Outcomes after chronic isolated epididymal pain

A retrospective study

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Cite as: Chung D, Dua S, Bal D, et al. Outcomes after chronic isolated epididymal pain: A retrospective study. *Can Urol Assoc J* 2024;18(6):165-8. http://dx.doi.org/10.5489/cuaj.8701

Published online February 15, 2024

ABSTRACT

INTRODUCTION: Despite being a commonly encountered urologic condition, there remains a paucity of understanding and literature on the management and natural history of isolated epididymal pain. Typically, patients who do not respond to conservative management undergo an epididymectomy; however, the literature on its efficacy is also scarce, with success rates varying from 10–90%. Our goal was to better describe the etiology and natural history of isolated epididymal pain and to describe the rates of success associated with epididymectomy.

METHODS: A retrospective, case-control study was conducted at the Manitoba Men's Health Clinic, with the approval of the University of Manitoba Research Ethics Board. All patients presenting with chronic epididymitis, defined as discomfort or pain localized to the epididymis for at least three months, were identified. Information regarding patient demographics, past medical and surgical history, duration of pain, localization of pain, findings on previous ultrasounds, prior conservative therapies trialed, and response rates, as well as response rates to surgical therapy were collected.

RESULTS: From April 2022 to April 2023, a total of 275 patients with chronic orchialgia were identified; among them, 74 patients presented with chronic isolated epididymal pain. On average, 22.9% of patients experienced symptoms for 3–6 months, 10% for 6–12 months, and 67.1% for over 12 months; 13.5% (n=10) had associated ejaculatory pain, 8.1% (n=6) had lower urinary tract symptoms, and 4.1% (n=3) had erectile dysfunction. Ultrasound findings were observed in 68.9% of patients, with 31.1% having an epididymal cyst, 27.1% having a varicocele, 5.4% having a spermatocele, and 4.1% having a hydrocele. Among those who underwent conservative therapy, only 36.2% of patients reported a positive response. Surgical intervention was performed on 23 patients, including 16 who underwent epididymectomy, three who underwent cord denervation, and two who underwent vasovasostomy and spermatocelectomy each. Most (81.3%, n=13) patients who underwent epididymectomy had a positive response to the surgical intervention, defined as no pain on followup, while all patients undergoing other surgical interventions experienced a positive response.

CONCLUSIONS: Chronic epididymal pain is a condition with limited data surrounding its management. Prior to referral, a large proportion of patients did not undergo any conservative treatment, and of those that did, there was limited response. For those who underwent surgical intervention, all were pain-free on followup, except three patients who underwent epididymectomy.

INTRODUCTION

Chronic orchialgia or testicular pain syndrome is a poorly understood diagnosis that consists of pain originating from the scrotal contents, including the testicles, epididymis, vas deferens, or referred pain.[1] Similar to other chronic pain syndromes, the current paradigm for treating chronic orchialgia follows a biopsychosocial model. Within this umbrella, patients may present with chronic isolated epididymal pain (CIEP), with pain localized to their epididymis. This condition can be distressing for patients, who may experience debilitating pain associated with depression and anxiety, as well as a lower quality of life.[2] Additionally, this can be a significant challenge for the treating urologist, as we have a very poor understanding of isolated epididymal pain despite it being an issue that is seen in every urologic practice.[3] A small case-control study performed in 2002 attempted to characterize the etiology and pathogenesis of chronic epididymitis; however, since that time, there has been very little advancements in our understanding of this condition.[4,5]

For patients with pain localized to the epididymis and/or those who have failed conservative management, epididymectomy may be indicated. The efficacy of epididymectomy from chronic pain varies significantly in the literature, ranging from 10 to >90%,[5,6] with higher success rates seen for patients with post-vasectomy pain syndrome or a palpable epididymal pathology.[7] Again, the current literature that exists for the efficacy of epididymectomy is limited.

Chronic epididymitis/chronic orchialgia can be associated with both significant physical and psychological bother for affected patients. It can often be debilitating and associated with depression and anxiety, as well as decreased quality of life.[8] Further understanding of the disease would help urologists effectively treat chronic epididymitis in an evidence-based fashion. As such, our objective was to perform a retrospective, case-control study to describe the etiology and natural history of CIEP. The overall goal was to analyze how patients with this condition are managed and the outcomes associated with epididymectomy for this population.

METHODS

A retrospective, single-institutional cohort study was conducted at the Manitoba Men's Health Clinic in Winnipeg, Manitoba, to evaluate the nature of CIEP. Institutional review board approval was received (HS26256). All men diagnosed with chronic epididymitis (discomfort and/or pain that occurs for at least three months in duration) were identified.

The data collected for this survey included patient demographics, past medical history, duration of pain, localization of pain, ultrasound findings, history of previous vasectomy, prior therapy trialed, response rate to conservative therapy, and response rate to surgical therapy.

Descriptive statistics were performed using SPSS. The association between previous history of vasectomy and rates of success with epididymectomy was analyzed. All epididymectomies included were performed via the scrotal approach under local antiesthetic. Statistics were performed using the Pearson Chi-squared method.

RESULTS

From April 2022 to April 2023, we identified 275 patients with chronic orchialgia. Of these patients, 74 met the criteria for CIEP and were included in the study.

Demographics of the selected patients can be seen in Table 1. The mean age of the study participants was 48.2 (standard deviation [SD] 14.1) years. Most of these patients (67.1%) had experienced symptoms for over 12 months, 22.9% with symptoms for 3–6 months, and 10% for 6–12 months. Of the 74 patients, 56 (75.7%) presented with unilateral epididymal pain, with 25 (33.8%) on the right side and 31 (41.9%) on the left side. The remaining 18 (24.3%) experienced bilateral epididymal pain. Notably, only four patients (5.4%) reported a history of scrotal trauma, while 28 patients (37.8%) had previously undergone a vasectomy.

Among included patients, associated symptoms included erectile dysfunction (n=3), lower urinary tract symptoms (n=6), and ejaculatory pain (n=10). Of note, comorbid anxiety or depression was seen in seven patients (9.5%).

Prior to consultation, 34 patients (45.9%) had received non-surgical therapy, including antibiotics (n=16), non-steroidal anti-inflammatory drugs (NSAIDs) (n=21), pregabalin (n=1), or conservative measures, such as ice packs (n=1) and scrotal slings (n=1). A total of 47 patients (63.5%) underwent medical therapy, which included a six-week course of antibiotics with a fluoroquinolone (n=43), NSAIDs (n=9), and pelvic floor physiotherapy (n=1). Seventeen (39.5%) patients reported a positive response to the therapy trialed after consultation.

Prior to surgical intervention, investigations included urine cultures, which yielded positive results in three patients (4.1%). Additionally, scrotal ultrasounds were performed for all patients; the findings are presented in Table 1. Of the 74 patients, 51 (68.9%) had identifiable scrotal pathology on ultrasound, with 23 epididymal cysts, 20 varicoceles, four spermatoceles, three hydroceles, one hernia, one testicular mass, and one instance of testicular microcalcifications identified.

Table 2 displays surgical interventions and response rates for the 23 patients who underwent surgery. Epididymectomy was the most common procedure and was performed in 16 patients. Of patient that underwent epididymectomy, patients with previous history of vasectomy were significantly more likely to be pain-free following epididymectomy than patients without history of vasectomy (100% vs. 60%, p=0.025). Other procedures included spermatic cord denervation, vasovasostomy, and spermatocelectomy. The overall pain-free rate after surgery was 20 of 23 patients (87.0%).

DISCUSSION

Although CIEP is a common consultation seen in every urologist's office, there remains limited data around its etiology, epidemiology, and treatment outcomes. Aside from the work by Nickel et al, there have been limited attempts to further understand this disease process. The goal of this study was to further understand isolated epididymal pain with a retrospective study conducted at a specialized men's health clinic to further contribute to the limited body of literature surrounding its management.

Current estimates of chronic scrotal pain range from 0.4–4.75%;[1-3] however, there is no accepted prevalence for CIEP. A study from 1966 looking at incidence of chronic epididymitis in 610 patients showed 14.8% of these patients suffered from this pathology.[4] There remains a lack of studies reporting frequency of CIEP in the general population; however, from our data, it does appear to be a common condition, with approximately

Table 1. Demographic data of patient population studied

Age (mean years, SD)	48.2, 14.1
Duration of symptoms, n (%)	
3–6 months	16 (22.9%)
6–12 months	7 (10%)
12 months or more	47 (67.1%)
Unilateral, n (%)	56 (75.7%)
Left-sided	31 (41.9%)
Right-sided	25 (33.7%)
Bilateral, n (%)	18 (24.3%)
History of vasectomy, n (%)	28 (37.8%)
History of trauma, n (%)	4 (5.4%)
Negative scrotal ultrasound, n (%)	23 (31.1%)
Positive scrotal ultrasound, n (%)	51 (68.9%)
Epididymal cyst, n	23
Varicocele, n	20
Spermatocele, n	4
Hydrocele, n	3
Hernia, n	1
Testicular microcalcifications, n	1
Testicular mass, n	1
Therapy trialed prior to consultation, n (%)	34 (45.9%)
Antibiotics, n	16
NSAIDs, n	21
Pregabalin, n	1
Ice packs, n	1
Scrotal sling, n	1
Therapy trialed after consultation, n (%)	47 (63.5%)
Antibiotics, n	43
NSAIDs, n	9
Pelvic floor physiotherapy, n	1

NSAIDs: non-steroidal anti-inflammatory drugs; SD: standard deviation.

one-third of all patient's referred for chronic orchalgia having pain localized to the epididymis.

Antibiotics were the most common medical therapy trialed prior to consultation; however, surprisingly, less than one-third of patients were not started on any medical therapy despite significant and prolonged

Table 2. Surgical interventions and response rates for the 23 patients who underwent surgery

Surgical intervention	Performed (n)	Positive response, n (%)
Epididymectomy	16	13 (81.3%)
Spermatic cord denervation	3	2 (100%)
Vasovasostomy	2	2 (100%)
Spermatocelectomy	2	2 (100%)
Total	23	20 (87.0%)

symptoms. The treatment choices used in the treatment of chronic epididymitis are similar to what was seen in a previous case-control study, where antibiotics and NSAIDs were the most common medications trialed.[5] Among these patients, only 36.2% reported a positive response. Although it is intuitive to treat with antibiotics and NSAIDs when infectious and inflammatory etiologies are felt to cause chronic epididymitis, very little is known regarding the utility and efficacy of medical therapy in this patient population. A case series looking at patients with epididymal pain >6 weeks treated with antibiotics and cessation of strenuous activity demonstrated that all 44 patients showed resolution of their symptoms, albeit in a patient population with normal scrotal ultrasounds.

Most (81.3%, n=13) patients who underwent epididymectomy had a positive response, defined as no pain at followup. Patients with previous history of vasectomy were more likely to be pain-free following epididymectomy. The role and efficacy of epididymectomy for treatment of chronic epididymitis has been studied in multiple small series. Hori et al demonstrated overall satisfaction rates for epididymectomy in chronic orchalgia patients, with rates varying from 62.5–93% depending on the etiology of the epididymal pain.[6] There is evidence that higher treatment satisfaction can be anticipated in patients with pain secondary to epididymal cyst vs. epididymalgia, as seen in a series of 27 men.[7] Overall, epididymectomy does appear to be a valid option for patients with epididymal pain, as was seen in our cohort. Although associated with good long-term outcomes, poor outcomes were seen in a study by West et al in patients with atypical symptoms, erectile dysfunction, and normal ultrasound findings.[8]

Given the existing literature and the findings of our study, we present the treatment algorithm that is followed at our institution for the treatment of chronic isolated epididymal pain (Figure 1). In our study population, we found both epididymectomy and vasovasostomy to be effective in treating chronic pain in patients with prior vasectomy. Patients were counselled on

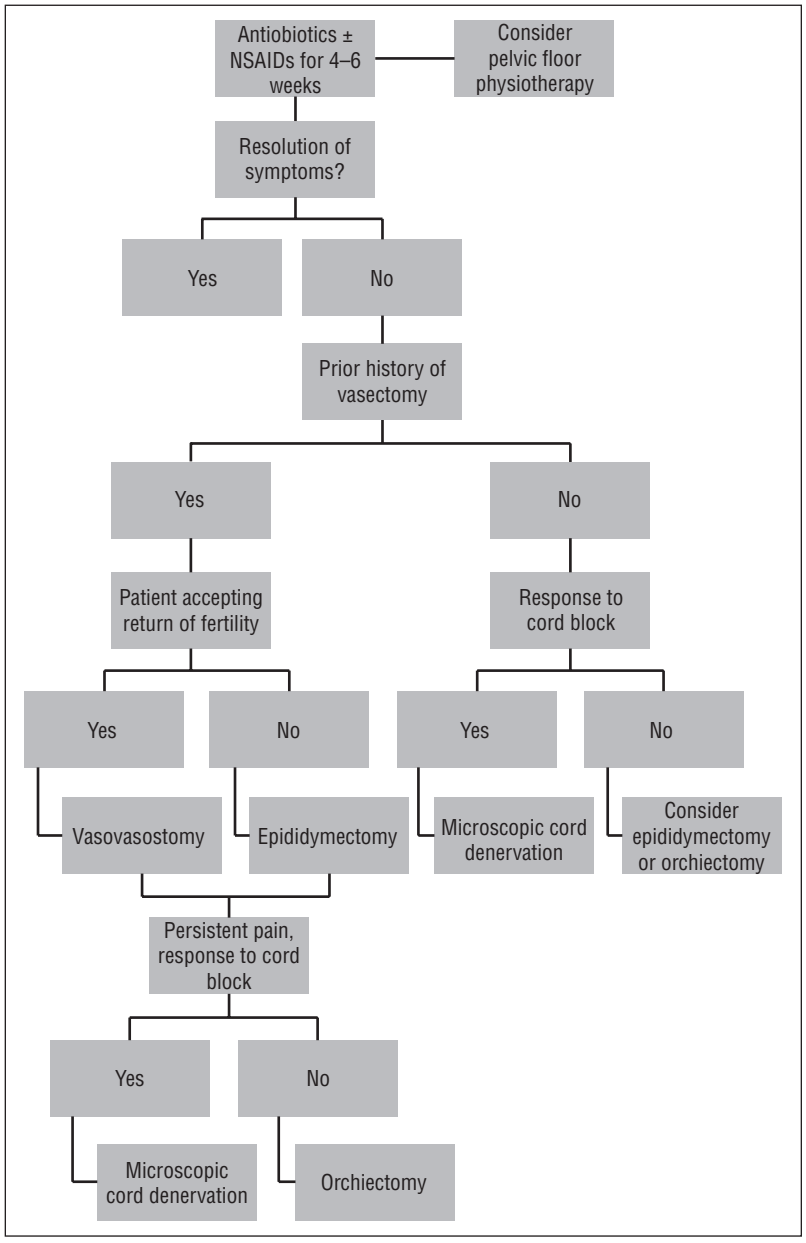

Figure 1. Our institutional treatment algorithm for chronic isolated epididymal pain. NSAIDs: non-steroidal anti-inflammatory drugs.

choice of surgical procedure depending on whether they were willing to accept a return to fertility and need for alternate birth control strategies.

Limitations

Due to the retrospective nature of this study, our study inherently has limitations attributable to its design. Additionally given the retrospective nature, we were unable to provide objective measurements on degree of pain with validated tools, such as the Visual Analogue Scale pain score. Although it appears that CIEP accounts for almost a third of all chronic orchalgia consults received at a single institution, no inferences can be made regarding its incidence in the general population. Improvement in symptoms with treatment (medical or surgery) was reported from subjective answers extracted from the charts. A validated questionnaire was proposed by Nickel et al in the form of the Chronic Epididymal Pain Score Index (CESI). Future studies assessing the efficacy of treatments for this condition using CESI may be more effective in accurately characterizing improvement of symptoms with intervention.

CONCLUSIONS

At a single institution, CIEP consists up of approximately one-third of all chronic orchialgia consultations. Common etiologies include epididymal cyst and prior vasectomy. Only 36.2% of patients show improvement in symptoms with medical therapy. Epididymectomy appears to be a viable treatment choice in patients with isolated epididymal pain, with 81.3% demonstrating a positive response; however, further research is required to add to our understanding of the etiology and natural history of CIEP. Future prospective studies evaluating efficacy of treatments with the use of standardized symptom scores are required to best guide treatment decisions in clinical practice.

COMPETING INTERESTS: The authors do not report any competing personal or financial interests related to this work.

This paper has been peer-reviewed.

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