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Spontaneous, atraumatic hydrocele rupture: A case report

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ABSTRACT

There is little information in the literature on the management and prognosis of ruptured hydroceles. We present a case report of spontaneous, atraumatic left hydrocele rupture in a 64-year-old male. His hydrocele was initially diagnosed as non-complex and appeared to have ruptured spontaneously three years after initial onset. On follow-up in clinic, mild re-accumulation of fluid was observed, and no pain was reported by the patient. Post-rupture fluid re-accumulation was minimal in our patient but there is potential for significant fluid re-accumulation based on other reports of ruptured hydroceles.

1. Introduction

A hydrocele is the accumulation of fluid between the visceral and parietal layers of the tunica vaginalis of the testicle and can lead to discomfort in males. They can arise due to trauma, infection, incomplete obliteration of the processus vaginalis, or can be idiopathic in nature. Surgical intervention is indicated when the mass causes pain or discomfort and interferes with function.[1]

In this report, we present the case of a man who experienced a left hydrocele rupture that was spontaneous and atraumatic in nature. To our knowledge, there have been less than 10 case reports of ruptured hydroceles, and only two other reports of spontaneous, atraumatic rupture.[2,3]

2. Case presentation

A 64-year-old male was seen in the urology clinic for evaluation of a ruptured hydrocele after presenting to the emergency department (ED). He also had a history of low-risk prostate cancer on active surveillance for 10 years, dyslipidemia, chronic obstructive pulmonary disease, Barrett's esophagus, and anxiety. The patient originally presented in June of 2018 with left-sided scrotal swelling that was diagnosed as a non-complex hydrocele on scrotal ultrasound (see Fig. 1). The patient described the swelling as very tense, progressing in size over several years, and approximately the size of a grapefruit. He denied any pain but expressed difficulty partaking in daily activities.

In July of 2021, he awoke to find that his hydrocele had significantly decreased in size and that there was corresponding swelling in his penis. The patient had been drinking alcohol with friends the night before but did not recount any trauma, or sexual activity during that time. On the same day, the patient presented to the ED where an examination was performed and the skin overlying the left testicle appeared to be thickened. He was stable, his pain was minimal, and he was discharged with an ultrasound scheduled for the next day. The ultrasound revealed an irregular contour of the previous hydrocele and low-level echoes, suggesting interval rupture with a corresponding hematocele (see Figs. 2 and 3). He was prescribed 500 mg of oral Keflex to be taken four times a day for two weeks and was scheduled for urological follow-up in clinic.

The patient was seen in our clinic nine days after his ED visit. He denied any significant pain and was happy with the decreased size of the hydrocele. Since the rupture, there had been a moderate re-accumulation of fluid that the patient noted. The patient continued to be pain free and had no lower urinary tract symptoms. The swelling in his penis had completely resolved since presenting to the ED. Examination revealed that although the left testicle was easily palpable, there was residual swelling in the left hemiscrotum, with enough fluid present to be consistent with a mild to moderate hydrocele. Examination of the right testicle was unremarkable.

The patient's residual hydrocele was managed conservatively. He was advised that accumulation of fluid and subsequent discomfort could possibly reoccur in the future, at which time surgery may be considered.

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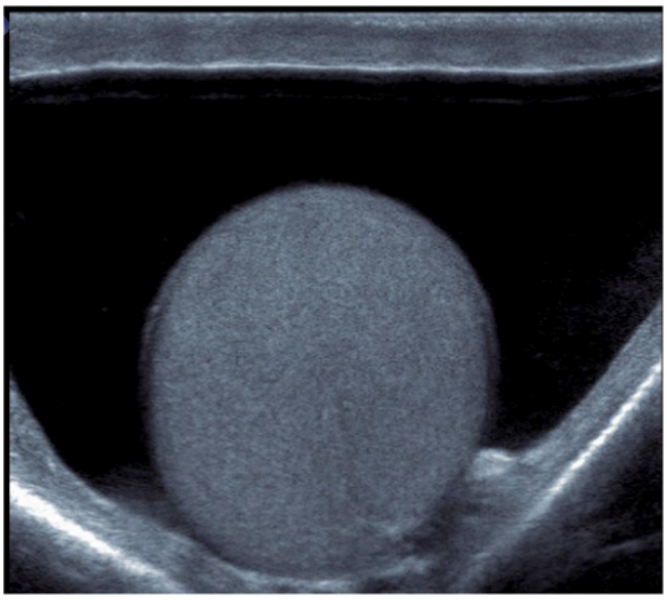

Fig. 1. Scrotal ultrasound demonstrating a non-complex, large left hydrocele in the patient in 2018.

Fig. 2. Scrotal ultrasound taken a day after presentation to the ED in 2021. The skin overlying the testicle is thickened with an irregular contour of the hydrocele and there are low-level echoes consistent with interval rupture and hemorrhage. Avascular echogenic material within the left hydrocele is consistent with a blood clot. Small linear tissue extending from the wall of the scrotum demonstrates vascularity, most likely a piece of tunica vaginalis torn from the rupture.

3. Discussion

Currently, there is no extensive literature on the management and history of ruptured hydroceles. Flores et al. describe the case of a 28-year-old man with a hydrocele that ruptured due to trauma from sexual intercourse. Post-rupture, the hydrocele was significantly decreased in size and the patient was deemed to be clinically stable. Anti-inflammatories, pain medication, and a scrotal support were prescribed as conservative treatment for post-rupture management. One month later, recurrence of the hydrocele led to definitive hydrocelectomy.[4] A second case of ruptured hydrocele due to sexual intercourse in a 34-year-old man was initially treated conservatively with scrotal elevation, cold compression, and antibiotics. There had been no recurrence at 3 and 12 months, but by 18 months post-rupture, the fluid had re-accumulated, prompting hydrocelectomy.[5]

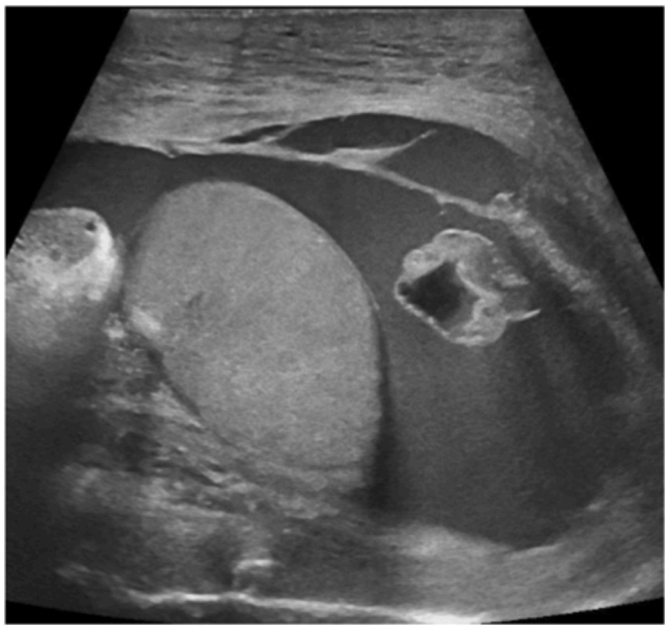

Fig. 3. Scrotal ultrasound taken a day after presentation to the ED in 2021. The skin overlying the testicle is thickened with an irregular contour of the hydrocele and there are low-level echoes consistent with interval rupture and hemorrhage. Avascular echogenic material within the left hydrocele is consistent with a blood clot. Small linear tissue extending from the wall of the scrotum demonstrates vascularity, most likely a piece of tunica vaginalis torn from the rupture.

It remains to be seen whether re-accumulation of fluid and only a transient period of decreased size and temporary relief is inevitable following rupture. Of the ruptured hydrocele reports with data accessible to us, there was only one case in which prophylactic use of antibiotics for prevention of infection was explicitly described.[5] It is evident from the two previously described cases that hydrocele rupture can occur as a result of trauma. Interestingly, our patient denied any significant trauma. However, as there was a corresponding hematocele and the patient was drinking alcohol, he certainly could have injured his hydrocele while sleeping or suffered some trauma unbeknownst to him. Furthermore, in our patient, post-rupture fluid re-accumulation had been minimal after a little over a week.

4. Conclusions

Based on the few cases described to date, there is potential for significant re-accumulation of fluid over time, which may necessitate hydrocelectomy. Moreover, although reported as an atraumatic rupture, a traumatic cause cannot be excluded completely given the associated hematocele and existing trauma-induced ruptures in the literature. More literature in this area may lead to greater insight into the prognosis and appropriate management of ruptured hydroceles.

Conflict of interest

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. The authors report no conflicts of interest with respect to this work.

References

1. Dagur G, Gandhi J, Suh Y, et al. Classifying hydroceles of the pelvis and groin: an overview of etiology, secondary complications, evaluation, and management. *Current Urology*. 2017;10:1–14.
2. Quint HJ, Miller JI, Drach GW. Rupture of a hydrocele: an unusual event. *J Urol*. 1992;147:1375–1377.
3. Cuervo Pinna C, Rodriguez Rincon JP, Garcia-Moreno AA, et al. Spontaneous rupture of hydrocele: an unusual complication. *Actas Urol Esp*. 1998;22:610–612.
4. Flores VX, Wallen JJ, Martinez DR, et al. Deflate-gate: conservative management of a large ruptured hydrocele. *Urol Case Rep*. 2015;3:198–200.
5. Bolat D, Eker A, Aydın ME, et al. Hydrocele rupture during sexual intercourse: a case report and review of the literature. *J Urol Surg*. 2020;7:149–151.