

# HUNNER ULCER OF THE BLADDER\*

A REPORT OF FORTY-FIVE CASES

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In 1836, Mercier first called attention to ulcerations which develop in the floor of the loculate bladder, and similar cases were reported by Tait in 1870. In 1900, Fenwick compared chronic, solitary simple ulcer of the bladder with ulcer of the stomach but Rakitansky and Tait previously had made this comparison. In 1914, Hunner reported eight cases of "a rare type of bladder ulcer in women." He described the symptoms and the pathologic appearance of the lesion and suggested that pericystitis might be the cause of a primary lesion of which the bladder ulcer was a secondary manifestation. Other cases have been reported by Nitze, Kretschmer, Bumpus and Meisser, Hinman, Furness, Keene, Peterson and Hager, Folsom, Higgins, Eisenstaedt and McDougall, and Meads.

Various authors have referred to this clinical entity described by Hunner and designated by many as Hunner ulcer of the bladder, as interstitial cystitis, elusive ulcer, pan-mural cystitis and submucous fibrosis.

*Etiology:* Besides having been the first clearly to define this lesion, Hunner was also the first to recognize a possible relationship between focal infection and the ulcer. It is now a generally accepted fact that infection in the teeth, tonsils, adenoids or nasal sinuses may be carried to the bladder by the hematogenous route. In 1931, Meisser and Bumpus added further proof to the theory that infection is an etiologic factor when, by experimental research, they demonstrated that certain streptococci which were present in various foci of infection had a selective affinity for the urinary tract and produced submucous ulcers and other infections of the urinary bladder. Kretschmer, however, found no infection present in the cervix or adnexae, and in his fourteen cases of elusive ulcer of the bladder he consequently disclaimed the theory that the disease should occur more frequently in women because of pelvic infections. Keene, after eradicating all foci of infection in his twenty-five cases, suggested that these ulcers might be due to a hematogenous infection or that they might be secondary to an inflammatory non-tuberculous lesion in the upper urinary tract. In this series, foci of infection were present in twenty-nine cases.

*Incidence:* Hunner stressed the fact that this disease occurs more frequently in women than in men, and this has been verified by most writers on the subject. In our series, forty-one cases occurred

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in women and four in men. The youngest patient was eighteen years of age, the oldest seventy-seven. The average age of these patients was forty-eight years.

*Symptoms:* Both diurnal and nocturnal frequency of urination is the complaint first mentioned by the majority of patients suffering from Hunner ulcer of the bladder, and this frequency is almost clocklike in regularity according to the experience of Furness. Forty-two of our 45 patients mentioned this symptom. Pain is the next most frequently mentioned symptom and it usually occurs in the suprapubic region. It is experienced, in most instances, when the bladder is distended and generally it can be reproduced by touching the lesion with the tip of the ureteral catheter. The most usual combination of symptoms in our series was frequency accompanied by dysuria and suprapubic pain. The pain was present in one or both sides of the lower abdomen, one or both thighs, the vagina, the rectum, the back and the perineum. Other urinary symptoms which are found occasionally are hematuria, urgency, burning and tenderness. Backache and symptoms referable to the gastro-intestinal tract were frequently mentioned. In six of these cases there was aggravation of the symptoms referable to the bladder before menstruation.

The average duration of symptoms in these cases was four and one-half years; the shortest duration was one month and the longest twenty years.

The urine is clear and sparkling in the majority of cases and this was true in thirty-three of the cases in this series. Occasionally a few red and white cells are present.

*Diagnosis* usually is made by presumptive evidence secured by a carefully elicited history and by cystoscopic examination. Because of the reduced capacity of the bladder which often is only 60 or 90 c.c., the characteristic appearance of the lesion may not be recognized. Usually the ulcers are small; they may be multiple and they are found most frequently in the apex or dome of the bladder. In this series of cases, the lesion was single in thirty-one instances and multiple in fourteen. Usually the ulcer is seen to be more or less circular in form, but occasionally it may be linear, as the result of overdistention of the bladder, with a resultant cracking of the mucosa over the rigid area of the localized intramural cystitis. In cases, in which the lesion tends to be circumscribed, there is little or no increased thickening of the bladder wall at the point of involvement. If, however, the inflammatory process has extended into all the coats of the bladder and the muscularis has been invaded, there may be considerable thickening at the site of the lesion. The bases

of the ulcers are quite red and at times they have the appearance of having little bubbles of air attached to them. They may be covered by a small number of fibers and occasionally small blood vessels may radiate from the ulcer. According to Higgins they frequently have the appearance of a strawberry which has been crushed against the bladder wall.

*Differential diagnosis:* The differential diagnosis usually is not difficult. The lesion may be confused with a simple ulceration or an ulceration of tuberculous origin, especially if the objective urinary findings are not distinctive. A simple ulcer rarely is found in the bladder and tuberculosis and malignancy should be considered before such a diagnosis is made. General examination and serologic studies should always be made to determine whether or not syphilis may be present. Other conditions which should be considered before making a diagnosis are chronic cystitis, bladder inflammation associated with bullous edema, and lesions due to the application of radium to malignant conditions of the vagina and cervix.

*Treatment and results:* For years there has been considerable discussion regarding the most satisfactory method of treating Hunner ulcer of the bladder. In all cases at the Cleveland Clinic a diligent search for foci of infection is instituted and such foci are eradicated when found. In twenty-nine cases, foci of infection were found in the teeth and tonsils, and a dormant renal infection was present in twelve cases.

Many writers advocate a wide resection of the ulcer including a considerable portion of the bladder. Others, however, have abandoned excision of the ulcer and now use electro-coagulation which, in some instances, has yielded remarkable results. Other methods of treatment which have been reported are periodic over-distention of the bladder, transurethral electrocoagulation, presacral nerve resection in selected cases, and transplantation of the ureters into the rectosigmoid with cystectomy. Most writers now agree, however, that conservative methods of treatment such as eradication of infection, bladder irrigation, overdistention of the bladder or electro-coagulation should be employed first.

Fulguration which usually was done under anesthesia was the method of treatment in thirty-six cases in this series. Of these thirty-six cases, nine were definitely cured, seventeen were relieved temporarily or improved, four became worse and radical procedures were advised, and six patients failed to return for further observation or treatment. In all these cases, this treatment was preceded by one or more irrigations of the bladder to determine whether irrigation was of any value in each individual case. Of three patients

treated with irrigation and overdistention, a cure was effected in one instance while one patient became worse and the other received no relief. In six cases unsatisfactory results were noted after the use of irrigation with silver nitrate solution.

Two patients were completely cured after the eradication of chronic prostatitis. Only slight temporary relief was noted by one patient after treatment with ultra-violet light which was applied directly by means of a quartz tube conductor. One patient was cured after the instillation of gomenol and argyrol.

Radical treatment was instituted in the remaining five cases. In three instances a resection of the involved area of the bladder was performed and the patients remained free from symptoms for a period of over two years. However, they then complained of some bladder discomfort which disappeared after irrigations. In two cases in which a resection of the presacral nerve had been performed previously without relief of symptoms, the ureters were transplanted into the rectum and a cystectomy was performed with complete relief of symptoms.

#### SUMMARY AND CONCLUSIONS

1. Hunner ulcer of the bladder occurs more frequently in women than in men. In ninety per cent of a series of forty-five cases in the Cleveland Clinic the disease occurred in women.

2. The disease occurs most frequently in late middle life. The majority of patients seen in this series were in the fifth decade of life.

3. Focal infection is an important etiologic factor. All foci of infection should be eliminated as a routine procedure in the treatment of this disease.

4. Diurnal and nocturnal frequency of urination associated with dysuria and suprapubic pain constitute a combination of symptoms found in over 90 per cent of the cases.

5. Hunner ulcer usually produces a diminished capacity of the bladder. The average bladder capacity in this series of cases was 135 c.c.

6. Single lesions of the bladder were seen more frequently than multiple lesions in this series of cases. (69 per cent were single; 31 per cent were multiple).

7. Conservative treatment is the method of choice which should be followed by a radical operation only as a last resort.