



## Torsed spermatocele, a rare cause of acute scrotum: Report of a case and review of literature

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### ABSTRACT

Spermatocele is a common cause of benign scrotal swelling that mostly arises from the head of the epididymis. It is a fluid-filled swelling containing spermatozoa. Torsion of a spermatocele is a very rare encounter for a urologist. It is poorly described in the English literature and there are only seven cases reported so far. There is no specific clinical feature suggesting spermatocele torsion and the diagnosis is often made during an emergency scrotal exploration. We report the eighth case of torsed spermatocele in a young adult diagnosed during emergency scrotal exploration for a suspected testicular torsion.

### 1. Introduction

Spermatocele (SC) is one of the common causes of benign scrotal swelling in adults. It is a benign fluid-filled swelling containing spermatozoa and mostly arises from the head of the epididymis near the upper pole of the testis. The exact mechanism of growth is unknown but is suggested to be caused by epididymal duct blockade and might be related to increasing age. It is common in men above 40 and is observed in up to 30% adult men. Most cases are asymptomatic and are diagnosed incidentally during evaluation by ultrasonography.<sup>1-3</sup>

Torsion of a SC is a very rare encounter for urologists. The condition occurs when the cyst is torsed around its pedicle and causes acute scrotal pain and swelling. The symptoms might mimic that of testicular torsion and the diagnosis is often made during emergency scrotal exploration. Due to its extreme rarity, torsed SC is poorly described in the English literature with only seven cases reported so far.<sup>2,4,5</sup> Here, we report the eighth case of torsed SC that was diagnosed during emergency scrotal exploration for a suspected testicular torsion.

### 2. Case presentation

A 25-year-old male presented to the emergency department with a sudden onset right scrotal pain with associated swelling of 23 hours duration. The pain was severe and worsened during movement. He

reported no scrotal trauma, previously known scrotal pathology or a similar pain episode before. The physical examination revealed a swollen and tender right hemi-scrotum. The spermatic cord was easily palpated but it was difficult to delineate the epididymis from the testicle. There was no sign of hernia and the contralateral testicle had no abnormality.

A complete blood count and urine analysis were normal. Ultrasonography of the scrotum was performed and showed a grossly swollen testicle and associated cystic mass arising from the right epididymis. A clinical diagnosis of testicular torsion was entertained, and the patient was rushed to the operation theater for emergency scrotal exploration. Upon exploration, a 3 × 5 cm pedicled cystic mass arising from the right epididymal head was identified. It was twisted 540° around its pedicle and had a dark color. The right testicle was not torsed and had normal features. The cyst was excised and sent for pathologic evaluation (Fig. 1A and B).

The patient subsequently improved and went home the next day. The pathology report showed an edematous cystic mass filled with a complex fluid and immobile spermatozoa. Cyst wall was lined by ciliated simple columnar and cuboidal epithelium. There was no feature of malignancy, but an ischemic solid margin was identified near the cyst wall formed by epididymal tubules and fibrous tissue (Fig. 2).

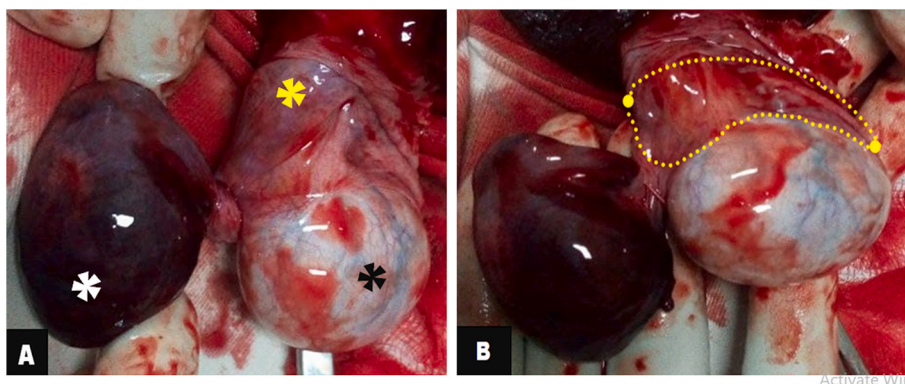
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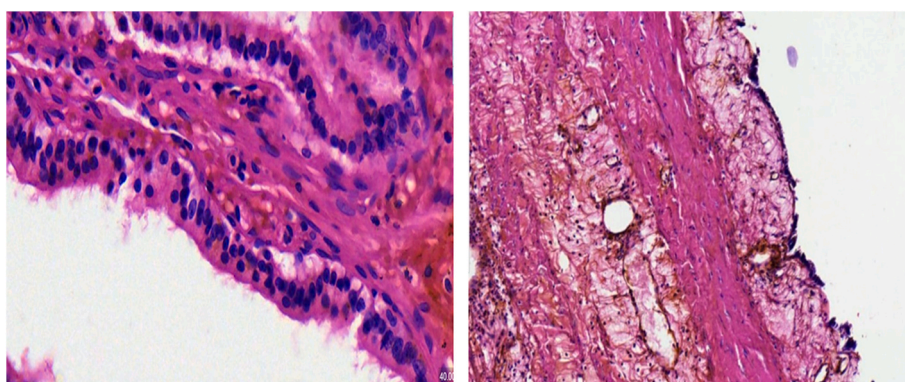
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**Fig. 1.** Intraoperative pictures during emergency scrotal exploration. **Fig. 1A;** A torsed and ischemic cystic mass (white asterisk) connected to the head of the epididymis (yellow asterisk) with a twisted stalk. The testicle appears healthy and viable (black asterisk). **Fig. 1B;** Untwisted pedicle of the spermatocele connected to the epididymis (outlined with yellow dots). (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)



**Fig. 2.** Microscopic photograph of the spermatocele specimen showing an edematous and fibrous cyst wall lined with ciliated columnar epithelium. Ischemic epididymal tissue surrounded by edematous stroma is also shown.

**Table 1**

Review of case reports and series reported so far on acute scrotal pain due to torsion of a spermatocele.

Year	Age	Authors	Brief Case Description
1. 1985	20 yrs.	Jassie et al. <sup>1</sup>	Operative diagnosis of a 2 cm cyst from right epididymal head torsed at 360°
2. 1985	40 yrs.	Jassie et al. <sup>1</sup>	Torsion of a 2.5 cm cyst at 360° attached to the right epididymal head
3. 1990	13 yrs.	Kaye et al. <sup>2</sup>	A 3.0 × 5.5 cm cyst from left epididymal head torsed at 360°
4. 1995	18 yrs.	Odabas et al. <sup>3</sup>	A 6.5 × 3.5 cm left side spermatocele torsed at 360°
5. 2002	27 yrs.	Takimoto et al. <sup>4</sup>	Intraoperative diagnosis of a 3 × 5 cm right side spermatocele torsed at 540°
6. 2008	15 yrs.	Takeshita et al. <sup>5</sup>	180° torsion of a 3.2 × 2.7 cm right epididymal head cyst
7. 2008	25 yrs.	Hikosaka et al. <sup>6</sup>	Operative diagnosis of a left epididymal head cystic swelling torsed at 180°.

**3. Discussion**

Torsion of a SC causing an acute scrotum is an extremely rare condition. There are only seven cases reported so far and here we add one to the group. A sudden onset of acute scrotal pain and swelling that mimic testicular torsion was the typical presenting feature in all of these cases. The first two cases of torsed spermatocele were reported in 1985 by Marvin P. Jassie and Parvez Mahmood.<sup>1,2</sup> Six additional cases were reported in the past four decades which indicates its extreme rarity in the urological practice (Table 1).<sup>5</sup>

Acute scrotal pain is a common urologic emergency. A urologist

might be challenged by a variety of pathologies that manifest with acute scrotal pain with or without an accompanying swelling. Spermatic cord torsion, torsion of a testicular appendage, scrotal trauma, epididymitis, orchitis, complicated hydrocele, complicated inguinal hernia, or even testicular tumor are some of the potential causes to be considered.<sup>1</sup>

Based on our literature review, there is no specific clinical parameter that can be used to differentiate torsion of a SC from other causes of an acute scrotum. The presence of a long pedicle and anatomic origin from the epididymal head appear to be the most important anatomic predispositions to torsion. Additional factors that can increase the chance of torsion are yet to be determined.<sup>1,5</sup>

In all the cases reported so far, the diagnosis of torsed SC was made during emergency scrotal exploration for a suspected testicular torsion. In our patient, all the clinical findings increased the suspicion of testicular torsion and the aim of exploration was to relieve the pain and salvage the presumably torsed testicle.

Our operative findings as well as review of literature indicate that urologists can consider the diagnosis of a torsed SC when they face an acute scrotum, especially in men with a prior history of asymptomatic SC. Surgical management of torsed SC appears straightforward. Careful dissection of the cyst and its pedicle off the epididymis is required to avoid testicular de-vascularization and atrophy.<sup>2-5</sup>

Some concerns are raised by few reports in that the presence of a SC might even predispose a patient to testicular torsion by distorting the anatomic orientation and axis of the ipsilateral testicle. Although further studies will be required to validate the above concerns, the evidences are sufficient to warn urologists not to overlook the potential diagnosis of testicular torsion especially in the presence of prior history of SC. As the disease outcome is time dependent, any patient with acute scrotum

should be suspected to have a testicular torsion unless proven otherwise. Additionally, individuals with an asymptomatic SC should be advised that both testicular torsion and SC torsion are potentially possible to happen and an urgent visit to a urologist should be stressed in such incidents.<sup>2,3,5</sup>

#### 4. Conclusion

Torsed SC is rare cause of acute scrotum. It leads to urgent scrotal exploration as it mimics a torsed testicle. Urologists should keep in mind that torsed SC could be a differential diagnosis of acute scrotum in patients with history of SC. A specific anatomic predisposition to cyst torsion is not well described but a long pedicle and cyst origin from epididymal head appear to have a role. We reported the eighth patient with acute scrotum from torsed SC and we suggest other urologists to do the same if they encounter similar cases.

#### Availability of data and materials

The datasets with more radiologic images are available from the corresponding author upon reasonable request.

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#### Declaration of competing interest

The authors declare that they have no competing interests.

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