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CASE REPORT

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The abdominoscrotal hydrocele in the infant – case report

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Summary

Background: An abdominoscrotal hydrocele (ASH) is a rare lesion and should be considered in the differential diagnosis of abdominal cystic lesions in boys.

Case Report: We report a case of a 4-month-old boy with a thin-walled, anechoic cystic abdominal mass in ultrasound (US) examination. As the size of the lesion increased in follow-up US after one month, computed tomography (CT) was performed. CT demonstrated a communication between a cystic mass in the abdomen and a right scrotal hydrocele – an abdominoscrotal hydrocele (ASH).

The patient had no symptoms and was observed by means of US examination. After the next 4 months, the size of the ASH decreased remarkably.

Conclusions: This rare entity should be considered in differential diagnosis of cystic abdominal masses in boys.

Spontaneous resolution of ASH is rare, but asymptomatic patients can be followed up before surgery.

Keywords: Abdominoscrotal Hydrocele • Child • Cystic Mass

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Background

An abdominoscrotal hydrocele (ASH) is a rare lesion and should be considered in the differential diagnosis of abdominal cystic lesions in children.

We report a case of a male infant with a cystic lesion found incidentally in the abdomen. We discuss the diagnostic algorithm, differential diagnosis and therapeutic strategy for the diagnosed abdominoscrotal hydrocele.

Case Report

The first abdominal ultrasound in a 6-week-old boy with urinary tract infection showed no pathological changes, whereas the physical examination demonstrated a small, right scrotal hydrocele.

After 3 months, the abdominal ultrasound revealed a thin-walled, anechoic cystic lesion with dimensions of 53×27×20 mm (Figure 1), located on the right side, above the bladder. The patient had no symptoms related to the lesion.

One month later, the control US examination demonstrated that the lesion slightly expanded, reaching the dimensions of 60×43×26 mm (Figure 2); computed tomography (CT) of the abdomen was performed in order to examine the pathology more thoroughly. The CT scanning performed after intravenous contrast administration demonstrated an anechoic, cystic, thin-walled and fluid-filled lesion in the right iliac fossa, communicating through the inguinal canal with a right scrotal hydrocele – an abdominoscrotal hydrocele (ASH).

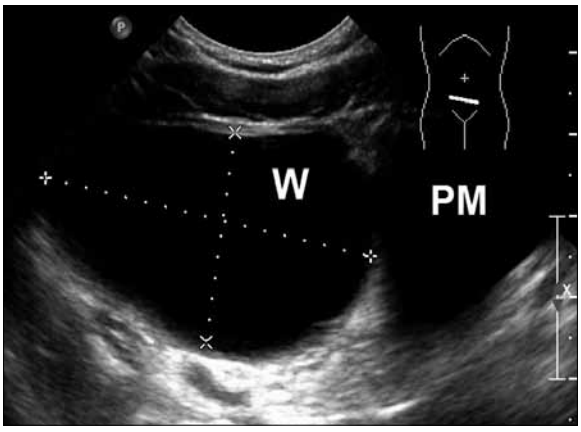

Figure 1. Abdominal US: on the right side, above the bladder a cystic thin-walled mass, measured 53×27×20 mm with homogenous anechoic content (W – ASH, PM – vesica urinaria).

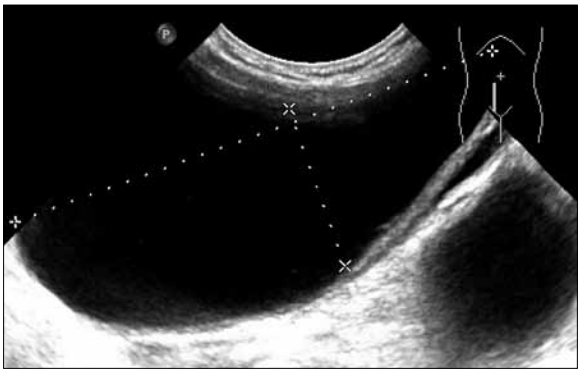

Figure 2. Abdominal US 4 weeks later: a cystic thin-walled mass significantly larger (60×43×26 mm).

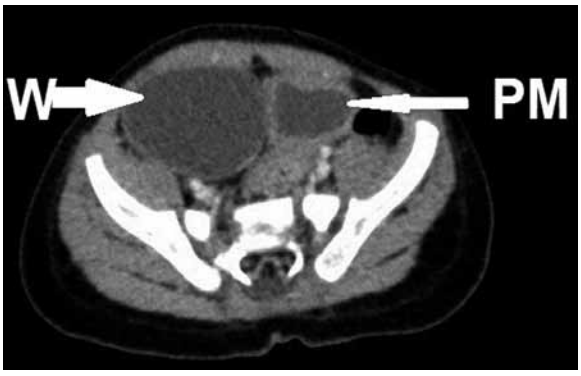

Figure 3. Axial contrast enhancement abdominal CT: a cystic, thin-walled, fluid filled, unenhancement mass in the right fossa iliaca (W – ASH, PM – vesica urinaria).

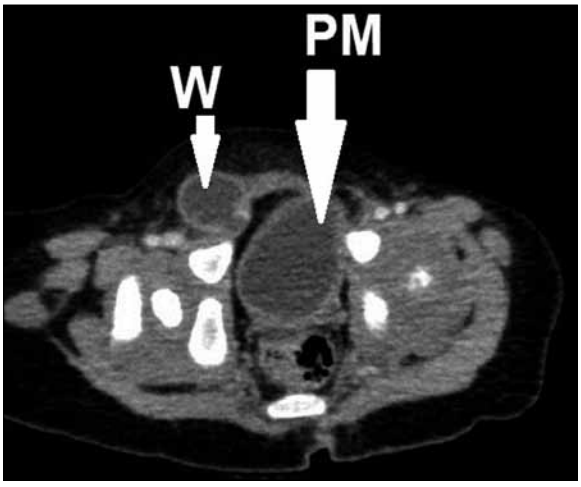

Figure 4. Axial contrast enhancement abdominal CT: a cystic, thin-walled, fluid filled, unenhancement mass in the right inguinal canal (W – ASH, PM – vesica urinaria).

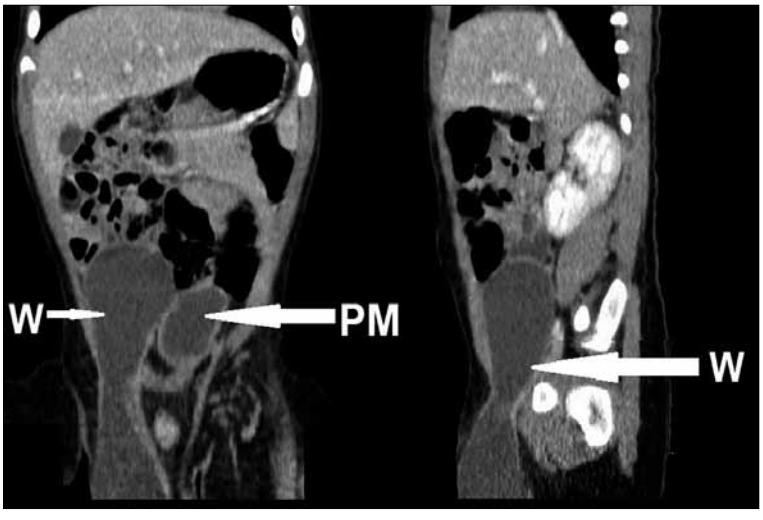

Figure 5. Coronal and sagittal reformatted contrast enhancement abdominal CT: a cystic, thin-walled, fluid filled, unenhancement mass in the right lower quadrant that continous and communicate through the inguinal canal with a right hydrocele – an ASH. Size: 108×48×35 mm. (W – ASH, PM – vesica urinaria).

Approximate dimensions of the lesion were: 108×48×35 mm (Figures 3–5).

In addition, the US examination of the scrotum was performed, which showed a right scrotal hydrocele and displacement of the right testicle into the inguinal canal (Figure 6), while the left testicle was in the scrotum. Both testicles were of the normal size and echogenicity. The cystic mass in the abdomen did not cause any discomfort. During a 4-month follow-up, the size of the abdominoscrotal hydrocele decreased significantly in US.

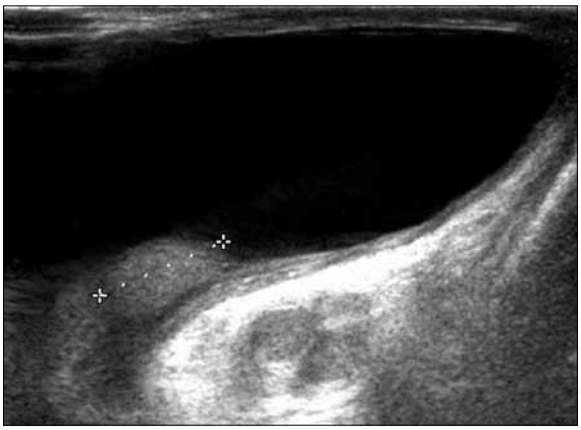

Figure 6. Scrotal US: right hydrocele and right testis in the inguinal canal, normal in size and echotexture.

Table 1. The most common cystic abdominal masses in boys.

Mesenteric cyst
Gastrointestinal duplication
Large hydronephrosis
Polycystic kidney dysplasia
Bladder diverticulum
Cystic tumor
Lymphangioma
Teratoma
Hamartoma

Discussion

An abdominoscrotal hydrocele is a congenital pathology involving a scrotal hydrocele expanding through the inguinal canal and reaching the abdominal cavity (*pars abdominalis*). A simple hydrocele is commonly diagnosed, whereas an abdominoscrotal hydrocele is rare and should be differentiated from other cystic lesions of the abdominal cavity in children (Table 1) [1–6].

In US examination, cystic lesions in the abdominal cavity should be differentiated from large hydronephrosis, polycystic kidney dysplasia and bladder diverticulum.

Teratoma and hamartoma are lesions containing, apart from a cystic part, a solid component and often – calcifications.

The other before mentioned pathologies can be more difficult to differentiate. In the case of gastrointestinal duplication, the cyst wall is typically thicker and two-layer, but usually without any connection with the gastrointestinal tract.

A cystic tumor (except for the mentioned teratoma) is a pathology derived from the abdominal organs or retroperitoneal space, which may be indicated by diagnostic imaging.

A mesenteric cyst and lymphangioma are described by some authors as pathologies of a similar origin, i.e., benign, congenital malformations resulting from sequestration of the lymphatic system.

Table 2. Reported complications of abdominoscrotal hydrocele.

Oedema of the lower limb
Hydronephrosis
Malignant mesothelioma of the tunica albuginea
Inguinal hernia
Dysmorphic testis
Disorders of spermatogenesis
Appendicitis
Bleeding inside the abdominoscrotal hydrocele
Inflammation of the abdominoscrotal hydrocele
Cryptorchidism
Crossed testicular ectopia

Most of these abnormalities are diagnosed in early childhood. They are rarely located in the abdominal cavity (intra- or extraperitoneally), and in such a case, they are usually found in the mesentery. These lesions grow slowly and give symptoms at larger sizes, when compressing the abdominal organs [7]. In diagnostic imaging they are large, thin-walled cysts with compartments, rarely a single cyst. Such cysts contain fluid or fat, but no solid parts. The cystic wall and septa get enhanced in CT scanning after contrast administration [8].

ASH and lymphangioma may be similar in diagnostic imaging; however, in case of lymphangioma, regression is not observed, which, on the contrary, is one of the features characteristic for hydrocele [9,10].

ASH is more common in adults [1]. When it is small, it can be overlooked and not diagnosed [1,9]. There have been reports on sudden enlargement of an abdominoscrotal hydrocele [7] and a hydrocele already diagnosed *in utero* [6]. In very rare cases ASH can be bilateral, and it may be located intra- or extraperitoneally in the abdominal cavity [1,2,5,6,10,11].

The intra-abdominal part can give the mass effect and compress the adjacent structures. However, it may also be asymptomatic [12], as in the patient presented. An abdominoscrotal hydrocele is a benign lesion, but numerous related complications have been reported (Table 2) [1–5,9,10].

Ultrasound examination is a sufficient method to diagnose ASH. CT scanning should be performed if a definitive diagnosis cannot be established on the basis of ultrasound results [1–5,10]. Urgent surgical treatment is recommended [1,2,4,9–11], but in some cases, it is possible to delay surgery and observe the lesion [9–11].

Conclusions

This rare entity should be considered in differential diagnosis of abdominal cystic masses in boys.

Spontaneous resolution of ASH is rare, but surgical treatment can be postponed in asymptomatic patients.

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