Abdominoscrotal Swelling in a Young Adult Male

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Abstract— The abdominoscrotal hydrocele (ASH) is a rare condition, which constitutes a communication of a hydrocele of the tunica vaginalis with the abdomen. A 20 year old male, presented to the surgical clinic with a lower abdominal cystic mass, and left sided scrotal swelling. Computed tomography (CT) scan showed a large, thick walled cystic mass without any septation, communicating with the scrotal cyst through the inguinal canal .Exploratory laparotomy was performed and the cyst mass was removed, and hydrocele was repaired. On subsequent visits, the patient remained with no recurrence of the swelling.

Index Terms—Abdominal Swelling. Scrotal swelling. Cystic mass. Hydrocele. .

1 Introduction

THE abdominoscrotal hydrocele (ASH) is an uncommon variant of the scrotal hydrocele; which it is characterized by a communication with an intra-abdominal component, in an "hour-glass" or "dumbbell-shaped" manner, via the inguinal canal. And it may present, both unilateral and bilateral, and may be associated with either an undescended testicle or inguinal hernia. Complete excision through the inguinal incision is recommended by most studies. We present an unusual case of unilateral abdominoscrotal hydrocele in a young male, with no associated comorbids.

2 Case Summary

A 20 year old male, with no reported comorbids, presented to the outpatient clinic with complain of left sided scrotal swelling for approx. 4 years. The swelling had gradually increased in size, and did not show any change on straining or lying straight. There was no pain associated with the swelling, and he denied, any other issues. He also had given no history of trauma. On examination, there was left sided scrotal swelling (Figure 1-A and 1-B), which was cystic in nature, non-tender and occupied the whole of the scrotum, no cough reflex could be elicited. There was loss of skin creases, with no change in temperature, with comparison to surrounding skin, no sign of inflammation or any scars. The right testis was not palpable. Transillumination test had been performed, which came positive. The patient was provisionally diagnosed as left hydrocele and scheduled for Jaboulay's procedure. At the time of admission, patient was re-examined and a lower abdominal swelling was noted. The swelling was soft, non-tender, fluctuant and acquired the left lower quadrant of the abdomen, to the level of umbilicus. Sonological examination had been per formed, which revealed a large cystic swelling in the lower quadrant which extended into the scrotum and compressing the bowel superiorly. A CT scan of the abdomen and pelvis was done (figure 2 and 3) which showed a large, thick walled cystic mass without any septation, displacing the bowel loops laterally and compressing the urinary bladder posteriorly. The mass was also seen, communicating with the pelvic cyst through the inguinal canal. The left sided tested was normal in size and shape lying in the scrotum and compressed posteriorlaterally due to large hydrocele. The contralateral testes, was small, atrophic lying at the higher location, near the superficial inguinal ring.

The patient was now plan for exploration and excision of the cyst, after taking informed consent regarding the need for right orchiectomy as well. A lower midline incision was made, the cyst was located retroperitoneal, compressing the bowel, and extending into the left hemiscrotum through the inguinal canal. The processus vaginalis was not patent bilaterally, and a small and atrophic testis was found in the retroperitonealy. A for right orchiectomy was performed. On opening the cyst, clear fluid was encountered, and the sac was excised from the pelvic cavity. The left testis, once isolated, was brought through the deep ring, and Jaboulay's procedure was done. An extraperitoneal mesh was placed at the level of deep ring, and anchored using vicryl sutures. The specimen was collected, and sent for histopathology, which revealed it to be a benign cavitary lesion, showing nonspecific mild chronic inflammation. The right testis was atrophied, showing focal sertoli cells hyperplasia and no spermatogenesis was observed. The features of histopathology were compatible with cryptorchid testes. The post-operative recovery was uneventful and followed up in the outpatient clinic after two weeks, which showed no sign of recurrence, on examination and sonological examination.

3 Discussion

Abdominoscrotal hydrocele is very rare benign pathology, which is seen in approximately 0.17% of adult hydroceles, and rarely seen in children [1]; in this condition a scrotal hydrocele develops a bell shape extension into the abdomen, through inguinal canal. It was first described by Dupetryn in 1834 as "I'hydrocoele en bissac". The phenomenon was later coined as "abdominoscrotal hydrocele" (ASH) by Bickle 1919[2]. The patient usually gives a history of two or more years as it takes a considerable length of time to cause sufficient distension of the lower sac to allow formation of an abdominal loculus by expansion against the intra-abdominal pressure. Furthermore, the condition first noticed in scrotum, and subsequently involves the lower abdomen. The etiology of the process is controversial. Previously it had been related with the partial obliteration of processus vaginalis, which was believed to serve as one way valve to pump up the scrotal portion of hydrocele with extraperitoneal fluid during episodes of high intra-

abdominal pressure [3]. This was thought to be accordance with Laplace's Law of Fluid Dynamics. However, the one-way valve theory is now discounted because of the non-patent process vaginalis present in ASH of children [4]. Complications of the disease process are usually due to compression of ureter and iliac vessels with resultant hydronephrosis and leg edema respectively [5], [6]. Physical examination are key to the clinical diagnosis, and can be made by bimanual palpation of dumbbell shaped mass in which the compression of abdominal component will result in enlargement of scrotal component and vice versa[7]. An ultrasound is usually the first line imaging method with adequate ability for diagnosis, further it is necessary to evaluate upper urinary tract, however in case of doubt CT or MR imaging with multiplanar approach would help to delineate the full extent of ASH. The treatment is surgical, Excision being the method of choice, for which different approaches have been recommended [8], most common being the inguinal approach [9]. Surgical treatment often results in development of inguinal hernia which reduces spontaneously requiring no surgery. However, in the younger population, it is recommended to observe uncomplicated swelling, as the intra-abdominal component, may resolve spontaneously [10]. In conclusion, surgical treatment is an effective means to manage abdominoscrotal hydroceles. There is no consensus on a recommendation on the approach which should be taken in this regard, however one should keep in mind the potential complications of the repair. In our case we addressed the possibility of developing an inguinal hernia by prompt mesh repair.

4 FIGURES

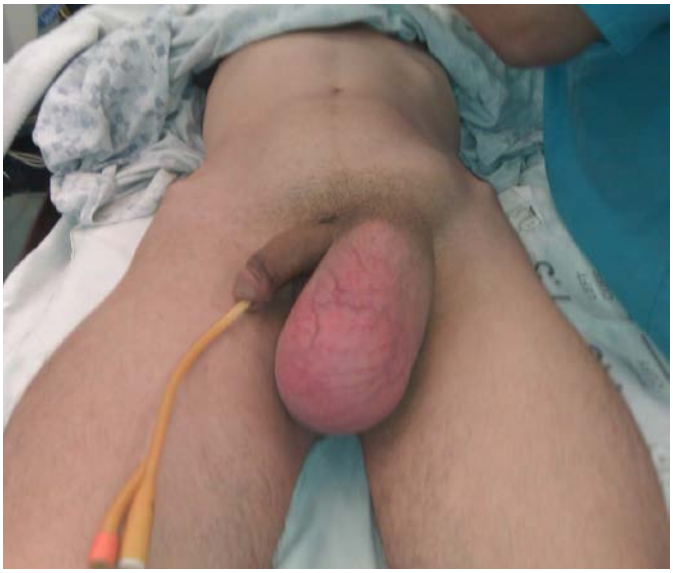

Figure 1-A: Photograph showing abdominal swelling and left scrotal hydrocele.

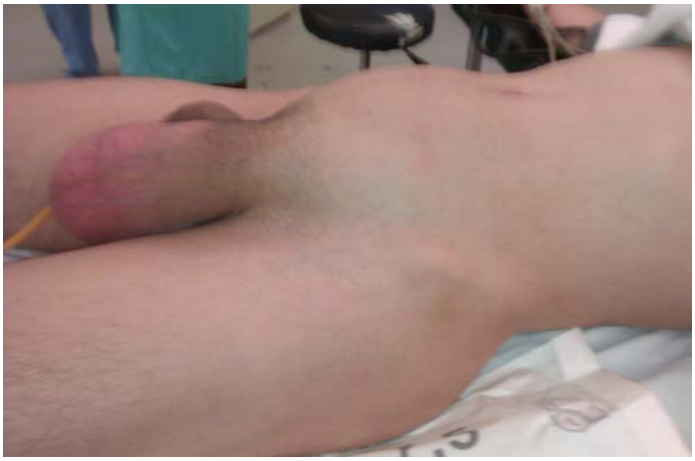

Figure 1-B: Photograph showing abdominal swelling and left scrotal hydrocele.

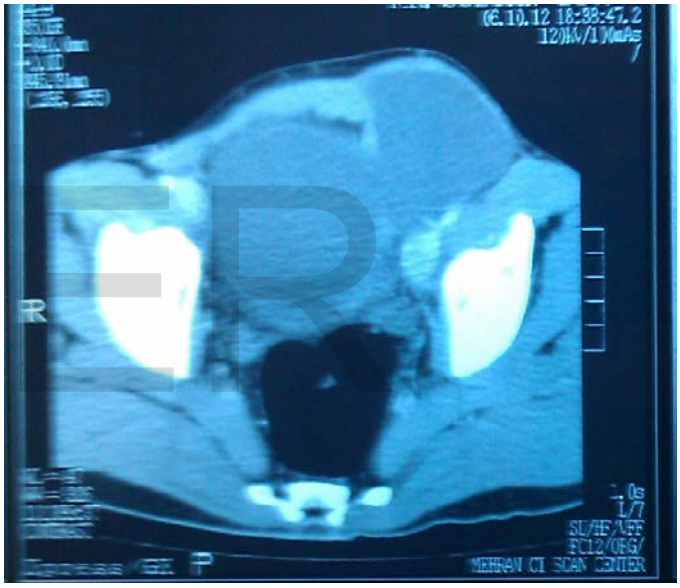

Figure 2: CT scan Images showing communication between abdominal cystic swelling and hydrocele.

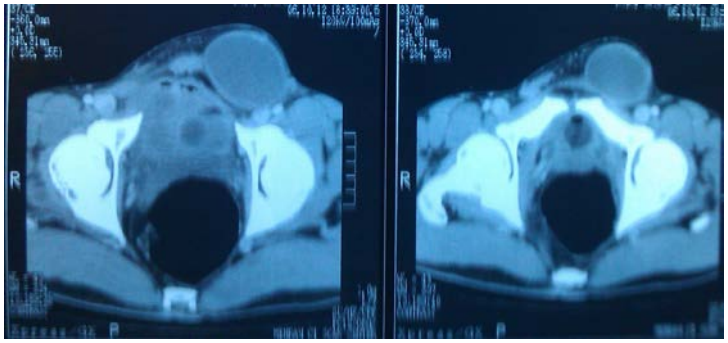

Figure 3: CT scan images of hydrocele.

REFERENCES

[1] Brodman, H.R., L.E.B. Brodman, and R.F. Brodman, Etiology of abdominoscrotal hydrocele. Urology, 1977. 10(6): p. 564-565.

[2] Kesner, K., I. Crowley, and R. Morkel, Abdominoscrotal hydrocele causing upper urinary tract displacement and obstruction. Urology, 1993. 41(3): p. 237-239.

[3] Rasalkar, D., et al., Abdominoscrotal hydrocele: an uncommon entity in adults presenting with lower abdominal and scrotal swelling. Journal of the Hong Kong College of Radiologists, 2009. 12(2): p. 76-78.

[4] Puneet, S., et al., Abdominoscrotal Hydrocele. The Internet Journal of Urology, 2006. 3(2).

[5] Klin, B., et al., Unilateral hydroureteronephrosis caused by abdominoscrotal hydrocele. The Journal of urology, 1992. 148(2): p. 384-386.

[6] Krasna, I.H., M. Solomon, and R. Mezrich, Unilateral leg edema caused by abdominoscrotal hydrocele: elegant diagnosis by MRI. Journal of pediatric surgery, 1992. 27(10): p. 1349-1351.

[7] Keihani, S., A. Hojjat, and A.-M. Kajbafzadeh, Abdominoscrotal Hydrocele: Role of Physical Exam and Transillumination in Diagnosis. The Journal of pediatrics, 2015. 167(6): p. 1448-1448. e1.

[8] Blackwell, R.H., et al., Massive abdominoscrotal hydrocele. Current urology, 2013. 7(2): p. 110-112.

[9] Kaplan, M., et al., Giant unilateral abdominoscrotal hydrocele in an adult: Case report. International urology and nephrology, 2006. 38(3-4): p. 667-670.

[10] Khorasani, M., et al., The treatment of abdominoscrotal hydrocele: Is there a role for nonoperative management? Journal of pediatric surgery, 2016. 51(5): p. 815-818.