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## Large abdominoscrotal hydrocele: Uncommon surgical entity



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### ABSTRACT

**INTRODUCTION:** An abdominoscrotal hydrocele (ASH) consists of a large inguinoscrotal hydrocele which communicates in an hour glass fashion with a large “intraabdominal component”. Mostly affects single testis but very rarely can present bilaterally.

**PRESENTATION OF CASE:** We are presenting here a young 25 year old patient with large right sided scrotal swelling encroaching over lower abdomen. Clinically it was abdominoscrotal hydrocele which was confirmed with CT abdomen and later on subjected for surgery.

**DISCUSSION:** Abdominoscrotal hydrocele is rarest type of hydrocele; first described by Dupuytren. The etiology of ASH is unknown; however, different theories have been described in literature to explain the pathogenesis. Diagnosis of ASH is done by clinical examination and is confirmed by radiological examination. Though ultrasonography is the first choice, in few selected cases contrast enhanced computerized tomography or magnetic resonant imaging may be helpful for more anatomical delineation. It may present with various complications secondary to pressure exerted by the components of the ASH. Surgical excision of the sac is the only definitive treatment option. There is no role of conservative treatment. Sometimes, decompression of the cyst needed to ease the dissection of the sac.

**CONCLUSION:** Abdominoscrotal hydrocele differential should be considered while dealing with large lower abdominal swelling along with scrotal swelling.

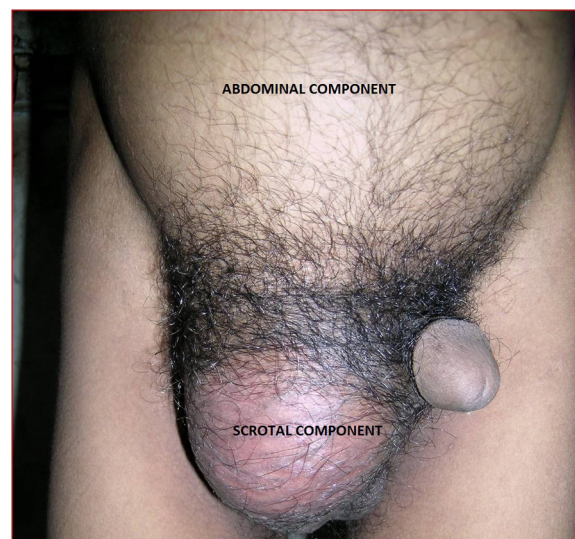
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### 1. Introduction

Abdominoscrotal hydrocele (ASH) is a rare condition consisting of a large inguinoscrotal hydrocele which communicates in an hour glass fashion with a large “intraabdominal component”. The intraabdominal component lies deep to the narrow internal ring, but superficial to the peritoneal cavity proper. Abdominoscrotal hydrocele can affect either single or both testes. Bilateral abdominoscrotal hydrocele is very rare condition.

### 2. Presentation of case

25 year male presented with a right side scrotal swelling for 5 years. He had noticed progressive lower abdominal distension for one year but there were no bowel, bladder symptoms. On clinical examination, there was non-transilluminant, very large, and tense and fluctuant right sided scrotal swelling encroaching upon lower



**Fig. 1.** Photograph showing abdominal & scrotal components of ASH with deviation of penis on opposite side.

abdomen causing deviation of penis (Fig. 1). The right testis could not be felt separately from the swelling. There was a tense, cystic

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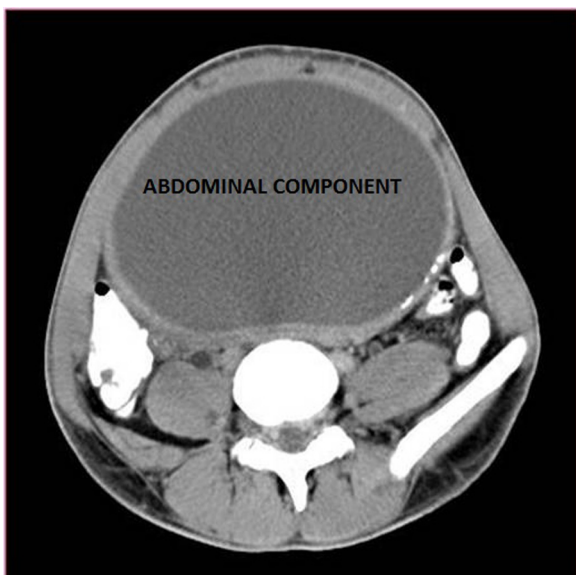


Fig. 2. Computerized tomography showing large abdominal component of ASH.



Fig. 3. Computerized tomography showing hour glass appearance of ASH.

hypogastric lump with positive cross fluctuation with the scrotal swelling.

Contrast enhanced computerized tomography of abdomen and pelvis showed a well defined cystic lower abdominal swelling extending in to the scrotum through the inguinal canal. The urinary bladder was displaced medially (Figs. 2 and 3).

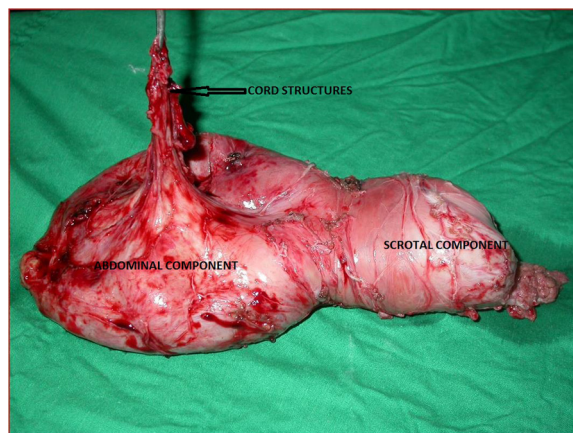


Fig. 4. ASH sac with cord structures after excision.

Through an inguinoscrotal incision the cyst was decompressed and the abdominal component was dissected free from the urinary bladder, right ureter and the peritoneum through the widened deep ring. The inguinal component was excised along with cord structures in view of an atrophic testis (Fig. 4).

Histopathology of the excised sac demonstrated chronic inflammation. Postoperative course was uneventful and patient is asymptomatic at two year follow up.

### 3. Discussion

Abdominoscrotal hydrocele is rarest type of hydrocele. Though first described by Dupuytren as “hydrocele en bisac” in 1934; it was characterized and defined by Bickel in 1919 as abdominoscrotal hydrocele [1,2]. The first pediatric case was reported by Syme [1]. The exact etiology of abdominoscrotal hydrocele is not known. Many theories such as, valve theory [1,2], diverticulum theory [1], displacement as per Laplace’s law [3] and increased production or decreased resorption of fluid [4] have been described in literature to explain the pathogenesis of this rare surgical entity.

However, the most accepted theory is the one by Dupuytren which suggests that excessive intracystic pressure causes cephalad extension of scrotal swelling through the deep inguinal ring [1]. Brodman described it to be because of high obliteration of processes vaginalis above the deep inguinal ring, leaving a high infantile hydrocele [1].

Abdominal part of ASH may extend into the retroperitoneum or preperitoneal space of retzius and may simulate a hernia of urinary bladder. Sometimes abdominal component is so large that it may reach up to inferior pole of the kidney [3]. In our case the preperitoneal extension caused a large hypogastric swelling.

Diagnosis of ASH is done by clinical examination aided by imaging techniques. Clinically, cross fluctuation test of the swelling is positive. In this test, pressure applied over the abdominal swelling causes increased pressure in the scrotal component and vice versa. It is also called “springing back ball” [1,5]. Clinically if a scrotal swelling is present in combination with abdominal swelling just above the inguinal ligament, then ASH should be suspected. Ultrasound is the first choice to demonstrate the communication between two components however in selected cases ultrasonography may be inadequate and in these Contrast enhanced computed tomography or magnetic resonance imaging could be used to demonstrate extension of the hydrocele through the inguinal canal into the abdominal cavity [2,3]. In our case, a contrast enhanced computed tomography gave us a complete diagnosis. Axial MRI along with MR angiography is useful in detecting vascular complications like deep vein thrombosis [6].

Longstanding ASH may lead to complications which are mainly pressure related. Few of the complications are hydronephrosis, hydroureter, appendicitis, testicular dysmorphism, deep vein thrombosis, leg edema, testicular torsion, effect on spermatogenesis, testicular upmigration, spontaneous rupture and hemorrhage and malignant transformation like mesothelioma due to neoplastic change in peritoneal lining [2–4]. In our patient testicular atrophy had occurred due to the pressure effect of the swelling.

Differential diagnoses include spermatic cord lymphangioma, giant hydronephrosis, bladder diverticulum, and pelvic neuroblastoma [2]. Sometimes ASH may be confused with large, complete, indirect inguinal hernia [3].

Surgical excision is the only therapeutic option for ASH. There is no role for conservative treatment [7]. Different approaches have been described like paramedian laparotomy, an inguinal or inguinoscrotal approach [1]. Surgery can also be carried out through scrotal approach with laparoscopic assistance [1]. Decompression of the cyst aids in excision [8]. In difficult cases preperitoneal approach had been described which facilitates complete removal of abdominal component and also helps in mobilization of spermatic vessels for the purpose of orchidopexy [7]. We have also followed the preperitoneal approach via inguinoscrotal incision to excise both the component in total.

#### Conflict of interest

No conflict of interest.

#### Guarantor

Dr. Aparna Deshpande.

#### Consent

Yes.

#### Author contribution

Dr. Promod Kamble data collection writing the paper.  
Dr. Arpana Desh Pande study concept and design valuable support helped in writing the paper.  
Dr. Vinay Thapar helped in data collection and analysis.  
Dr. Krishanu Das data collection, writing the paper.

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