Case Report / Olgu Sunumu

Chronic Orchalgia in Adolescence: A Literature-Based Evaluation of Followed Patients

Adölesanda Kronik Orkalji Hastası Takibi

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Abstract: Orchalgia is defined as testicular pain that occurs continuously or at variable times, may be unilateral or bilateral, restricts the daily activities of the individual, and lasts for more than 3 months. Infection or local pathology may not be present. We aimed to emphasize the treatment options in cases of chronic orchalgia according to the etiology of our 3 cases who presented to the pediatric urology outpatient clinic due to testicular pain in the adolescent age group.
Keywords: Kronik orkalji, Testiküler ağrı, İdiyopatik orkalji

Özet: Orkalji, sürekli veya değişken zamanlarda ortaya çıkan, tek veya çift taraflı olabilen, bireyin günlük aktivitelerini kısıtlayan ve 3 aydan uzun süren testis ağrısı olarak tanımlanır. Enfeksiyon veya lokal patoloji bulunmayabilir. Adölesan yaş grubunda testiste ağrı nedeniyle çocuk ürolojisi polikliniğine başvuran 3 olgumuzla etiyolojiye göre kronik orkalji olgularında tedavi seçeneklerini vurgulamayı amaçladık.
Anahtar Kelimeler: Kronik orkalji, Testiküler ağrı, İdiyopatik orkalji

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1. Introduction

Orchalgia is defined as testicular pain that occurs continuously or at variable times, may be unilateral or bilateral, restricts the daily activities of the individual, and lasts longer than 3 months (1). The character and localization of the pain may not be fully expressed by the patient. Infection or local pathology is often absent (2).

2. Cases

Three male patients aged 14, 16, and 17 years were evaluated in the emergency department due to testicular pain. The table below presents the side of the pain, hospitalization status, duration of the pain, number of admissions, and scrotal Doppler findings of the patients. Scrotal Doppler ultrasound (USG) showed normal testicular parenchymal blood supply. Urinary USG and uroflow were also normal. The patients history revealed that they had similar complaints before presenting to the emergency department. Chronic orchalgia was considered, and follow-up with anti-inflammatory drugs and antibiotic treatment was recommended. It was observed that the pain regressed during the follow-up.

Table 1. Follow-up of chronic orchalgia patients

	Age	Side	Duration of pain	Number of applications	Scrotal doppler	Pathological finding/ test	Hospitalisation	Treatment
Case 1	14	Bilateral	12 weeks	2 times	Normal	-	2 days	*NSAID + AB
Case 2	16	Left	14 weeks	3	Normal	-	-	*NSAID+ AB
Case 3	17	Right	13 weeks	2	Normal			*NSAID+A B

**NSAID: Non-steroidal anti-inflammatory drug*
AB: Antibiotic

3. Discussion

Factors such as epididymitis, psychogenic causes, unknown origins, trauma, tumors, orchitis/epididymo-orchitis, torsion, spermatocele, varicocele, hernia, hydrocele, and infection may contribute to the etiology of chronic orchalgia (3). Often, an etiological cause cannot be determined, leading to the condition being termed "idiopathic orchalgia" or "testicular pain syndrome".

During the patient history, inquire about the location, size, intensity, duration, type, spread, and activities that initiate or alleviate the pain. Additionally, record any previous surgeries (such as hernia repair, vasectomy, varicocelectomy, hydrocelectomy, etc.).

Local findings of orchitis, epididymitis, testicular tumors, intermittent torsion, hydrocele, epididymal cyst, varicocele, and inguinal hernia are looked for during physical examination. Additionally, examine for pathologies such as prostatitis is needed.

Routine laboratory investigations should include complete urinalysis and urine cultures, while differential diagnosis can be aided by uroflowmetry and cystourethroscopy.

Among imaging modalities, scrotal ultrasound (USG) is typically the first choice. A study in the literature found that scrotal USG detected testicular lesions in nearly 40% of cases of orchalgia lasting longer than two weeks without clinical findings. The specificity and sensitivity of USG were reported to be 70% and 90%, respectively (4).

Abdominal USG and CT scans are used to investigate intra-abdominal pathologies, urinary system stones, and bladder pathologies. Additionally, scrotal MRI is frequently employed for visualizing the scrotum, enabling the detection of masses that may not be apparent on USG. It also provides detailed structural information about testicular or extra testicular masses within the scrotum (5).

Medical treatment should be planned as the initial step. Nonsteroidal anti-inflammatory drugs (NSAIDs) and antibiotics are administered as first-line treatments for chronic orchalgia of undetermined cause, even in the absence of detected infection. In our patients, the pain subsided with NSAID and antibiotic treatment.

Tricyclic antidepressants and alpha-adrenergic receptor blockers are also utilized in the management of chronic orchalgia of unknown etiology. In cases of severe pain, stronger analgesics may be necessary. Pain management may involve a multidisciplinary team consisting of a urologist, psychologist, and algologist (3).

Endorphins and enkephalins are the primary neurotransmitters responsible for modulating pain signals between the peripheral nerve and the spinal cord. Transcutaneous electrical nerve stimulation (TENS) is employed to alleviate pain by enhancing the release of these neurotransmitters in the dorsal horn of the spinal cord. Several studies in the literature have reported successful outcomes with TENS in treating chronic orchalgia of unknown etiology (6).

Additionally, a study by Başal et al. utilized the pulsed radio-frequency denervation method in treating chronic orchalgia in 5 cases, monitoring the cases for an average of 20 months and reporting no complications.

In patients who do not respond to medical treatment, minimally invasive treatment options should be considered. Treatment options for orchalgia may include fine needle aspiration or enucleation from a cystic lesion, which could be the source of pain. Additionally, lowering the levels of tumor necrosis factor-alpha, interleukin 6, and interleukin 8, which are key pain mediators and are often increased in cystic lesions, may help alleviate symptoms (7).

Positive outcomes have been reported with the combination of local anesthetics and methylprednisolone in spermatic cord blocks. Yamamoto et al. found favorable results in patients who underwent spermatic cord block with 1% lidocaine + 1 ml methylprednisolone and bilateral pelvic plexus infiltration with 5 ml bupivacaine + methylprednisolone under TRUS guidance (8).

The impar ganglion is the final link of the paravertebral sympathetic chain. It is located on the anterior surface of the sacrum, in the retroperitoneal space, anterior to the sacrococcygeal junction-coccyx. It controls the pain sensation of the genital organs, the last part of the digestive tract, and the function of the blood vessels.

The block aims to deactivate the nerves of this overworked nerve bundle by numbing the ganglion with a local anesthetic. When this overwork is prevented by the block, there is a significant improvement in symptoms.

Surgical treatment options include denervation of the spermatic cord, which can now be performed as testicular microsurgical denervation using an operating microscope. Heidenreich et al. followed patients for an average of 31.5 months in a series of 35 cases and reported a complete response in 34 of 35 patients (96%). No complications were observed in any of the patients, and postoperative testicular atrophy or hydrocele was not reported (9).

Vasovasostomy or epididymovasostomy operations, as well as epididymectomy, are among the surgical interventions performed for chronic orchalgia. Orchiectomy is considered the last resort in cases where medical treatments, minimally invasive interventions, and microscopic spermatic cord denervation fail. A success rate of 75% is reported with orchiectomy for chronic orchalgia (10). However, Costabile et al. reported that pain persisted in 80% of patients after orchiectomy (11). Therefore, all patients

should be thoroughly informed about the possibility of phantom orchalgia or contralateral pain before undergoing the operation. In a study analyzing the method of orchiectomy, a success rate of 73% was reported with inguinal orchiectomy, while this rate was 55% with scrotal orchiectomy (10).

4. Conclusion

No etiology causing chronic testicular pain was found in our patients pain decreased with NSAID and antibiotic treatment and regressed with follow-up. However, this treatment may not always be sufficient to relieve pain. For this purpose, a comprehensive and detailed analysis of the patients history should be made, and in cases where the etiology of orchalgia is unknown, it is recommended to follow a gradual and systematic treatment approach. By adopting a step-by-step treatment plan and actively involving the patient in the decision-making process, we can increase the likelihood of successful outcomes. In this study, we aimed to evaluate various diagnostic, follow-up, and treatment approaches for our patients by referring to the existing literature.

Informed consent was obtained from the patients' families for the publication of this case, and the publication adheres to the ethical standards of our institution. The authors declare no conflict of interest related to the publication of this study, and no financial support was received.

REFERENCES

1. Davis BE, Noble MJ, Weigel JW, Foret JD, Mebust WK. Analysis and management of chronic testicular pain. J Urol 1990; 143: 936–939.
2. Engeler D (chairman), Baranowski AP, Elneil S, Hughes J, Messelink EJ, Oliveira P, van Ophoven A, Williams AC. EAU Guidelines on Chronic Pelvic Pain, 2012.
3. Kumar P, Mehta V, Nargund VH. Clinical management of chronic testicular pain. Urol Int 2010; 84(2):125-131.
4. Lau MWM, Taylor PM, Payne SR. The indications for scrotal ultrasound. Br J Radiol 1999; 72: 833–837.
5. Cramer BM, Schlegel EA, Thueroff JW. MR imaging in the differential diagnosis of scrotal and testicular disease. Radiographics 1991; 11: 9–21.
6. Macrae B. Pain—new thoughts on an old problem. Urology News 2000;4(5): 6–8.
7. Granitsiotisa P, Kirkb D. ChronicTesticular Pain: An Overview. European Urology 2004; 45:430–436.
8. Yamamoto M, Hibi H, Katsuno S, Miyake K. Management of chronic orchialgia of unknown etiology. Int. J Urol 1995; 2(1): 47–49.
9. Heidenreich A, Olbert P, Engelmann UH. Management of chronic testalgia by microsurgical testicular denervation. Eur Urol 2002, 41(4):392-397.
10. Davis BE, Noble MJ, Weigel JW, Foret JD, Mebust WK. Analysis and management of chronic testicular pain. J Urol 1990; 143: 936-939.
11. Costabile RA, Hahn M, McLeod DG. Chronic orchalgia in the pain prone patient: the clinical perspective. J Urol 1991; 146: 1571-1574.

Ethics

Informed Consent: The authors declared that informed consent form was signed by the patient.
Copyright Transfer Form: Copyright Transfer Form wassignedbytheauthors.
Peer-review: Internally peer-reviewed.
Authorship Contributions: Authorship Contributions: Concept: DD Design: DD Data Collection or Processing: DD, BT, Analysis or Interpretation: DD, BT Literature Search: DD, Writing: DD
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