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ABDOMINOSCROTAL HYDROCELE IN A 5-MONTH OLD INFANT: CASE REPORT

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ABSTRACT

Abdominoscrotal hydrocele (ASH) is a very rare condition in which the hydrocele sac extends beyond the scrotum to the abdomen via the inguinal canal. This condition is characterised by a large abdominal and scrotal component connected by an isthmus within the inguinal canal. The precise etiology of ASH is not known. Diagnosis can be made clinically and confirmed by ultrasound. Spontaneous resolution is rare and long-standing ASH may lead to complications, thus early surgical intervention is recommended. We present a 5-month-old male infant with a large right cystic inguinoscrotal mass that had been increasing in size since birth.

Keywords: Abdominoscrotal hydrocele, congenital hydrocele, inguinoscrotal mass

INTRODUCTION

Abdominoscrotal hydrocele (ASH) is an unusual condition, characterized by a large scrotal hydrocele, which communicates in an hour-glass fashion with a large "intra-abdominal" component through the inguinal canal. ASH begins as a large scrotal hydrocele during the neonatal period and later expands, first, into the inguinal canal and, finally, into the abdominal cavity during the next few months of life [1,2]. It is the rarest type of hydrocele, with a reported incidence between 0.4% and 3.1% of the paediatric hydroceles [3,4]. Currently, physical examination and ultrasonography are practical diagnostic methods for ASH [5,6]. Patients are usually asymptomatic, but longstanding ASH may lead to complications that are mainly pressure related. These include hydronephrosis, hydroureter, testicular dysmorphism, testicular torsion, effect on spermatogenesis, spontaneous rupture or haemorrhage, and malignant transformation such as mesothelioma due to neoplastic change in peritoneal lining [7-9]. Because spontaneous resolution in ASH cases is rare, early surgical intervention is recommended [3]. Herein we present a 5-month-old male infant with a large right- sided ASH that had been increasing in size since birth.

CASE REPORT

We present a 5-month-old male infant with a large right cystic ASH (Figure 1). The remainder of the examination was normal. Abdominal ultrasound showed unremarkable appearance of the intra-abdominal organs. On the right side scrotum, a large ASH, which extended through the inguinal canal into the pelvis. There was no evidence of bowel herniating through the inguinal canal on right side, and right testicle had unremarkable appearance. The patient underwent surgical repair through an inguinal approach. A dilated cystic dumbbell-shaped mass, which extended from the scrotum to the abdominal cavity above the internal ring, was identified. Needle decompression with was performed to facilitate the dissection, and 100 mL of fluid was evacuated before the mass collapsed completely (Figure 2). Once the vessels and vas deferens were identified and carefully separated from the wall of the sac, the preperitoneal component was excised. The scrotal component, including the testis, was delivered to the operating field and the tunica vaginalis was excised. Post-operative course was uneventful, the patient did well and was discharged home on 4 th post-operative day. The patient is on our follow-up for the past 6 months without any problem.

DISCUSSION

Abdominoscrotal hydroceles are collections of fluid in the tunica vaginalis, which extend from the scrotum to the abdominal cavity. ASH typically present as a scrotal hydrocele associated with an ipsilateral abdominal mass. The nature of the lesion becomes apparent when a mass is felt above the inguinal ring and fluid is seen to move between the abdomen and scrotum on compression of either structure [2]. These rare hydroceles typically begin as ordinary ones and develop after the testicle descends through the inguinal canal to its final destination in the scrotum. It is at this point that the processus vaginalis normally loses its communication with the peritoneal cavity. This gives the hydrocele the potential to extend from the scrotum into the inguinal canal, via the external inguinal ring, and enter into the abdominal cavity after passing through the internal inguinal ring.

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Since the first description by Dupuytren in 1834 when it was called hydrocele en bisac, many titles have been used until Bickle in 1919 suggested the abdominoscrotal hydrocele as a proper descriptive term [10]. ASH is most commonly seen in the pediatric age group of less than five years and second and third decade in adults. The three most commonly proposed theories are a s follows: (1) cephalad extension of a simple hydrocele, (2) high obliteration of processus vaginalis (PPV), and (3) PPV acting as a one-way valve with cephalad extension of hydrocele. However, the most widely accepted theory is Dupuytren's original theory of high intracystic pressure in the scrotal component that leads to cephalad extension through the musculofascial inguinal canal and formation of the abdominal sac [3]. Testicular ectopia or cryptorchidism is the most common congenital anomalies associated with ASH [10]. ASH should be differentiated from hernia, chord lymphangioma, spermatocele, cystic abdominal mass, and ascites. Long-standing ASH leads to pressure-related complication like hydroureteronephrosis, deep vein thrombosis, leg edema, testicular dysraphism, and impaired spermatogenesis and rarely malignant transformation [11]. Accurate physical examination in patients presenting with hydrocele and an abdominal mass could be very suggestive of the diagnosis; compression of the lower abdominal mass will result in enlargement of the ipsilateral scrotal component and vice versa. This is one of the most common diagnostic features of ASH, named "springing back ball" sign [12]. USG abdomen demonstrates encapsulated anechoic fluid collection extending from the abdomen to the scrotal cavity through an inguinal ring. However, there may be a possibility that the relationship between the abdomen and the scrotal sac cannot be clearly delineated on a USG. In such a situation, CT or magnetic resonance imaging through the multiplanar approach may help to delineate the full extent of the ASH. The surgery is often difficult because of adherence of the hydrocele to the cord structures [9,13]. Dissection of the distended and thickened tunica vaginalis is often facilitated by aspiration of the hydrocele fluid [1,3,8]. In our experience, an inguinal approach provides excellent exposure and access for both the abdominal and scrotal components through a small incision in the inguinal skin crease line, which is cosmetically acceptable. Additionally, intraoperative fluid decompression enables the excision of the majority of the wall sac, while allowing identification and preservation of the vessels and vas deferens without compromising the testis. Optimal time for surgery is unknown, but it has been described as early as 8 weeks, and surgical complications are usually minor, most commonly being inguinal/scrotal swelling [3,5]. Regardless of the surgical approach, recurrences are not reported in the literature [3].

CONCLUSIONS

ASH is a rare lesion reported mainly in single case reports and rare cause of abdominoscrotal swelling, which has different etiological hypotheses and multiple clinicopathological variants. Complete excision of the sac via inguinoscrotal incision remains the standard approach.

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CONFLICT OF INTEREST:

The authors declare that there is no conflict of interest.

The patients' parents gave informed consent prior to child's inclusion in case report.

FIGURES

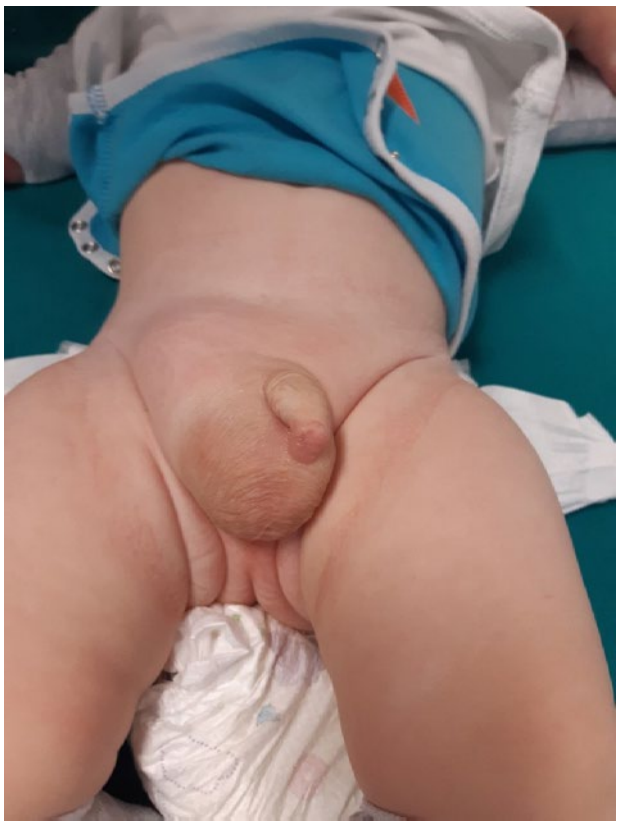

Figure 1. ASH with abdominal and scrotal components

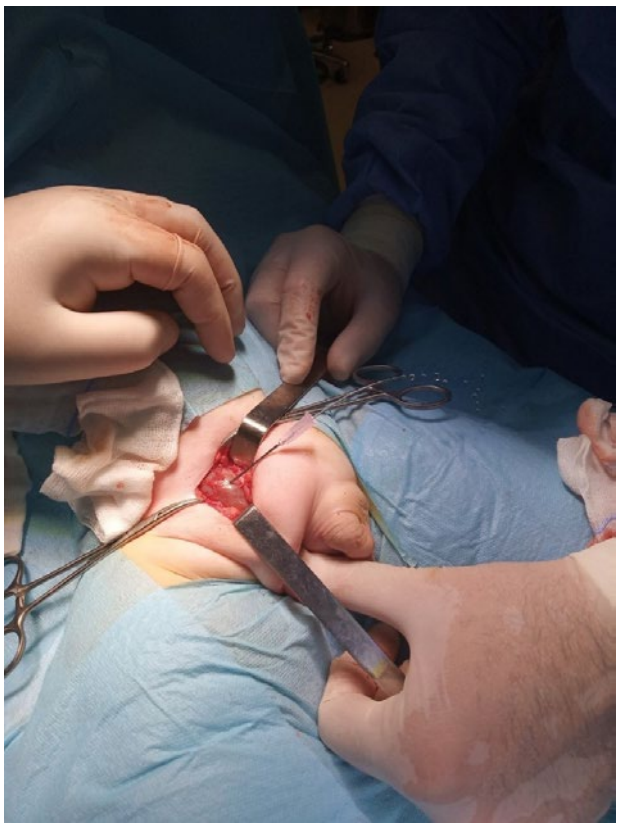

Figure 2. Intraoperative fluid decompression of the mass