of epithelial nests (Brunn's nests)**
- These undergo **cystic transformation** , forming mucin-filled cysts beneath the urothelial lining
- May be due to:
 - Persistent **infection**
 - **Foreign body** (e.g., stents)
 - **Chemical irritants**
 - **Autoimmune conditions**

Clinical Features

- Symptoms overlap with **UTIs** or **pyelonephritis** :
 - **Flank or suprapubic pain**
 - **Dysuria**
 - **Hematuria**
 - **Fever**
 - Elevated **white cell count**
- Ureteritis cystica may be **asymptomatic** , detected incidentally during:
 - Evaluation for **UTIs (82%)**
 - **Renal stones (53%)**
 - **Hematuria**

Imaging and Diagnosis

Laboratory Findings

- Leukocytosis
- Positive urine cultures if infection present

Imaging

- **CT Urography** :
 - Shows **circumferential wall thickening**
 - **Periureteric fat stranding** (if active inflammation)
- **Excretory urography / Retrograde pyelography** :

- **Multiple smooth, round filling defects**
- **"Scalloping"** of ureteral wall
- **Ureteroscopy** :
 - Enables **direct visualization**
 - **Biopsy** for histopathology (confirm diagnosis, rule out malignancy)

Treatment

General Approach

- **Treat underlying cause** :
 - **Antibiotics** for infection
 - **Stone removal** or management of obstructive uropathy
- **Removal of foreign bodies** (e.g., stents) if implicated
- In rare cases:
 - **Surgical resection** of affected ureteral segment (e.g., in IgG4-related ureteritis or segmental obstruction)
 - **Immunosuppressive therapy** for autoimmune-associated ureteritis

High-Yield Summary for Exams

Feature	Ureteritis	Ureteritis Cystica
Etiology	Infection, stents, autoimmune, idiopathic	Chronic irritation, often idiopathic
Symptoms	Dysuria, hematuria, fever, flank pain	Often asymptomatic
Imaging	Wall thickening, fat stranding	Multiple smooth filling defects, scalloping
Diagnosis	Imaging + ureteroscopy + histology	Imaging + ureteroscopy biopsy
Treatment	Etiologic management	Usually conservative unless symptomatic