Prikaz slučaja – Case Report
https://doi.org/10.46793/PP260217026K

PARATESTICULAR PSEUDOTUMOR IN AN ADOLESCENT PATIENT – A CASE REPORT

PARATESTIKULARNI PSEUDOTUMOR U ADOLESCENTOM UZRASTU – PRIKAZ SLUČAJA

Đorđe Komadina[1], Magdalena Savatijević[1,2], Saša Milivojević[1]
[1]Faculty of Medicine, University of Belgrade, Belgrade, Serbia
[2]University Children's Hospital, Belgrade, Serbia

ORCID iD: Đorđe Komadina https://orcid.org/0009-0007-2581-6929
Magdalena Savatijević https://orcid.org/0009-0000-1122-8463
Saša Milivojević https://orcid.org/0000-0002-4152-8165

Summary

Introduction: Paratesticular inflammatory and fibrous pseudotumors are rare benign lesions with unclear etiopathogenesis. They are considered to represent a reactive process associated with factors such as trauma and inflammatory conditions. Preoperative clinical and radiological differentiation of these benign paratesticular lesions from malignant tumors of this region remains extremely challenging. As a result, despite their benign nature, most of these lesions are treated by radical orchiectomy rather than testis-sparing surgery.

Case outline: We report the case of a 15-year-and-6-month-old adolescent hospitalized for diagnostic evaluation and treatment of a painful right scrotal mass measuring 5 × 4 cm. Laboratory findings revealed leukocytosis with neutrophilia, elevated inflammatory markers, and mildly increased neuron-specific enolase levels. Scrotal ultrasonography demonstrated a heterogeneous, highly vascularized paratesticular soft-tissue mass measuring 33 × 26 × 20 mm in the right hemiscrotum. Additional radiological evaluation failed to reliably exclude malignancy; therefore, a multidisciplinary decision was made to proceed with surgical treatment, and a right radical orchiectomy was performed. The definitive diagnosis was established by histopathological examination and corresponded to *epididymitis subacuta partim abscedens*.

Conclusion: Paratesticular pseudotumors represent a significant diagnostic challenge, particularly in the pediatric and adolescent population, primarily due to their rarity and clinical and radiological resemblance to malignant tumors of this region. The case highlights the importance of considering these benign entities in the differential diagnosis of paratesticular masses in order to avoid unnecessary radical surgical procedures whenever possible.

Keywords: paratesticular pseudotumor, adolescent, scrotal mass, radical orchiectomy.

Sažetak

Uvod: Paratestikularni inflamatorni i fibrozni pseudotumori predstavljaju retke benigne lezije, nejasne etiopatogeneze, a smatra se da nastaju kao posledica reaktivnog odgovora na različite nadražaje, uključujući povredu i zapaljenske procese. Preoperativna klinička i radiološka diferencijacija ovih benignih paratestikularnih lezija od malignih tumora ove regije izuzetno je otežana. Upravo zbog toga, i pored njihove benigne prirode većina ovih lezija leči se radikalnom orhiektomijom, umesto poštednom operacijom testisa.

Prikaz slučaja: Prikazan je slučaj adolescenta uzrasta 15 godina i 6 meseci hospitalizovanog zbog dijagnostike i lečenja bolne promene na desnoj strani skrotuma veličine 5x4 cm. Laboratorijske analize su pokazale leukocitozu sa neutrofilijom, povišene parametre inflamacije i blago povišene vrednosti neuron-specifične enolaze. Ultrazvučnim pregledom uočena je u desnom hemiskrotumu nehomogena izrazito vaskularizovana mekotkivna paratestikularna promena dimenzija 33x26x20 mm. Dodatna radiološka dijagnostika nije omogućila pouzdano isključenje maligniteta, zbog čega je konzilijarno doneta odluka o operativnom lečenju, odnosno indikovana je desna radikalna orhiektomija. Definitivna dijagnoza postavljena je nakon patohistološkog pregleda i odgovarala je *epididymitis subacuta partim abscedens*.

Zaključak: Paratestikularni pseudotumori predstavljaju dijagnostički izazov, naročito u pedijatrijskoj i adolescentnoj populaciji, pre svega zbog svoje retkosti i kliničkih i radioloških sličnosti sa malignim tumorima ove regije. Prikazani slučaj naglašava značaj razmatranja ovih benignih lezija u diferencijalnoj dijagnozi paratestikularnih masa, kako bi se, kada god je to moguće, izbegle nepotrebno radikalne hirurške procedure.

Ključne reči: paratestikularni pseudotumor, adolescent, skrotalna masa, radikalna orhiektomija.

INTRODUCTION

Paratesticular inflammatory and fibrous pseudotumors are rare benign lesions, accounting for approximately 6% of all paratesticular lesions (1,2). They most commonly occur in the second to fourth decades of life, but can be present at any age, including pediatric and adolescent patients (1,2).

Given their heterogeneous pathological substrate, these lesions include a wide spectrum of reactive changes described in the literature under different terms, including fibrous pseudotumor, pseudofibromatous periorchitis, and reactive periorchitis (4).

Preoperative clinical and radiological differentiation of these benign paratesticular lesions from malignant tumors of this region remains extremely challenging (2,5). Precisely because of this, despite their benign nature, most cases are treated with radical orchiectomy rather than testis-sparing surgery (2).

We present the case of an adolescent with a paratesticular inflammatory pseudotumor, which was clinically and radiologically suspicious for malignancy, while the definitive diagnosis was established by histopathological examination.

Korespondencija / Correspondence: Đorđe Komadina, Faculty of Medicine, University of Belgrade, Dr Subotića 8, 11000 Belgrade, Serbia
E-mail: djolekom@gmail.com | Primljen/Received: 17.2.2026 | Prihvaćen/Accepted: 25.3.2026

CASE PRESENTATION

A 15-year-and-6-month-old adolescent was hospitalized at the University Children's Hospital in Belgrade for further diagnostic evaluation and treatment of a previously observed right-sided scrotal mass. On admission, he was subfebrile (T 37 °C), with increased sweating. Palpation revealed soft, mobile and painless lymph nodes in the lower lateral third of the neck, with a maximum diameter of up to 1 cm, with no overlying skin changes. The spleen was palpable about 1 cm below the left costal margin (consistent with the asthenic constitution). Physical examination confirmed a painful mass in the right hemiscrotum, measuring 5 x 4 cm, without skin changes of this area. The right testicle was normally positioned within the hemiscrotum, with preserved morphological features, painless on palpation.

Laboratory Findings

Laboratory tests revealed leukocytosis (19 × 10^9/L) with neutrophilia (64%), elevated inflammatory markers (C-reactive protein 31 mg/L), as well as elevated values of fibrinogen (7.3 g/L) and D-dimer (350 ng/mL). Tumor markers, including β-human chorionic gonadotropin (β-hCG) (<2.30 IU/L) and alpha-fetoprotein (AFP) (<2.0 ng/mL), were within reference ranges, while neuron-specific enolase (NSE) was mildly elevated (25.5 ng/mL). Other laboratory parameters were within normal limits.

Ultrasound Findings

The right testicle was located in the right hemiscrotum, relatively homogeneous in echotexture, with preserved vascularization, measuring 44 x 33 x 26 mm. A small reactive hydrocele was present on the right side. The spermatic cord appeared morphologically altered with prominent elongated and serpiginous blood vessels, wall thickness 1.6 mm, total transverse diameter up to 5.5 mm, with a lumen diameter of 3 mm. These vessels appeared to merge with a heterogeneous, highly vascularized paratesticular soft-tissue mass measuring approximately 33 × 26 × 20 mm. The right epididymis in the caudal part was homogeneous, with preserved vascularization; cranially, it could not be clearly distinguished from the described change. The left testicle was in the left hemiscrotum, homogeneous in echotexture, with preserved vascularization, measuring 40 x 32 x 20 mm. In the head of the left epididymis there was noted a cyst with a diameter of 2 mm, while the remaining epididymal tissue appeared homogeneous with normal vascularization.

Additional Diagnostic Evaluation

In order to further assess the lesion, additional radiological evaluation was performed. Chest radiography revealed a discrete soft-tissue density with a convex lower margin merging with the pulmonary vascular pattern, which, according to the radiologist, could correspond to a projection artifact due to the rotation of the patient during imaging. Given the clinical suspicion of malignancy, another etiology could not be definitively excluded. For further evaluation of the described change, a thoracic computed tomography (CT) scan was performed, which showed a normal finding of the lung parenchyma and mediastinum, without intrapulmonary nodules, pathological masses or enlarged lymph nodes. A subcortical cyst with a diameter of 6 mm was incidentally noted on the body of the Th3 vertebra, without clinical significance. Abdominal ultrasound findings were within normal limits, with no evidence of regional lymphadenopathy or distant metastases.

Surgical Treatment

Due to the high suspicion of a malignant paratesticular lesion, it was decided to perform a right radical orchiectomy with removal of the tumor. The procedure was performed through an inguinal approach, with high ligation of the spermatic cord and removal of the lesion as a whole with the distal part of the cord. Inguinal canal reconstruction was performed according to the Ferrari technique. The operative course was uneventful, with adequate hemostasis and layered wound closure. The obtained surgical material was sent for histopathological analysis. The postoperative period was uneventful, without complications, and both clinical and local findings were normal.

Histopathological Findings

Macroscopic examination of the surgical specimen revealed a solid, yellowish-white lesion measuring 54 × 15 × 25 mm on the cut surface, which arcuately compressed the normal testicular tissue, without signs of infiltration.

In the sections taken from the spermatic cord, stromal edema with areas of recent hemorrhage was registered. Sections of the testicular parenchyma showed preserved architecture of the seminiferous tubules and interstitium. The epididymis was extensively infiltrated by a mixed inflammatory infiltrate composed predominantly of polymorphonuclear leukocytes, eosinophils, mononuclear leukocytes and foamy macrophages. Prominent fibrin deposition, zones of coagulation necrosis and recent hemorrhage were observed, with fo-

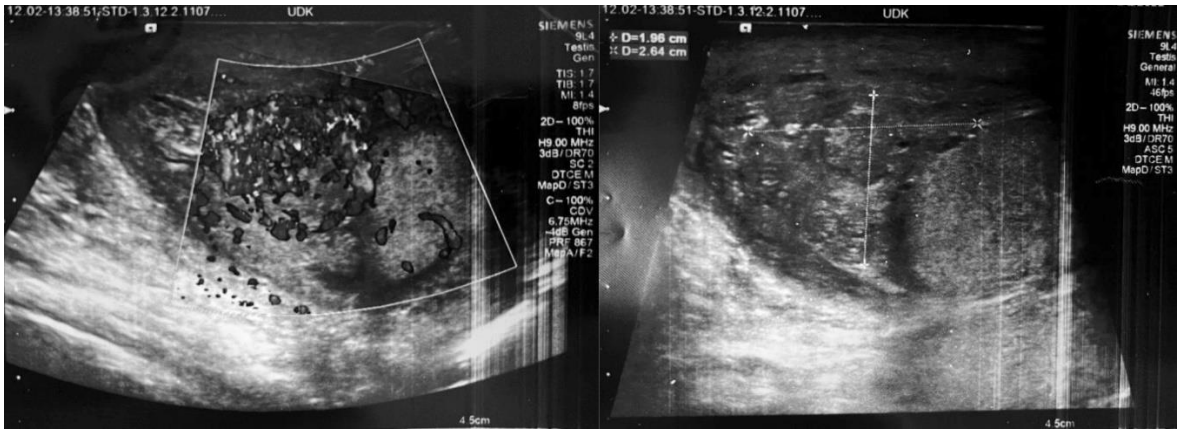

Figure 1 Ultrasonographic findings of a heterogeneous, well-vascularized paratesticular mass in the right hemiscrotum (personal archive)
Slika 1. Ultrazvučni nalaz heterogene, dobro vaskularizovane paratestikularne mase u desnom hemiskrotumu (lična arhiva)

cal microabscess formation. The tunica vaginalis was edematous and infiltrated by mixed inflammatory cells, with fibrin deposits present on the surface. Based on these findings, a diagnosis of epididymitis subacuta partim abscedens was established.

DISCUSSION

Paratesticular pseudotumors are rare benign lesions, with a limited number of reported cases in the population younger than 18 years. In the differential diagnosis of these lesions, it is necessary to consider other benign paratesticular lesions, such as adenomatoid tumors, hydrocele, leiomyoma, as well as malignant paratesticular tumors and intrascrotal testicular lesions (including cysts of the tunica albuginea and malignant tumors) (3).

Although in the existing literature, paratesticular pseudotumors are most often described as reactive inflammatory processes, often associated with previous trauma, infection or surgical interventions, the underlying etiological factors remain unclear in the majority of cases (2,6).

The clinical presentation of these lesions is heterogeneous. They most often present as a painless solitary nodule, multiple discrete nodules or a diffuse multinodular hemiscrotal mass (1,5). Their size in most cases does not exceed 8 cm (1,7). However, due to their size and typically firm consistency, distinguishing them from malignant tumors of the region may be challenging (1,2).

Ultrasound examination is the initial diagnostic modality (5). Nevertheless, given their nonspecific imaging characteristics, a definitive diagnosis of paratesticular inflammatory pseudotumors exclusively on the basis of ultrasound is often not possible (1). Well-defined, homogeneously hypoechoic, extratesticular lesions are commonly described in paratesticular fibrous pseudotumors (5). Malignant tumors more often demonstrate irregular margins, areas of necrosis, poorly defined borders, and contrast enhancement (1). In the presented case, the presence of a solid, highly vascularized, heterogeneous paratesticular mass with indistinct margins further increased the clinical suspicion of malignancy.

Wesley et al. (4) report that serum tumor marker values are within normal limits in these lesions. This finding was also partially present in our patient, given the normal values of β-hCG and alpha-fetoprotein. However, the noted mild elevation of neuron-specific enolase further complicated the preoperative assessment.

Currently, there are no well-established guidelines for the management of paratesticular pseudotumors. However, surgical excision of the lesion is considered the treatment of choice (1). Orchiectomy is reported in the literature as the most frequently used treatment modality for these lesions (2, 7), while testis-sparing surgery is reserved for carefully selected patients with a strong suspicion of benign disease and the availability of intraoperative histopathological evaluation (1). In our case, radical orchiectomy was performed due to the high clinical and radiological suspicion of malignancy, the inability to reliably exclude a malignant tumor preoperatively, and the lesion's size and marked vascularization.

Definitive diagnosis is established by histopathological examination (1,5). Microscopically, these lesions are most commonly characterized by multinodular or diffuse proliferation of fibroblasts and myofibroblasts, within abundant hyalinized collagenous stroma (1,4,5,8). The inflammatory component is variable in intensity and typically consists of a mixed infiltrate containing plasma cells, lymphocytes and occasional eosinophils (1,5). In our case, the histopathological findings, dominated by mixed inflammatory infiltrate, fibrin deposits and areas of necrosis with preserved testicular tissue, fall within the described spectrum of inflammatory pseudotumor lesions of the epididymis, confirming the benign nature of the process despite its aggressive clinical and radiological presentation.

CONCLUSION

Paratesticular pseudotumors pose a significant diagnostic challenge, especially in the pediatric and adolescent population, primarily due to their rarity and clinical and radiological resemblance to malignant tumors of this region. The present case highlights the limitations of preoperative diagnostics and the key role of pathohistological analysis in establishing a definitive diagnosis. Although radical orchiectomy is often performed due to justified suspicion of malignancy, awareness of benign pseudotumor lesions is essential in the differential diagnosis of paratesticular masses, in order to promote testis-sparing approaches whenever feasible.

References

1. Shamseldin YOM, Ibrahim MSM, AlAni L, Alani AM, Alsharani SA, Abdelrahman A. Benign paratesticular inflammatory pseudotumor: A rare case report. Radiol Case Rep. 2024;20(1):823-828. doi: 10.1016/j.radcr.2024.10.094
2. Başal Ş, Malkoç E, Aydur E, Yıldırım İ, Kibar Y, Kurt B et al. Fibrous pseudotumors of the testis: The balance between sparing the testis and preoperative diagnostic difficulty. Turk J Urol. 2014;40(3):125-9. doi: 10.5152/tud.2014.21284
3. Zhang Z, Yang J, Li M, Cai W, Liu Q, Wang T et al. Paratesticular fibrous pseudotumor: a report of five cases and literature review. Front Med. 2014;8(4):484-8. doi: 10.1007/s11684-014-0325-3
4. White WM, Hilsenbeck J, Waters WB. Fibromatous periorchitis of testis. Urology. 2006;67(3):623.e15-6. doi: 10.1016/j.urology.2005.09.048
5. Ashraf A, Sarin K. Paratesticular inflammatory pseudotumour, a rare case. Urol Case Rep. 2022;45:102211. doi: 10.1016/j.eucr.2022.102211
6. Navai N, Yap RL, Gupta R, Fraser TG, Gonzalez CM. Inflammatory pseudotumor of the testis: a novel presentation of acute retroviral syndrome. Int J Urol. 2005;12(4):424-6. doi: 10.1111/j.1442-2042.2005.01065.x
7. Seethala RR, Tirkes AT, Weinstein S, Tomaszewski JE, Malkowicz SB, Genega EM. Diffuse fibrous pseudotumor of the testicular tunics associated with an inflamed hydrocele. Arch Pathol Lab Med. 2003;127(6):742-4. doi: 10.5858/2003-127-742-DFPOTT
8. Orosz Z, Besznyák I I. Diffuse Inflammatory Pseudotumor of the Testis, the Epididymis and the Spermatic Cord. Pathol Oncol Res. 1995;1(1):75-79. doi: 10.1007/BF02893588