Case Report

Abdominoscrotal hydrocele with ipsilateral hydroureteronephrosis in an adult: A case report

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ABSTRACT

Abdominoscrotal hydrocele (ASH) is very rare in adults and difficult to suspect on clinical examination. ASH is a very unusual presentation of scrotal hydrocele with extension intra-abdominally through the inguinal canal either communicating to the peritoneal cavity or non-communicating. An ASH is a congenital pathology involving a scrotal hydrocele expanding through the inguinal canal and reaching the abdominal cavity. Here, we present the case of a 25-year-old man admitted with a complaint of pain and lump in the left lower abdomen for 2 months and swelling in the left groin for 2 years. Ultrasound and computed tomography suggest left ASH with left-sided hydroureteronephrosis. A left DJ stent was placed and on exploration, a large cystic mass was seen intraperitoneally extending into the scrotum through the inguinal canal. Excision of the abdominal part and partial excision of the scrotal part were done with eversion of the remaining tunica vaginalis sac. Although ASH is a rare entity, it should always be kept on the list of differential diagnoses during the complaint of large abdominal mass in adults.

Key words: Abdominoscrotal hydrocele, Hydrocele, Infantile hydrocele

Abdominoscrotal hydrocele (ASH) is a rare clinical entity seen only in 0.18–3.1% of hydrocele cases [1]. ASH is a dumbbell or hourglass-shaped hydrocele that extends from the scrotum to the abdominal cavity extraperitoneally through the inguinal canal [2]. This is the rarest type of hydrocele [3]. The patients are generally asymptomatic but ASH can have complications related to the compression of adjacent structures, such as hydronephrosis, hydroureter, testicular dysmorphism, testicular torsion, altered spermatogenesis, spontaneous rupture, hemorrhage, and testicular malignant transformation [4,5]. As spontaneous resolution in cases of ASH is rare, early surgical intervention is recommended [3,6]. ASH is usually unilateral but few bilateral cases have been described in the literature.

Here, we report the case of an adult man presenting with a short history of pain and lump in the left lower abdomen with groin swelling diagnosed as ASH.

CASE REPORT

A 25-year-old man was admitted with a complaint of swelling in the groin area for 2 years. The swelling was insidious in onset, gradually progressing in size, and not associated with pain and fever. The patient also gave a history of a lump in the left lower abdomen which was noticed by him 2 months back that was gradually progressive in size and associated with pain. The pain was insidious in onset, dull aching, relieved on taking medication, and not radiated to any other site.

On examination, a lump of approximate size 15 × 10 cm was felt in the left lower quadrant of the abdomen. The temperature over the lump was not raised and no tenderness was present over the lump. The skin over the swelling was normal. The surface was smooth with well-defined margins and no movement was felt with respiration. There was an associated inguinoscrotal cystic swelling which was pyriform in shape (Fig. 1). The skin over the swelling was normal and had an impulse on coughing, getting over the swelling was not possible, and the testes were not palpable separately. The patient was vitally stable, oriented to time place, and person.

Ultrasound (USG) abdomen and inguinoscrotal region suggested the left ASH with left moderate hydroureteronephrosis, On USG, the size of the abdominal cyst was 13 × 14 × 14 cm with a corresponding volume of 1450 cc. Computed tomography (CT) abdomen stated a large cystic mass in the abdomen which continues to the left scrotum through the inguinal canal suggestive of ASH with left moderate hydroureteronephrosis (Fig. 2a). The patient's blood investigation shows normal blood count with

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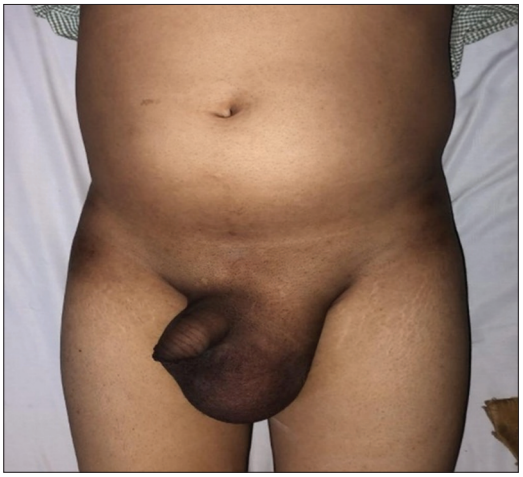

Figure 1: Abdominal, inguinal, and scrotal components of abdominoscrotal hydrocele

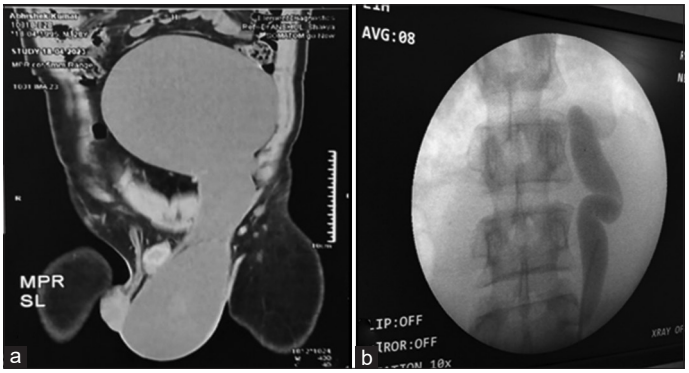

Figure 2: (a) Contrast-enhanced computed tomography showing hourglass appearance of abdominoscrotal hydrocele with intercommunicating scrotal and abdominal sac; (b) Retrograde pyelography showing dilated and tortuous left ureter

raised serum urea (60 mg/dL), creatinine (1.7 mg/dL), and normal liver function test, as well as, other laboratory investigations.

The patient was planned for surgery. On retrograde pyelography, the left ureter was seen dilated and tortuous (Fig. 2b) and left-sided DJ stent was placed. A lower midline incision was given and a large cystic mass was found to adhere to the sigmoid colon. Adhesiolysis was done and the cyst was seen extending into the inguinal canal. Another incision was given over the left inguinoscrotal region and cord structures were separated from the cyst. A large cystic lesion in the abdomen extending into the inguinoscrotal region in a dumbbell shape was clearly visible (Fig. 3). The abdominal part was totally excised, the scrotal part was partially excised, and the eversion of the remaining tunica vaginalis sac was done. Bassini repair was also performed.

The post-operative period was uneventful and the patient was discharged on post-operative delirium 3. The histopathological report confirmed the diagnosis of ASH.

DISCUSSION

ASH is a hydrocele that extends into the abdominal cavity forming two intercommunicating sacs. Many terms and hypotheses have been proposed to characterize ASH until the formulation of the

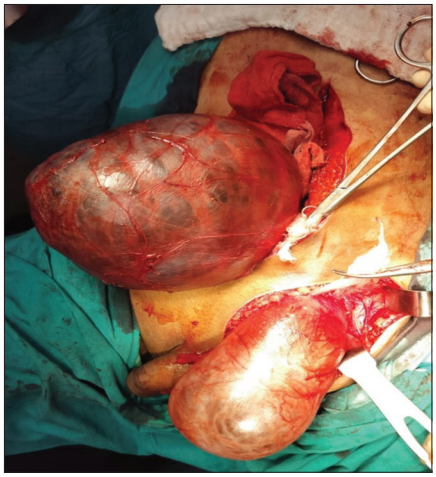

Figure 3: Intraoperative photograph showing abdominal part and scrotal part of abdominoscrotal hydrocele

commonly used current term. ASH is common in age groups <5 years in pediatrics and 60% younger than 1 year [7]. ASH is a congenital anomaly of the processus vaginalis [8]. Mostly, it starts from birth as an inguinoscrotal hydrocele that extends to the abdomen. However, it could be misdiagnosed and pass to adulthood.

Many postulated hypotheses suggest the formation of an abdominal sac. Dupuytren postulated that the abdominal sac is an upward extension of a scrotal hydrocele through the inguinal canal under excessive intrinsic pressure [2]. Jacobson postulated that ASH is an intra-abdominal extension of an infantile hydrocele obliterated processus vaginalis at the internal inguinal ring [5]. Roller suggested that two co-existing hydroceles such as an encysted hydrocele of the cord and an ordinary hydrocele may form ASH, but he did not explain how intercommunication occurs. This hypothesis may explain the cases of ASH with separated sacs [9]. Macewen postulated that a preformed peritoneal sac as a persistent patency of the deepest portion of the funiculo-vaginal sheath inside the pelvis is responsible for the abdominal sac which distends forming an intraabdominal hydrocele and extends downward.

Clinically, ASH starts as a painless and progressively increasing scrotal or inguinoscrotal swelling followed by another abdominal swelling without a definite timing for the start or detection [10]. Contralateral simple hydrocele is a common finding with pediatric ASH [5]. Cryptorchidism or testicular ectopia is one of the most common congenital anomalies with ASH [11]. Sporadic urinary and extra-genitourinary congenital anomalies have been reported in association with ASH. Lymphedema is a relatively frequent presentation with ASH. It results from the compression of veins and lymphatics and the co-existence of indirect inguinal hernia with ASH reported in the literature [12].

Diagnosis of ASH is done by clinical examination and imaging techniques. Positive transillumination tests and cross-fluctuation between the abdominal and the scrotal collections are the clinical hallmarks of ASH diagnosis. USG is the first choice to demonstrate the communication between two components; however, in selected cases, USG may be inadequate and in these contrast-enhanced

CT or magnetic resonance imaging could be used to demonstrate the extension of the hydrocele through the inguinal canal into the abdominal cavity. In our case, USG was enough to make the diagnosis, and hence, contrast-enhanced CT was used. The differential diagnoses include spermatic cord lymphangioma, giant hydronephrosis extending into the true pelvis, bladder diverticulum, and pelvic neuroblastoma [13]. Sometimes, ASH may be confused with a large, complete, indirect inguinal hernia [14].

The reported management is by surgical excision. Different approaches have been described like paramedian laparotomy, an inguinal or inguinoscrotal approach. In difficult cases, the pre-peritoneal approach had been described which facilitates the complete removal of abdominal components [2].

CONCLUSION

ASH is a rare cause of abdominoscrotal swelling, which has different etiological hypotheses and multiple clinicopathological variants. Clinical examination and USG are initial modalities sufficient to make diagnoses but CT is required to prove intercommunication and other associated complexities. Since ASH is a rare condition, surgeons should always keep in mind as a differential in lower abdominal cystic mass lesions. Despite available minimally invasive techniques for treatment, complete excision of the sac through open techniques remains the standard approach.

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