Original Research Paper

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General Surgery

SPERMATOCELE OR HYDROCELE: A SURGICAL ENIGMA

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ABSTRACT Spermatoceles are typically asymptomatic scrotal lumps that are often discovered incidentally during physical or radiological examinations. They are commonly mistaken for hydroceles. A 58-year-old man presented to the outpatient clinic with a right scrotal swelling, which had developed after scrotal trauma. The swelling persisted for several years, accompanied by a sensation of heaviness, occasional right scrotal pain, and cosmetic concerns. Scrotal ultrasonography revealed a large fluid-filled cyst pushing the testis anteroinferiorly in the right scrotum. Initially thought to be a hydrocele, further radiological evaluation confirmed the diagnosis of a spermatocele. During scrotal exploration in the operating theater, the spermatocele was found emerging from the head of the epididymis, and the cyst was excised.

KEYWORDS :

INTRODUCTION

A spermatocele is a cystic structure filled with fluid and spermatozoa, likely resulting from either an acquired or congenital partial obstruction of the spermatic ducts. It is typically unilateral, solitary, and less than 1 cm in diameter, making it largely asymptomatic. In most cases, it remains small and does not cause significant issues. However, in rare instances, it may grow large enough to cause discomfort, scrotal heaviness, raise concerns about a possible neoplasm, or require treatment. The diagnosis of spermatocele is often incidental, as the condition tends to develop gradually. Surgical intervention should be considered if symptoms such as persistent, bothersome pain occur or if para-testicular tumors cannot be excluded. This case is presented due to the incidental finding and the rarity of the condition.

Case Report

A 58-year-old male presented with right scrotal swelling that developed following scrotal trauma 15 years ago at his workplace. Approximately two months after the injury, he noticed a painless swelling in the same area of the right scrotum. The swelling gradually increased in size, and although he consulted a local doctor, he did not adhere to the recommended treatment. There was no associated genitourinary infection or recent scrotal trauma related to the swelling. Over the past 15 years, the swelling continued to enlarge and exceeded its original size. The patient occasionally experienced a dragging pain in the right scrotum, especially towards the end of the workday. Upon examination, a prominent elliptical swelling was noted in the right scrotum, located superior and posterior to the right testis. The swelling was soft, non-tender, fluctuant, and extended upwards, being attached to the spermatic cord, with the overlying skin unaffected. The left scrotum appeared normal upon physical examination. A positive transillumination test suggested a cystic nature of the swelling. Hematological and biochemical evaluations yielded normal results, and the urine examination showed no signs of infection. Color duplex scanning of the scrotum revealed a uniloculated cystic lesion in the right scrotal sac with dense mobile internal echoes, moving in the direction opposite to the Doppler probe during compression, indicative of a "falling snow" sign (Fig. 1). The mass was pushing the testis inferiorly to the bottom of the scrotum, consistent with a large spermatocele. Both testicular volumes were normal, and the testes exhibited homogeneous parenchymal echo patterns with no focal lesions or calcifications, suggesting preserved vascularity. Varicocele and hydrocele were ruled out bilaterally on color Doppler examination.

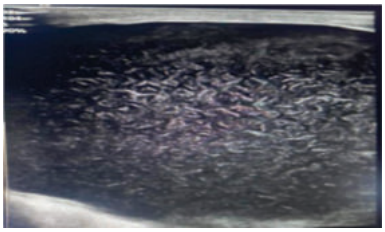

Fig 1 Falling Snow Sign on USG Scrotum.

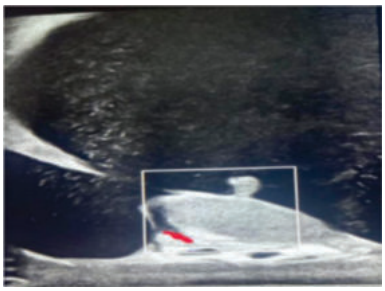

Fig 2 A Grey Scale Image of Right Scrotal Sac Showing a Giant Cyst Positioned Superior to Right Testis s/o a Spermatocele

Surgical exploration was performed through a right scrotal incision parallel to the median raphe. The cyst was bluntly dissected from the scrotal wall and gently separated from the spermatic cord, testis, and epididymis. During this process, some adherence was noted between the cyst and the head of the epididymis. The cyst was excised, and the testis was repositioned into the scrotum. The incision was closed in layers. The cystic fluid was examined under a light microscope, revealing no pus cells or sperm cells. The postoperative recovery was smooth, and the patient was discharged without complications.

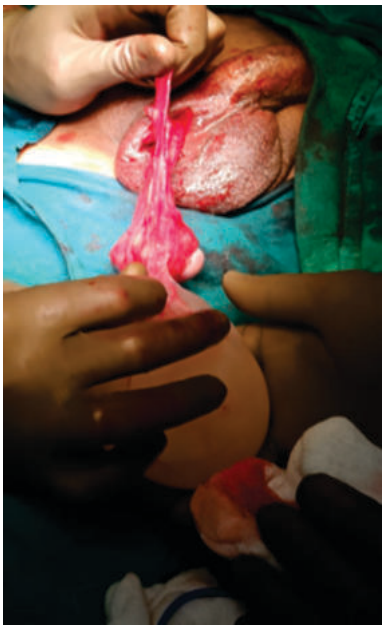

Fig 3

Fig 4 Intra Op Image Showing Spermatocele

Fig. 3&4: The spermatocele pushing the testis laterally and anteriorly but not enveloping it as in the case of hydrocele and the tunica vaginalis covering of the testis was maintained .

DISCUSSION

A spermatocele is typically described as a cyst containing sperm within the scrotum. It usually occurs in the epididymal head, originating from the dilation of efferent ductules, although it can also arise from the expansion of the rete testis tubules or aberrant ducts. The development of a spermatocele is often idiopathic, but the dilation of these tubules can result from factors such as trauma, epididymitis, or scrotal surgery. In this case, the spermatocele's development appears to be linked to scrotal trauma, which aligns with Crossan's observation that "a slowly progressive swelling or tumor following trauma raises suspicion of spermatocele." Therefore, the patient's history of trauma helps suggest the underlying condition. Giant spermatoceles, though rare, are typically unilocular and single, as seen in this case, though bilateral and multilocular spermatoceles have also been reported. Of the documented cases of giant spermatoceles, six occurred in men over 40 years old, while three cases involved males aged 14, 27, and 40 years. Most of these cases were idiopathic, except for one with a history of scrotal trauma, similar to the case reported here.

Large scrotal swellings like the one in this case are often mistaken for hydroceles. Accurate diagnosis requires careful workup. Spermatoceles usually develop on the upper part of the testis, pushing it inferiorly and sideways, and can often be felt as distinct masses. In contrast, hydroceles surround the testis on the lateral and anterior sides without displacing it, giving the false impression of testicular enlargement. Ultrasonography can differentiate the two conditions. A hydrocele typically shows an echo-free cystic structure surrounding the testis, while a spermatocele may demonstrate low-level internal echoes from sperm or other cells. These cells move away from the Doppler probe when compressed, producing the characteristic "falling snow" sign.

Surgical excision is the standard treatment for spermatoceles, especially when the cyst exceeds 4 cm in diameter or when symptoms like cosmetic concerns or scrotal pain (as in this case) are present, or when there is an associated hernia or hydrocele. Surgery is also recommended when a neoplastic condition cannot be ruled out, as some cases of adenocarcinoma of the rete testis present with soft scrotal swellings. In the case of giant spermatoceles, surgery is also advised due to the risk of testicular torsion or torsion of the cyst itself around its pedicle. A review of the literature reveals that terms like "epididymal cyst" and "spermatocele" are often used interchangeably or incorrectly, likely due to the challenges in distinguishing between these two types of cysts based on clinical and sonographic evaluations.

CONCLUSION

Spermatoceles can develop at a younger age and grow to a large size. Patients often delay treatment until they experience symptoms such as discomfort or cosmetic concerns. Surgery is the preferred treatment for severe cases that may be complicated by testicular torsion. After trauma, it is recommended to perform clinical and sonographic examinations of the scrotum to monitor for potential spermatocele development. Additionally, patients should be routinely encouraged to self-examine their scrotum, particularly after genital trauma.

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