

CASE REPORT

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Co-existence of Morgagni's cyst with a twisted vas aberrans and "bell clapper" deformity in a 15-year-old boy: a case report

Athanasios G. Pegios^{1*}, Apostolos P. Andronikou², Ioannis Ch. Georgakis¹ and George S. Papouis¹

Abstract

Background The testicular appendix is a residual of the paramesonephric and mesonephric duct, most commonly found close to the superior pole of the epididymis as Morgagni's cyst. Torsion of such cysts is a common event in children, and the patient usually presents with a palpable testis with a tender mass in its upper pole. The co-existence of two or more appendices is very rare. In addition to the fact that Morgagni's cyst was the non-twisted one and vas aberrans was, made clinical and radiological diagnosis difficult.

Case presentation Our patient, a 15-year-old boy, presented with persistent pain in the right scrotum, a significant palpable mass accompanied by vomiting. Upon surgical exploration, a large dark cyst was found located on the right side of the right testicle with a 720-degree torsion. The cyst was straightened and excised along with a Morgagni's cyst. The testis was fixed in the right hemiscrotum due to a "bell clapper" deformity that was also a finding.

Conclusions Pathological findings were consistent with a twisted cyst of a testicular appendix (vas aberrans). Co-existence of two or more appendices is very rare in addition to the fact that Morgagni's cyst was the non-twisted one. Usually and in very few cases, a second appendix is found randomly, during surgical exploration for acute scrotum due to torsion of Morgagni's cyst.

Keywords Vas aberrans, Testicular, Appendix, Torsion, Case report

Background

A wide range of pathological conditions should be included in the differential diagnosis of acute scrotal pain in young boys and adolescents [1–3]. It is a situation that requires the immediate attention of the clinician to exclude a testicular torsion and potential loss of the testicle [4]. The most common diagnoses of acute scrotal pain in boys are testicular torsion, torsion of a testicular appendix, and epididymitis [5]. The testicular appendix

is usually a Morgagni's cyst (90–92%) (residual of Mullerian duct) and less frequently epididymal appendix (7%), organ of Giralde (0.7%), and vas aberrans of Haller (0.3%) (last three residuals of Wolffian duct) [1, 4].

The patient with torsion of testicular appendage usually presents with a non-tender testicle and a palpable mass usually in the superior pole of the testicle, sensitive to palpation [6]. The cremasteric reflex is usually present, and the blood flow of the testis is either unaffected or increased during Doppler examination [4, 7]. Management of such patients depends on the clinical presentation and the dimension of the appendix [8]. It is usually treated conservatively with analgesics, bed rest, and elevation of the scrotum [9]. The symptoms subside in 5 to 10 days [9]. If the pain is significant, persists, increases, or the dimensions of the appendix are great (spermatocele),

*Correspondence:

Athanasios G. Pegios
athanasiospegios@gmail.com

¹ Department of Pediatric Surgery, Hippokratia Hospital Thessaloniki Greece, Thessaloniki, Greece

² Department of General Surgery, Vostanio General Hospital of Mytilini, Mytilini, Greece

surgical exploration may be required without the need for contralateral scrotum exploration [9].

Case presentation

A 15-year-old boy was admitted to the emergency room complaining of persistent scrotal pain in his the right hemiscrotum associated with two episodes of vomiting. The patient visited his local emergency room 2 days prior with similar symptoms where he was treated conservatively and was released 2 days later with antibiotics and anti-inflammatory prescription. There was no history of trauma.

Upon clinical examination, there was significant right hemiscrotal tenderness and inflammation. A palpable mass was found at the lower pole of the right testicle. The right testicle had no clinical signs of torsion and was agile with normal size and position. The right hemiscrotum had a strange feeling at palpation because of the coexistence of the testicle and the mass that had similar size and shape. Clinical examination of the left hemiscrotum and abdomen was unremarkable. Urgent sonography with Doppler was performed which revealed a cystic lesion at the lower pole of the right epididymis, sized 2.9 cm×3 cm along with normally echogenic and perfused testes. Due to acute scrotum, the patient was transferred to the operational theatre for surgical intervention.

An emergency surgical scrotal exploration was performed which revealed a normal right hemiscrotum and a large dark hemorrhagic cystic lesion 4×3.2×2.5 cm attached to the body of epididymis with a 720-degree twist (Fig. 1).

The cyst was straightened and excised along with a Morgagni's cyst (Fig. 2). The testis was fixed in the right hemiscrotum due to a "bell clapper" deformity.



Fig. 1 Twisted hemorrhagic cyst

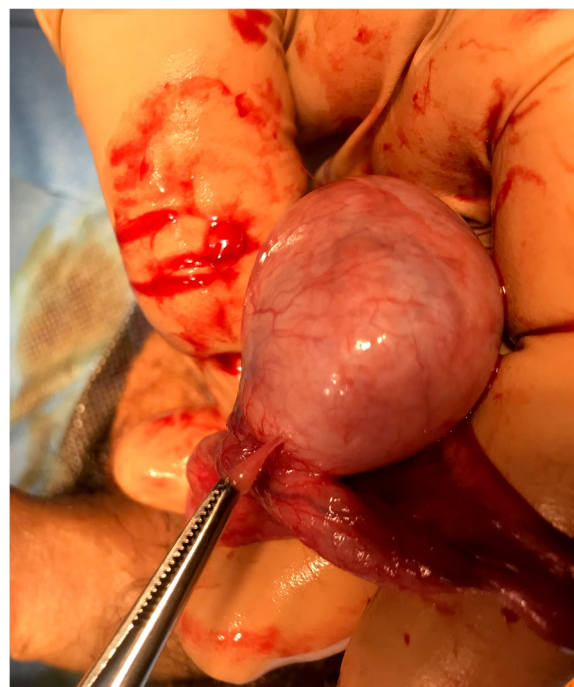


Fig. 2 Morgagni's cyst

Contralateral scrotum exploration was not performed. The histopathology findings were consistent with a twisted cyst of the testicular appendix. The tissue sample consisted of pseudostratified columnar epithelium with loose connective tissue. The patient was discharged 48 h later with oral antibiotics and analgesics following an unremarkable recovery.

Conclusions

Acute scrotum is a common urgent condition in young boys that needs immediate testicular exploration in order to exclude testicular torsion. In most cases, the subjective cause is torsion of the testicular appendix. In the majority of these cases, the type of the appendix is Morgagni's cyst. Torsion of other types of appendices is rare and can be identified only during surgical exploration. Ultrasound imaging sometimes reveals a cystic or solid mass towards the epididymis or an enlarged and inflamed epididymis that is diagnosed as epididymitis. Epididymitis is a rare condition in young boys, so the inflammation is a consequence of the ischemic twisted testicular appendix. Torsion of the epididymal appendix, organ of Giraldez, and the vas aberrans (organ of Haller) are rare as their presence is less than 8% of testicular appendices. Clinical diagnosis of these conditions is complicated due to the fact that the symptoms are common. Imaging is usually not specific and cannot provide certain diagnoses. In our case, the clinical presentation was clearer, with a

palpable mass at the right hemiscrotum causing pain to the patient. The identity of the mass was determined only after surgical exploration. Management of such conditions is the management of acute scrotum and is surgical exploration. Preoperatively, this palpable mass was a strange clinical finding because of its volume and its position in the hemiscrotum. Ultrasound imaging cannot always determine the origin of the appendix, and this can only be done during exploration. The surgical treatment in all types of appendage torsions is ligation and ablation of the twisted appendix. Torsion of vas aberrans is clinically significant due to its rarity. Co-existence of two or more appendices is also very rare in addition to the fact that Morgagni's cyst was the non-twisted one. In very few cases, a second appendix is found randomly, during surgical exploration for acute scrotum. "Bell clapper" deformity is also a congenital anatomic malformation and a risk factor for testicular torsion [10]. All these three congenital malformations were not expected, and it was a very rare incident even for the older and more experienced surgeons. In this case, we had to make a differential diagnosis of the mass that did not seem to be something common, choose the type of surgical incision on the scrotum, and decide if we should fix the testicle due to "bell clapper" deformity and also investigate the other. Contralateral fixation was not performed because there was no testicular torsion and both testes were viable. A vertical incision was selected because of the unknown origin of the mass that needed further exploration.

In conclusion, surgical intervention for acute scrotum appears to have several benefits over conservative treatment even in cases where testicular torsion is excluded from differential diagnosis via ultrasonography. Surgical exploration reduces hospitalization and drug usage and in some cases can reveal current anatomical disorders that sonography cannot. Young surgeons and trainees should be aware of the co-existence of possible deformities in cases that seem to be daily routine but end up different at the operational theatre.

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Authors' contributions

All authors have read and approved the manuscript. AP: manuscript review, data acquisition, manuscript preparation, manuscript editing, concepts, design of the work, definition of intellectual content, and literature search. AA: concepts, definition of intellectual content, literature search, data acquisition, and manuscript editing. IG: design of the work, definition of intellectual content, literature search, manuscript review, and guarantor of the study. GP: manuscript review, concepts, definition of intellectual content, manuscript editing, and guarantor of the study.

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Competing interests

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References

- Rakha E et al (2006) Torsion of the testicular appendix: importance of associated acute inflammation. *J Clin Pathol* 59:831–834
- Messina et al (2019) A rare cause of acute scrotum in a child: torsion of an epididymal cyst. Case report and review of the literature. *Pediatr Med Chir* 41(1):22–23
- Pomajz AJ et al (2021) Appendix testes torsion. NCBI Bookshelf. StatPearls Publishing, Treasure Island
- Fujita et al (2017) Distinguishing testicular torsion from torsion of the appendix testis by clinical features and signs in patients with acute scrotum. *Res Rep Urol* 9:169–174
- Ayvaz et al (2015) Four-year retrospective look for acute scrotal pathologies. *North Clin Istanb* 2(3):182–188
- Meher et al (2015) Torsion of a large appendix testis misdiagnosed as pyocele. *Case Rep Urol* 2015:430871
- Ozaal et al (2020) Torsion of an epididymal cyst: a rare finding on scrotal exploration for acute scrotum. *Case Rep Urol* 2020:8858606
- Tanaka et al (2020) Acute scrotum and testicular torsion in children: a retrospective study in a single institution. *J Pediatr Urol* 16(1):55–60
- Mojtaba et al (2015) A 14-year-old boy with torsion of the epididymal cyst. *Case Rep Urol* 2015:731987
- Nistal et al (2016) Perspectives in pediatric pathology, chapter 19. Testicular torsion, testicular appendix torsion, and other forms of testicular infarction. *Pediatr Dev Pathol* 19(5):345–359

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