

HUNNER LESION (FORMERLY KNOWN AS HUNNER'S ULCER)

At the present time, two main subtypes of Interstitial Cystitis/Bladder Pain Syndrome (IC/BPS) can be distinguished:

- **the classic inflammatory subtype with Hunner lesion** (formerly known as Hunner's ulcer, sometimes also referred to today as Hunner Disease).

- **the non-lesion subtype.**

Cystoscopic findings are different for these two main types and the approach to treatment is also different. It is therefore very important for Hunner lesions to be identified at the earliest possible stage. Most experts today consider that these two subtypes represent separate bladder conditions.

History

Guy Leroy Hunner, a Boston gynaecologist, described this inflammatory bladder disease a century ago in great detail for the first time in a series of papers, the first being published in 1914 (republished in 1915). In this first paper he writes: *"While cystoscopy usually reveals only one inflammatory spot, there may be two or three granulation areas near together or somewhat separated, and operation usually reveals a more extensive area of inflammation than was appreciated by cystoscopy. The ulcer area may be easily overlooked and the attention may first be arrested by an area of dead white scar tissue. In the neighbourhood of this scar-looking area, one sees one or more areas of hyperemia which, on being touched with a dry cotton pledget, or with the end of the speculum, bleed and first show their character as ulcers. In other cases, or perhaps at subsequent examination on the same case, the ulcer may be well defined as a deeply red area with granulating base and with congested vessels surrounding the area. In none of the cases has an individual ulcer area been more than a half centimetre in diameter, although two or three such ulcers have at times been grouped in a larger inflammatory area."*

These "ulcers" came to be known as "Hunner's ulcers", although it was realized very early on that the term "ulcer" was a misnomer since it did not in fact concern a true ulcer at all but an inflammatory lesion, and was indeed frequently described by Hunner's contemporaries as a lesion. Vision with the still rudimentary cystoscope in those days was relatively poor and this may have been one of the reasons Hunner thought he was seeing ulcers. However, his description of lesions remained the gold standard for many years and the name Hunner's ulcer continued to be used, leading many urologists to believe that ulcers were necessary for a diagnosis.

DIAGNOSIS

Diagnostic procedures may include:

- Medical history
- Physical examination
- Laboratory tests including dipstick urinalysis, routine and special cultures, urine cytology
- Serum PSA in male patients over the age of 40 years
- Flowmetry and post-void residual urine volume measure by ultrasound scanning
- Cystoscopy with biopsy.

Cystoscopy

Hunner lesions are best detected by cystoscopy with hydrodistension under general, epidural or local anaesthesia by an experienced urologist trained to detect them.

Cystoscopy allows the urologist to look into the bladder and carry out a number of tests and is a standard investigation in urology when it is felt necessary to take a look around the bladder. A narrow tube is inserted into the bladder via the urethra. It has two or more channels: one carrying an endoscope that allows visual examination of the inside of the bladder, the other channel carries fluid for instillation into the bladder.

There are two main methods of cystoscopy:

- The (office) cystoscopy using local anaesthesia but without hydrodistension* and
- the cystoscopy under general or spinal anaesthesia with hydrodistension .

* hydrodistension = stretching the bladder by slowly filling with water.

The most experienced urologists can detect probably the majority of lesions at plain cystoscopy, but in order to ensure optimal treatment for the patient, all Hunner lesions need to be identified and this at present requires hydrodistension. Without hydrodistension, lesions may remain undetected.

Professor Magnus Fall from Sweden has described these lesions as follows on the ESSIC website:

“The Hunner lesion typically presents as a circumscribed, reddened mucosal area with small vessels radiating towards a central scar, with a fibrin deposit or coagulum attached to this area. This site ruptures with increasing bladder distension, with petechial oozing of blood from the lesion and the mucosal margins in a waterfall manner. A rather typical, slightly bullous edema develops post-distension with varying peripheral extension.”

A further detailed scientific description can be found on the ESSIC website:

http://www.essic.eu/Hunner_lesion.html

Videos and photos of Hunner lesions can be seen at: <http://www.essic.eu/videomenu.html>

Bladder biopsy

A bladder biopsy may be carried out and involves taking a minimum of three small samples of tissue from different levels in the bladder wall, including from the detrusor muscle, at several different sites in the bladder. The biopsy is important to exclude the possibility of other causes of the symptoms (such as bladder cancer, eosinophilic cystitis and tuberculous cystitis) and all lesions or patches identified during cystoscopy should therefore be biopsied. The samples obtained will then be examined microscopically by the pathologist and in the case of Hunner lesions this histopathological examination shows chronic inflammation, with lymphocytes, plasma cells, macrophages, neutrophilic and eosinophilic granulocytes, and a large number of mast cells.

In contrast, in patients who do not have Hunner lesions, completely normal biopsy results may be found.

Future possibilities for diagnosis

- Narrow band imaging

In Japan, studies have been carried out into the use of narrow band imaging to detect Hunner lesion and to assist transurethral electrocoagulation. However, further research is needed to show the therapeutic efficacy and safety of this promising method.

- Intravesical nitric oxide: a possible marker

In addition recent studies have indicated that intravesical nitric oxide may be a potential marker to diagnose Hunner lesion. It has been shown that patients with Hunner lesions have high NO levels

symptoms, while those without Hunner lesions have normal levels. While measurement is a simple procedure, it requires a nitric oxide measuring device that is as yet not generally available in urology departments. Research continues in this field.

Prevalence of Hunner lesions: Not so rare perhaps...

Until recently, lesions have been considered to be relatively rare, but it is possible that these lesions are currently being under-diagnosed, particularly in centres with less experience of these patients. Centres with urologists experienced in diagnosing lesions are detecting them in up to 50% of the IC/BPS patients. Every effort is now being made to ensure that urologists and urogynaecologists can recognise Hunner lesions in the bladder when they see them.

TREATMENT

Treatment specifically for Hunner lesion includes: submucosal injection, laser therapy, fulguration/electrocoagulation or transurethral resection. Where necessary, this can be combined with other types of treatment for IC/BPS including intravesical instillations.

Triamcinolone submucosal injection has recently been studied for the treatment of Hunner lesion with very good results. Under general anaesthesia, triamcinolone (40mg/cc) is injected with an endoscopic needle in volumes ranging from 5-10 cc (depending on the number and size of the lesions) into the submucosal space of the centre and periphery of lesion(s). It appeared to be well-tolerated in 66% of patients with Hunner lesion. This study is ongoing and continues to produce positive results.

Laser ablation, fulguration/electrocoagulation or transurethral resection (TUR)

Pain in the bladder caused by lesions can improve dramatically when treated with fulguration/electrocoagulation, laser (burning out and sealing the lesion) or resection (surgical removal of the lesion). This treatment needs to be periodically repeated as and when the pain returns. This may be after a few months or after several years. TUR has been shown to lead to considerable improvement in both pain and frequency in many lesion patients.

While good symptom improvement has been seen in studies with neodymium Yag-laser treatment, it is essential for patients to be treated by very experienced surgeons since this therapy carries the risk of complications such as accidental bowel perforation in less experienced hands.

References and further scientific reading:

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Further articles and editorial comments of interest can be found in
 The Special Issue: 3rd [International Consultation on Interstitial Cystitis Japan \(ICICJ\) and International Society for the Study of Bladder Pain Syndrome \(ESSIC\) Joint Meeting, 21–23 March 2013, Kyoto, Japan April 2014](#), Volume 21, Issue Supplement S1, Pages 1–88, i–vi, A1–A25

Web pages:

http://www.essic.eu/Hunner_lesion.html

<http://www.essic.eu/videomenu.html>

International Painful Bladder Foundation brochure

Meijlink JM. Interstitial Cystitis/Bladder Pain Syndrome: Diagnosis & Treatment.

http://www.painful-bladder.org/pdf/Diagnosis&Treatment_IPBF.pdf