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Address: 1 Kraljice Natalije Street, Belgrade 11000, Serbia
☏ +381 11 4092 776, Fax: +381 11 3348 653
E-mail: office@srpskiarhiv.rs, Web address: www.srpskiarhiv.rs

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Case Report / Приказ болесника

Zlatan Elek[1†], Boban Mitrović[1], Saša Dimić[1], Aleksandar Božović[1], Jovan Mladenović[2], Zoran Marjanović[3]

Bilateral abdominoscrotal hydrocele in childhood

Билатерална адбоминоскротална хидроцела у дечјем узрасту

[1]Kosovska Mitrovica Clinical Hospital Centre, Department of Pediatric Surgery, Kosovska Mitrovica, Serbia;
[2]University of Priština, Faculty of Medicine, Kosovska Mitrovica, Serbia;
[3]Niš Clinical Centre, Clinic for Children's Surgery and Orthopedics, Niš, Serbia

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† **Correspondence to:**
Zlatan ELEK
Anri Dinana b. b., 38220 Kosovska Mitrovica, Serbia
Email: **drzelek@gmail.com**

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SUMMARY

Introduction Bilateral abdominoscrotal hydrocele is a rare entity in childhood. The etiology of abdominoscrotal hydrocele has not been fully clarified. The diagnosis is based on clinical appearance, ultrasound and magnetic resonance examination. Treatment is surgical.

Case outline The paper presents an eight-month-old boy who was admitted at the department of pediatric surgery due to bilateral swellings in the scrotum. The changes were observed in the third month and the diagnosis of bilateral abdominoscrotal hydrocele was confirmed on the scrotum ultrasound examination. In the sixth and eighth month of life, the changes were significantly increased, the magnetic resonance of the abdomen and the small pelvis was performed, and the bilateral abdominoscrotal hydrocele was successfully treated with surgical inguinal approach. The operative and postoperative course was uneventful.

Conclusion In the paper we presented a rare form of hydrocele in childhood, as well as diagnostic evaluation that involved ultrasound and magnetic resonance examination. Surgical treatment by inguinal approach is also presented.

Keywords: bilateral; abdominoscrotal hydrocele; magnetic resonance

САЖЕТАК

Увод Билатерална абдоминоскротална хидроцела је редак ентитет у дечјем узрасту. Етиологија абдоминоскроталне хидроцеле није у потпуности разјашњена. Дијагноза се поставља на основу клиничке слике, ултразвучног прегледа и магнетне резонанце. Лечење је хируршко.

Приказ болесника У раду је приказан дечак стар осам месеци који је примљен на одељење дечје хирургије због обостраног отока у пределу скротума. Први пут промене уочене у трећем месецу старости, а дијагноза је потврђена на основу ултразвучног прегледа скротума и мале карлице. На контролним прегледима у шестом и осмом месецу старости промене су се значајно увећале , урађена је магнетна резонанца абдомена и мале карлице и предузето оперативно лечење. Оперативни и постоперативни ток протекли су уредно.

Закључак У раду смо приказали један од ретких случајева хидроцеле у дечијем узрасту, као и дијагностичку евалуацију која је обухватала ултразвучну дијагностику и магнентну резонанцу. Такође је приказано хируршко лечење ингвиналним приступом.

Кључне речи: Билатерална; абдоминоскротална хидроцела; магнетна резонанца

INTRODUCTION

Abdominoscrotal hydrocele (ASH) is a rare form of hydrocele in children. Dupuytren was the first to describe it in 1834. Bickel introduced the term “abdominoscrotal hydrocele” in 1919. The reported incidence of ASH is 0.17–3.1% of hydroceles [1].

ASH has shape of an hourglass and is made up of two parts: inguinoscrotal part and the abdominal part which intercommunicate through the deep (internal) inguinal ring. The etiology and pathogenesis of ASH are not currently clarified. The diagnosis is based on clinical appearance, ultrasound, and magnetic resonance examinations [2].

The treatment of ASH is surgical. Generally, as in all hydroceles in children, the inguinal approach is considered to be standard, although there are cases in which operation was done scrotal approach. The paper presents a case of bilateral abdominoscrotal hydrocele that was surgically treated by inguinal approach [3, 4, 5].

CASE REPORT

We present an eight-month-old boy who was admitted the department of pediatric surgery for a surgical intervention.

The first time the patient was admitted to examination at the age three months because of a bilateral swelling in scrotum. Clinical examination showed both testicles in the scrotum and bilateral hydrocele (Figure 1). An ultrasound exam of scrotum, pelvis, and urinary tract was performed. The diagnosis of ASH on the left side, and hydrocele on the right side was established. Urinary tract was normal. Control exam was scheduled in three months. An ultrasound check-up exam scrotum and pelvis was done in the sixth month. A 36-milimeter wide bilateral abdominoscrotal hydrocele was diagnosed, extending upward through the inguinal canal into the abdominal cavity, with a diameter of 56mm on the left side and a diameter of 38mm on the right side. The proximal p art of hydrocele covered and compressed the urinary bladder. Since the hydroceles have enlarged from the previous examination, an MRI of the abdomen and pelvis was performed. The MRI findings showed liquid deposits in scrotum with a maximum diameter of 58mm on the left side and 40 mm on the right side. The described changes extended through the inguinal canal, prevesically w compressing the urinary bladder and reaching the *common iliac* artery branches, corresponding to abdominoscrotal hydrocele (Figures 2 and 3).

The child was admitted at the department and prepared for surgical intervention. The surgical intervention was done under the usual conditions of endotracheal anesthesia for the inguinal approach (Figures 4 and 5).

Operative and postoperative courses were uneventful. Wounds healed *per primam intentionem.* Stiches were removed the seventh postoperative day when the child was released. Regular checkups on the 7^{th}, 14^{th} and 30^{th} day after the operation show the regular clinical findings (Figure 6).

DISCUSSION

The exact etiology of ASH is unclear. Multiple theories have tried to explain ASH. According to Dupuytren, excessive distension of tunica vaginalis dislocates the hydrocele upwards through the inguinal canal into the abdomen leading to the formation of the abdominal mass. A second theory suggests that the scrotal hydrocele spreads to the abdomen using the valvular mechanism *peritoneal vaginal process,* when the intrascrotal pressure becomes high. The third theory postulates the presence of a preformed congenital peritoneal diverticulum with an underlying anatomic abnormality of the preexisting abdominal sac [5, 6].

ASH looks similar to an inguinoscrotal hernia, and the adequate diagnosis is based on ultrasound and magnetic resonance findings. If a relationship between the cystic abdominal mass and the hydrocele is not clearly defined by ultrasound, the traditional modality for imaging the abdomen and the scrotum in a young child magnetic resonance or computed tomography should be considered. ASH is sometimes complicated by other pathological conditions. Estevão-Costa recorded acute bleeding in ASH. Velasco reported malignant mesothelioma of tunica vaginalis in ASH. Gentile and his co-workers quoted that ASH can be a cause of ureterohydronephrosis in children [7,8,9].Testicular dysmorphism most probably because of the increased hydrocele pressure has been reported in ASH cases.

Vaos et al. [12] reported that 30,1% of infants with unilateral ASH had contralateral testicular abnormalities like simple hydrocele, undescended testis, intraabdominal testicular torsion and testicular regression. Dandapat et al. [11] noted arrested spermatogenesis in 18% of adults with abdominoscrotal hydrocele.

Abdominal mass of hydrocele can cause compression of adjacent structures leading to oedema of lower limbs and hydronephrosis, as the most frequent complications [1].

Secondary ureterohydronephrosis, lymphedema, acute bleeding, cryptorchism, transversal testicular ectopy, and pretesticular malignant mesothelioma can be joined with ASH [10]. Other differential diagnostic entities are mesenteric and enteric duplications, massive hydronephrosis with extension into pelvis, bladder diverticulum, and cystic ovarian neoplasm [5].

The treatment of ASH is surgical, although there are cases of spontaneous regression. Some authors recommend early correction, between 6-12 months of age to prevent testicular abnormalities like testicular dysmorphism .In 2006, Upadhyay et al. report a case of spontaneous resolution of ASH[12]. In the same year, De Renzo and Barong underline the natural remission of the intraabdominal pouch in a case of infantile [3, 12].

The operative approach to resection of an ASH depends on the size of the abdominal component of the sac. There are reports in the literature of resection solely through an inguinal approach [5, 13].Others surgical techniques described include the intraperitoneal, preperitoneal, and scrotal approach. Both the preperitoneal approach described by Luks et al and the scrotal approach with laparoscopic assistance described by Kinoshita et al. [13]. The scrotal approach alone was proposed by Ferro, then Belman et al. described Lords modified technique (application of tunica vaginalis) [12].

During surgical intervention special attention is given to the protection of funicular elements and to adequate hemostasis [3, 10]. Surgery in ASH doesn't assume a simple procedure, summarizes

Cuervo et al. Large, tense, protruding, thickened wall hydrocele makes difficult the separation of surrounding structures like spermatic cord elements. Transaction of the vas deferens or difficult hemostasis with postoperative hematoma has been reported. Insufficient excision of the pathogenic tunica vaginalis can result in recurrent hydrocele [3].

ASH is diagnosed by a complete physical examination and successfully treated with surgical inguinal approach. This surgical procedure associated with few intraoperative and postoperative complications.

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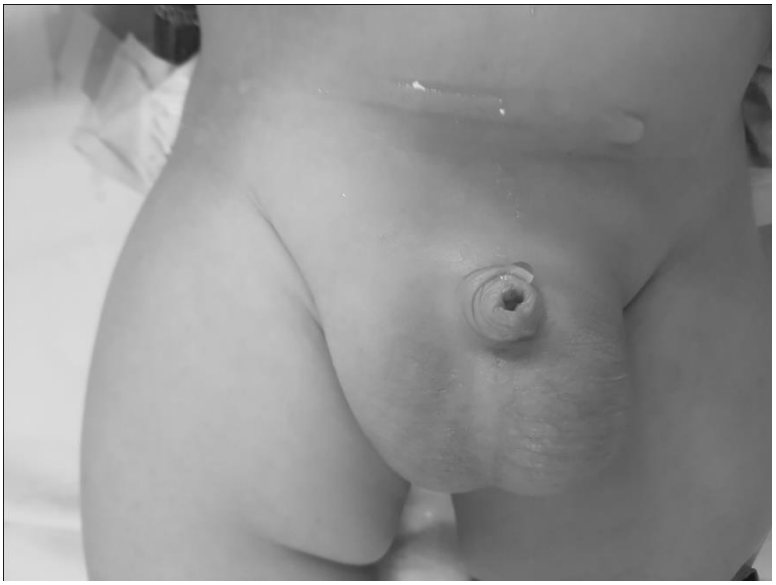

Figure 1. Bilateral hydrocele was diagnosed in the third month of age

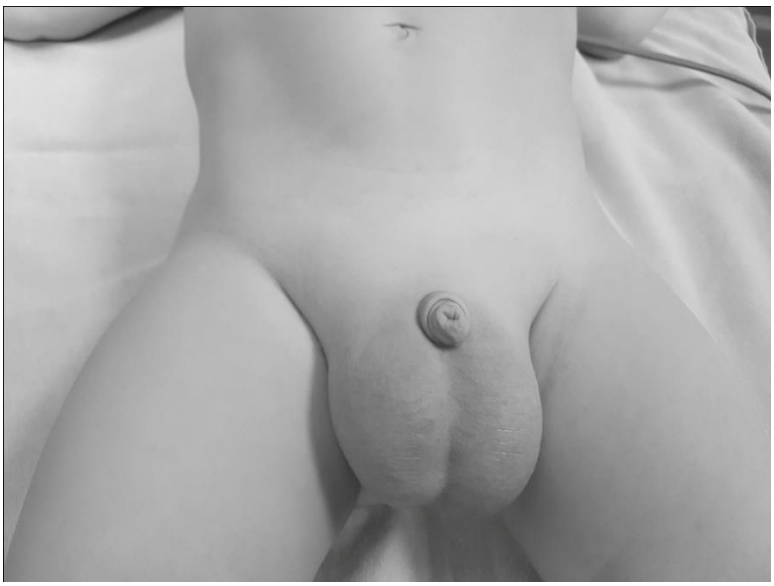

Figure 2. Bilateral hydrocele in the eight month of age

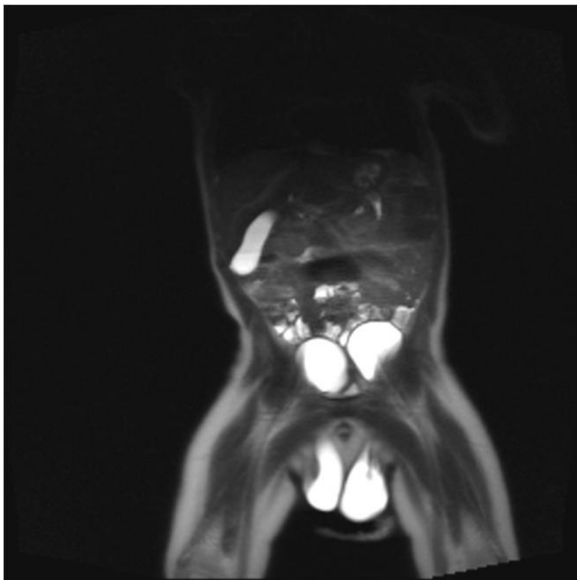

Figure 3. MRI findings of bilateral abdominoscrotal hydrocele

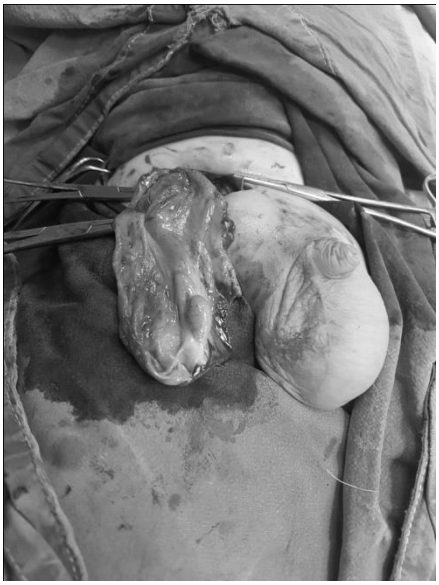

Figure 4. Operative finding after resection of right-sided abdominoscrotal hydrocele

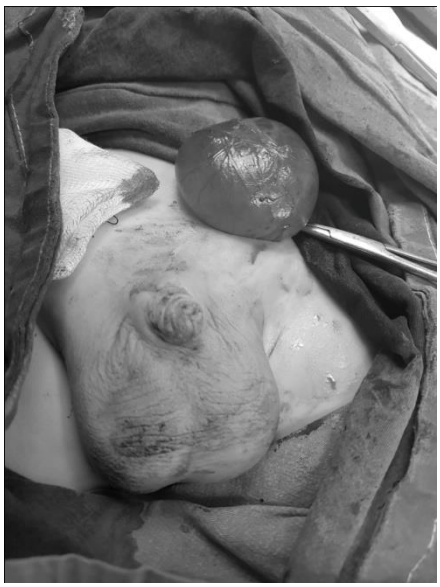

Figure 5. Operative finding after resection of left-sided abdominoscrotal hydrocele – abdominal component

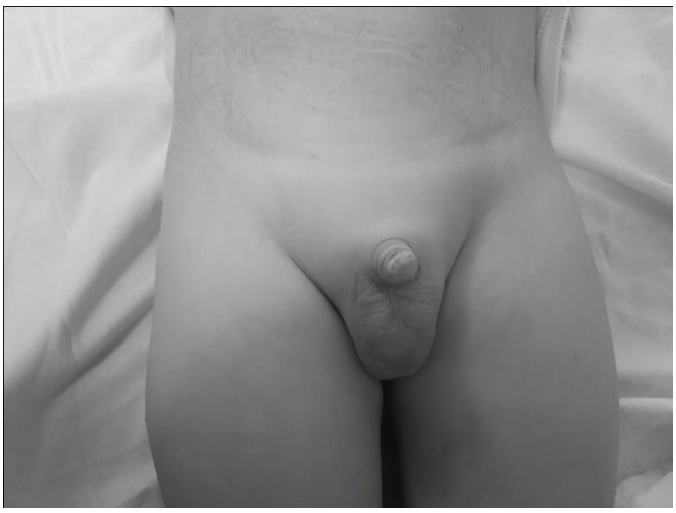

Figure 6. Postoperative finding six months after surgery

