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Interstitial Cystitis

Synonyms: interstitial cystitis/painful bladder syndrome, painful bladder syndrome, bladder pain syndrome, hypersensitive bladder syndrome, trigonitis

Interstitial cystitis is a chronic bladder condition of unknown cause characterised by pelvic pain, dysuria, urinary frequency, urgency of micturition, and pressure in the bladder and pelvis. [1] Interstitial cystitis has been defined as a disease of the urinary bladder diagnosed by: [2]

- Lower urinary tract symptoms:
    - Pain, pressure or discomfort associated with the urinary bladder, accompanied by at least one other symptom, such as daytime and/or night-time increased urinary frequency. [3]
- Bladder pathology - eg, Hunner's ulcer on the bladder wall, and mucosal bleeding after overdistension.
- Exclusion of other possible causes for the presenting symptoms - eg, infection, malignancy and calculi of the urinary tract.

The American Urological Association defines the duration of symptoms as longer than six weeks. [4]

Epidemiology

- The exact prevalence is unknown because of misdiagnosis. Although once thought to be rare, interstitial cystitis is now believed to have a much higher prevalence. [5]
- Prevalence ranges from 52 to 500/100,000 in females compared to 8-41/100,000 in males. The incidence is increasing globally. [6]
- It is claimed that many more men have interstitial cystitis than is appreciated and are often misdiagnosed as having other conditions such as prostatitis. It has also been reported that interstitial cystitis can occur in children.

Presentation

Symptoms vary widely in severity and nature but the onset of symptoms is often acute and may be sudden.

- Recurrent symptoms similar to urinary tract infections (urgency, frequency, dysuria), lower abdominal pain, pressure in the bladder and/or pelvis, and dyspareunia.
- Characteristics of the pain include: [3]
    - Pain, pressure or discomfort perceived to be related to the bladder, increasing with increasing bladder content.
    - Located suprapubically, sometimes radiating to the groins, vagina, rectum or sacrum.
    - Relieved by voiding but soon returns.
    - Aggravated by food or drink.
- In women the symptoms are often worse during menstruation.
- There is wide variation in symptoms between individuals and in any one individual over time.
- It may be recurrent and persistent in some, resulting in the bladder becoming scarred and small.
- Examination may be normal apart from suprapubic tenderness.
- The severity of the symptoms often bears little correlation with the clinical findings.
- Trials of antibiotic treatment do not cure the condition.

Associated disorders

- Associated chronic illnesses include endometriosis, inflammatory bowel disease, systemic lupus erythematosus, irritable bowel syndrome, fibromyalgia and allergy disorders.
- Associated psychiatric conditions include anxiety disorder, depression and adjustment reactions.

Differential diagnosis

Other causes of urinary frequency, urgency of micturition and pelvic pain, including:

- Infection or other inflammatory conditions - eg, recurrent urinary tract infection, urethral diverticulum, infected Bartholin's gland, tuberculous, bacterial or viral vaginosis, schistosomiasis.
- Gynaecological - eg, pelvic malignancy, uterine fibroids, endometriosis, mittelschmerz (ovulation pain), pelvic inflammatory disease, genital atrophy.
- Urological - eg, bladder cancer, radiation cystitis, overflow incontinence, chronic pelvic pain syndrome, bladder outlet obstruction, urolithiasis, urethritis, chronic prostatitis, prostate cancer.
- Neurological - eg, detrusor overactivity, Parkinson's disease, lumbosacral disc disease, spinal stenosis, spinal tumour, multiple sclerosis, cerebrovascular disease.
- Others include inflammatory bowel disease, gastrointestinal neoplasm, diverticulitis and adhesions from previous surgery.

Investigations

The diagnosis of interstitial cystitis is usually based on a thorough assessment and exclusion of other causes.[7]

- Urinalysis and midstream urine for urine cultures: rule out urinary tract infection, including tuberculosis.
- Cervical swabs for herpes and chlamydia.
- Urodynamic studies: there are no specific findings but pain with bladder filling that reproduces the symptoms is very supportive of a diagnosis of interstitial cystitis.
- Most cases need cystoscopy to exclude bladder cancer. Hunner's ulcers (reddened mucosal areas often associated with small vessels radiating towards a central scar, sometimes covered by a small clot or fibrin deposit) may be seen in 10-50%.[3]
- Men should have urethral swabs and prostatic secretion cultures (for chronic prostatitis).

Management[3]

- Management is often difficult and only partially effective. Early diagnosis and management are important.
- The cause of the condition is unknown and there is no one treatment that helps everybody.
- Treatment is mainly symptomatic and supportive.
- Management consists of finding the best combination to suit the patient.[8]

Non-drug

- Behavioural therapy: biofeedback, pelvic floor exercises and bladder training programmes may be effective.
- Diet: there is no evidence for specific dietary measures but alcohol, tomatoes, spices, chocolate, caffeinated and citrus drinks and acidic foods may contribute to bladder irritation and inflammation.[9]
- Some people report a reduction in symptoms following distension of the bladder during diagnostic cystoscopy. There is belief that distending the bladder causes the nerve cells to be stretched and thus less sensitive for a time.
- Transcutaneous electrical nerve stimulation (TENS) helps in conjunction with other therapies.[9]

Drugs

- Ibuprofen and tricyclic antidepressants may be beneficial for pain relief.[9]
- Catheterisation and therapeutic intravesical dimethyl sulfoxide (DMSO), heparin, or lidocaine may be effective.[4]
- Cimetidine or hydroxyzine can be effective as second-line oral medications.[4]
- Gabapentin may be considered for pain relief.[3]
- Opioids might be used in BPS in disease flare-ups. Long-term application only if all treatments have failed.[3]

- Anticholinergic agents (eg, oxybutynin, tolterodine) reduce urinary frequency but can impair bladder emptying and so exacerbate pelvic pain. They should therefore be used with caution in patients with interstitial cystitis.
- Cyclosporin A might be used in BPS but adverse effects are significant. [3]
- Some women improve on the oral contraceptive pill.

Surgical

Sacral nerve stimulation (neuromodulation) has been shown to be effective in patients with refractory interstitial cystitis. [10]

Major surgery (subtotal cystectomy and bladder augmentation or supravesical urinary diversion with intact bladder) is associated with good symptom relief in strictly selected patients with disabling interstitial cystitis, where conservative treatment has failed. [11]

When all other treatment options fail to relieve disabling symptoms, surgical removal of the diseased bladder is the ultimate option, for which three major techniques are common: supratrigonal (trigone-sparing) cystectomy, subtrigonal cystectomy and radical cystectomy including excision of the urethra. [3]

Prognosis

- The prognosis is very variable, from complete resolution of symptoms within months, a waxing and waning course, completely asymptomatic with intermittent flares, or a chronically progressive course of increasing symptoms over several years.
- Some people do recover spontaneously, but individuals may have the condition for many years and there may be spontaneous resolution only to return days or months later.
- Short-term (up to one year) cure rates range from 50% to 75% for non-invasive or minimally invasive therapies, but repeat administration of a therapeutic agent is required. Although definitive surgical intervention is associated with greater long-term cure rates (≥80%), significant short-term and long-term adverse effects occur more frequently. [6]
- Interstitial cystitis can have a significant and even profound effect on quality of life. [5]

Further reading & references

- Cystitis and Overactive Bladder Foundation
- Interstitial Cystitis Association

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