

**Outcomes after chronic isolated epididymal pain: A retrospective study**David Chung<sup>1</sup>, Suvig Dua<sup>2</sup>, Dhiraj Bal<sup>2</sup>, Harliv Dhillon<sup>3</sup> Premal Patel<sup>1</sup><sup>1</sup>Section of Urology, Department of Surgery, University of Manitoba, Winnipeg, MB, Canada;<sup>2</sup>Max Rady College of Medicine, University of Manitoba, Winnipeg, MB, Canada; <sup>3</sup>Men's Health Clinic, Winnipeg, MB, Canada**Cite as:** Chung D, Dua S, Bal D, et al. Outcomes after chronic isolated epididymal pain: A retrospective study. *Can Urol Assoc J* 2024 February 15; Epub ahead of print.<http://dx.doi.org/10.5489/cuaj.8701>

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**ABSTRACT**

**Introduction:** Chronic epididymitis imposes significant physical and psychosocial distress on affected patients. Despite being a commonly encountered urologic condition, there remains a paucity of understanding and literature surrounding 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 widely from 10–90% in existing studies. Our goal was to better describe the etiology, and natural history of isolated epididymal pain. Furthermore, we aimed 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

**KEY MESSAGES**

- At a single institution, CIEP consists up of approximately one-third of all chronic orchialgia consultations.
- Epididymectomy appears to be a viable treatment choice in patients with isolated epididymal pain, with 81.3% of patients demonstrating a positive response.
- Patients with prior vasectomy were more likely to respond positively to epididymectomy.

ultrasounds, prior conservative therapies trialed and response rates, as well as response rates to surgical therapy were collected.

**Results:** From April 2022 to 2023, a total of 275 patients with chronic orchialgia were identified, and among them, 74 patients specifically presented with chronic isolated epididymal pain. The average duration of symptoms was as follows: 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 an epididymectomy, three who underwent cord denervation, and two who underwent vasovasostomy and spermatocelectomy each. Most (81.3%, n=13) patients who underwent an 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.<sup>1</sup> 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, anxiety, as well as a lower quality of life.<sup>2</sup> 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 urology practice.<sup>3</sup> 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.<sup>4,5</sup>

For patients with pain localized to the epididymis and/or 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%<sup>5,6</sup>, with higher success rates

seen for patients with post vasectomy pain syndrome or a palpable epididymal pathology<sup>7</sup>. 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 be often debilitating and associated with depression, anxiety as well as decreased quality of life<sup>8</sup>. Further understanding of the disease would aid urologists in effectively treating chronic epididymitis in an evidence-based fashion. As such, the objective was to perform a retrospective case-control study to describe the etiology, and natural history of CIEP. The overall goal of this study is 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 3 months in duration) were identified.

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

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

## RESULTS

From April 2022 to April 2023, we identified a total of 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 years (standard deviation [SD] = 14.1). Most of these patients (67.1%) had experienced symptoms for over 12 months, 22.9% with symptoms for 3 to 6 months, and 10% for 6 to 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 4 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, co-morbid anxiety or depression was seen in 7 patients (9.5%).

Prior to consultation, 34 patients (45.9%) had received non-surgical therapy, including antibiotics (n=16), 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 6-week course of antibiotics with a fluoroquinolone (n=43), NSAIDs (n=9), and

pelvic floor physiotherapy (n=1). 17 (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 and the findings are presented in Table 1. Out 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 out 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%<sup>1-3</sup>, however there is no accepted prevalence for chronic isolated epididymal pain. A study from 1966 looking at incidence of chronic epididymitis in 610 patients admitted showed 14.8% of these patients suffered from this pathology<sup>4</sup>. 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 one third of all patient's referred from 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 symptoms. The treatment choices of primary care physician in treating chronic epididymitis are similar to what was seen in a previous case-control study, where antibiotics and NSAIDs were the most common medications trialed<sup>5</sup>. However, 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.

81.3% (n=13) of patients who underwent epididymectomy had a positive response as defined as no pain at follow up. 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 demonstrate overall satisfaction rates for epididymectomy in chronic scrotal patient with rates varying from 62.5-93%<sup>6</sup> depending on the etiology of the epididymal pain. There is evidence that higher treatment satisfaction can be anticipated in patients with pain secondary to epididymal cyst vs epididymalgia seen in a series of 27 men<sup>7</sup>. 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.<sup>8</sup> in patients with atypical symptoms, erectile dysfunction, and normal ultrasound findings. 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 as seen in 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 choice of surgical procedure depending on whether they were willing to accept a return to fertility and need for alternate birth control strategies.

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 subjective measurements on degree of pain with validated tools such as the VAS pain score. Although it appears that chronic isolated epididymal pain 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 chart. A validated questionnaire was proposed by Nickel et al. in the form of the CESI (Chronic epididymal pain score index). Future studies assessing the efficacy of treatments for this condition utilizing the 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 endorses improvement in symptoms with medical therapy. Epididymectomy appears to be a viable treatment choice in patients with isolated epididymal pain with 81.3% of patients 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 use of standardized symptom scores are required to best guide treatment decisions in clinical practice.

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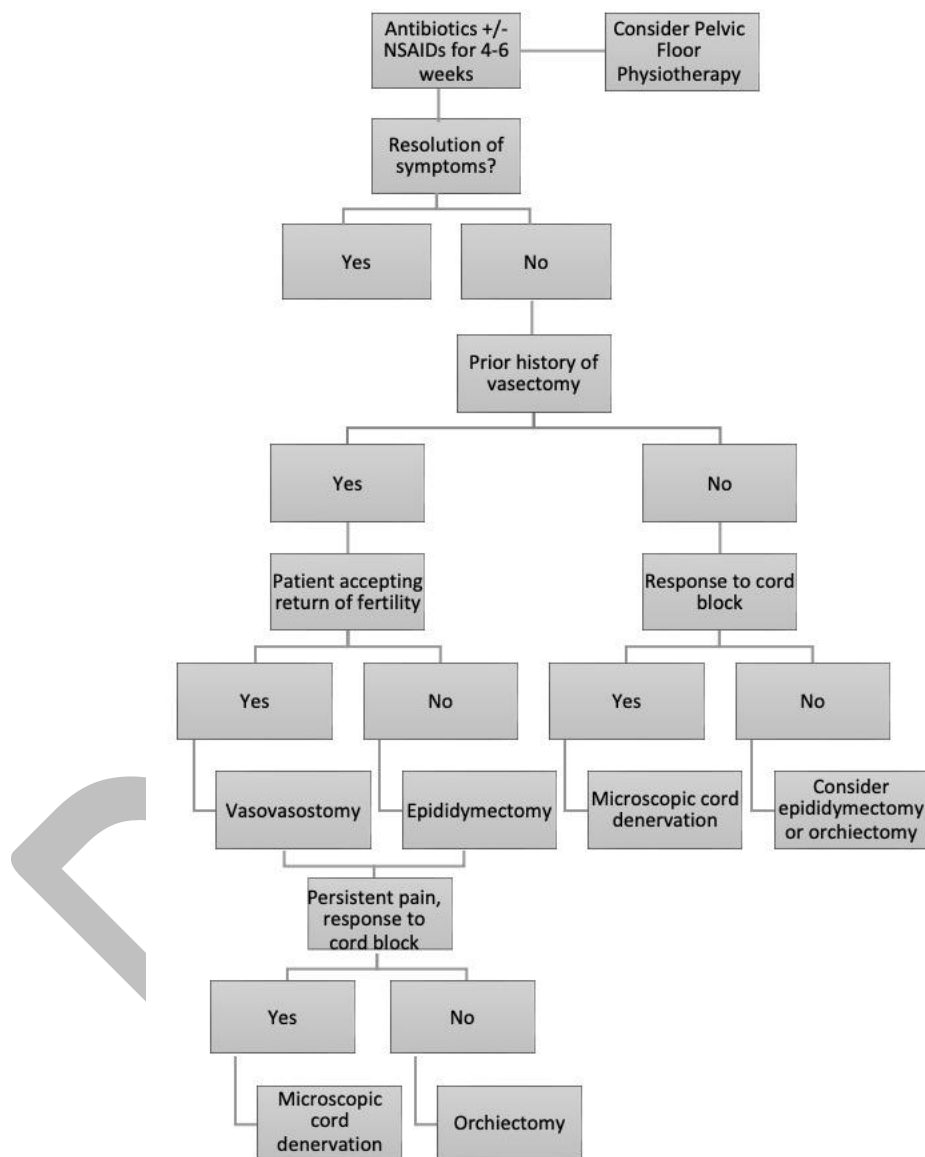
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FIGURES AND TABLES

Figure 1. Our institutional treatment algorithm for chronic isolated epididymal pain



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
Pelvis floor physiotherapy, n	1

NSAID: non-steroidal anti-inflammatory drug; SD: standard deviation.

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