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ASSESSMENT OF PATIENT OUTCOMES FOLLOWING SUBMUCOSAL INJECTION OF TRIAMCINOLONE FOR TREATMENT OF HUNNER'S ULCER SUBTYPE INTERSTITIAL CYSTITIS

Hypothesis / aims of study

More than a century has passed since Max Nitze's cystoscopic description of a lesion in the bladder associated with profound, intractable urinary complaints. As the microscopic appearance was of inflammatory cells extending into the submucosa, Nitze termed the disorder "Cystitis Parenchymatosa," and described it as a chronic bladder inflammation of unknown cause and no effective treatment. Subsequently termed Interstitial Cystitis (IC), the presentation of disabling symptoms of urgency, frequency, nocturia, and varying degrees of suprapubic discomfort, is one that the urologists will encounter not infrequently [1]. IC is now recognized as a spectrum of diseases known as Interstitial Cystitis/Painful Bladder Syndrome (IC/PBS) characterized by symptoms of bladder pain, urgency, frequency, and nocturia in the presence of sterile urine cultures [2,3]. The lesion described by Nitze in 1907 and now referred to as Hunner's ulcer subtype IC is diagnosed by the cystoscopic finding of denuded epithelium, ulceration, and submucosal inflammation. It is reported to occur in 5-20% of patients diagnosed with IC. The pathogenesis of IC is still not clearly understood, and treatment options for patients with IC have varying degrees of efficacy. The purpose of this article is to present our experience with treating individuals with Hunner's ulcer subtype IC using submucosal injection of triamcinolone.

Study design, materials and methods

Prospective analysis of patients presenting with Hunner's ulcer subtype IC was performed between November 2006 to April 2008. All patients underwent flexible cystoscopy and biopsy confirming the presence of Hunner's ulcer(s). Under general anesthesia, 10 ml of triamcinolone acetonide (40 mg/ml) was injected in 0.5 ml aliquots into the submucosal space of the center and periphery of ulcer(s) using an endoscopic needle. Patient symptoms and quality of life was assessed using two validated questionnaires, the International Prostate Symptom Score (IPSS) and the Pelvic Pain and Urgency/Frequency (PUF) symptom scale. Each questionnaire was administered prior to therapy and four weeks postoperatively. The postoperative interview included the Patient Global Impression of Change (PGIC).

Results

30 patients with Hunner's ulcer subtype IC underwent endoscopic submucosal injection of triamcinolone. The mean preoperative and postoperative IPSS were 21.1 and 11.3, respectively. The mean preoperative and postoperative PUF scores were 20.0 and 11.0, respectively. PGIC assessment revealed 21 of 30 patients (70%) very much improved. No perioperative complications were noted.

n= 30	**IPSS**	**PUF-symptom**	**PUF-bother**
Pre-injection	21.1	13.4	6.6
Post-injection	11.3	7.8	3.2

Table 1: Mean scores from validated questionnaire assessment indicating clinically significant improvement following submucosal injection of triamcinolone.

Question		Mean Pre-procedure Score	Mean Post-procedure Score	p-value
IPSS	Incomplete Emptying	2.8	1.2	0.0001
	Frequency	4.0	2.0	<0.0001
	Intermittenc	2.1	0.9	0.0018
	Urgency	3.5	1.6	0.0001
	Weak Stream	2.4	1.6	0.0287
	Nocturia	3.6	2.9	0.0055
	QOL	5.0	1.6	<0.0001
	Total Score	20.2	10.4	<0.0001
PUF	Daytime Voids	1.6	0.7	0.0003
	Nighttime Voids	3.5	2.6	0.0004
	Nighttime Voids Bothersome	1.7	1.0	0.0018
	Symptoms During Sex	1.7	1.1	n/a
	Avoid Sex	1.1	0.6	n/a
	Pain in Bladder, Pelvis	1.8	1.0	0.0017
	Pain Scale	2.2	1.0	<0.0001
	Bother Scale	2.0	0.7	<0.0001
	Urgency after Voiding	1.2	0.3	0.0007
	Urgency Scale	2.2	1.3	<0.0001
	Bother Scale	2.0	1.1	0.0003
	Total Pain Score	13.4	7.8	<0.0001
	Total Bother Score	6.6	3.2	<0.0001
	Total PUF Score	20.0	11.0	<0.0001

Table 2: Mean pre-procedure and post-procedure scores for individual questionnaire items and Wilcoxon rank-sum analysis of cohort responses.

Interpretation of results

In our practice, the majority of patients with IC are referred by other providers due to failure to achieve satisfactory control of symptoms using standard interventions. The Hunner's ulcer subtype makes up a significant proportion of these patients, especially in the older female patient, and pain is the most bothersome component. The strengths of our study include the prospective nature of the data collection and the objective evaluation of symptoms using validated questionnaires. Although not validated for IC patients, we chose to include the IPSS questionnaire in our female cohort because it was readily available in our clinic, easy to understand and administer, and the components of the questionnaire focused upon urinary symptoms common to IC patients as well. One potential weakness of this study is the relatively short follow-up period. Although the majority of patients continued to have good symptom control, 2 patients required repeat injection during the study period indicating the duration of efficacy of submucosal triamcinolone to be at least 7 months. We expect a one year response in terms of symptom relief for most patients based upon preliminary data, at which time repeat injections are given with similar response. Our cohort will continue to be evaluated periodically to better assess this issue. Our work does represent the first report of local management of Hunner's ulcer subtype IC utilizing triamcinolone injection into the ulcer with objective data confirming symptomatic control and improved quality of life in a population with a difficult disease process. Interstitial cystitis is a complex disease and a diagnosis with multiple exclusion criteria, and one must be vigilant to rule out potentially life threatening conditions such as carcinoma in situ. Once this has been accomplished, the goal of the therapeutic intervention should be to maximize efficacy while minimizing adverse events and morbidity of the procedure. No perioperative or late complications were noted among our patient population.

Concluding message

We believe our experience with the management of Hunner's ulcer IC using submucosal injection of triamcinolone illustrates a novel approach to a disease that is often refractory to standard medical therapies for nonulcerative IC. This treatment is well tolerated and offers clinically and statistically significant improvement in symptoms and quality of life for a select group of IC sufferers based on responses from validated questionnaires administered before and after therapy.

Keywords

Painful Bladder Syndrome/IC

References

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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**