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Case report

Simultaneous indirect inguinal hernia finding in an infant with abdominoscrotal hydrocele: A case report☆

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ABSTRACT

Introduction: Abdominoscrotal hydrocele is a rare condition of vaginal hydrocele. Ipsilateral cryptorchidism is frequently reported as an associated congenital anomaly, however, ipsilateral indirect inguinal hernia has never been reported as an accompanying anomaly.

Case presentation: We reported a case of 6-month-old boy with a huge cystic mass at left scrotum extending upward to lower abdomen passing through inguinal canal. There was an unusual presentation in that this bulging mass could be entirely reduced into abdomen, mimicking patients who presented with reducible inguinal hernia. Intraoperatively, the patient was found that not only abdominoscrotal hydrocele and undescended testes were presented, but also hernia sac was simultaneously encountered. He was successfully treated and recovered uneventfully.

Discussion: According to the natural history of abdominoscrotal hydrocele resembling that of non-communicating hydrocele, it could be treated conservatively without surgery. However, several conditions caused by pressure effect will not be relieved and testicular dysmorphism will also not be corrected. In addition, as presented in this report, should there also be an inguinal hernia, the hernia sac should be left in place without any surgical correction. As a result, we recommend that all patients with abdominoscrotal hydrocele should be surgically treated if there is no contraindication.

Conclusion: The presence of hernia sac might produce a unique presentation. Since we do not know whether the patients who have abdominoscrotal hydrocele will be accompanied by indirect inguinal hernia, the patients should be treated with surgery unless they were in condition in which surgery cannot be performed.

1. Introduction

Abdominoscrotal hydrocele (ASH) is an uncommon type of hydrocele that is mostly found in pediatrics. ASH is characterized by a very large hydrocele extending from scrotal to abdominal compartment. All reported cases in the literature described only ipsilateral undescended testes that accompanied the huge hydrocele, the presence of simultaneous inguinal hernia has only been theoretically discussed, but its presentation has never been reported. We reported a 6-month-old boy with a huge cystic mass at left scrotum extending up to lower abdomen via inguinal canal which accompanied by ipsilateral indirect inguinal hernia and cryptorchidism. We discussed the pathology, diagnosis and treatment of ASH.

This work is compliant with the SCARE 2020 checklist and also has been reported in line with the SCARE criteria [1].

2. Case presentation

A six-month-old boy with global delayed development and hearing problem in bedbound status was transferred from pediatric out-patient department due to progressive increasing size of left scrotal mass. There is no family history of delayed development or abnormal scrotal mass. Physical examination showed inguinal bulging at left groin extending to scrotum. Interestingly, without difficulty, this bulging could be totally reduced at that time although rapidly resilient. At first glance, the suspicion of a very common condition of reducible indirect inguinal hernia has been made. As a result, the provisional diagnosis was made without any suspicion of any rare condition. Neither further

☆ Remark: All markers revealing hospital's name in Fig. 1 are have already been covered with bars.

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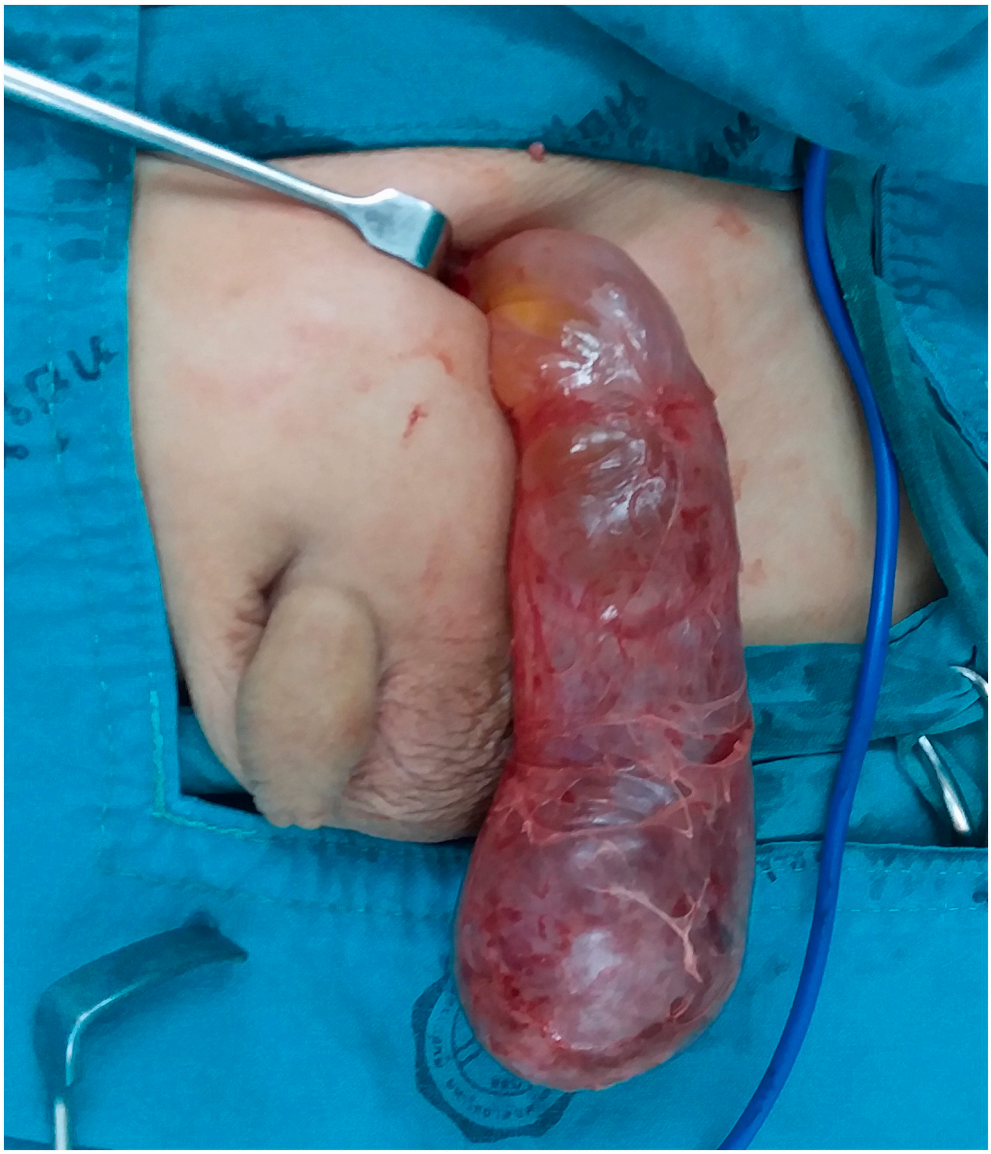

Fig. 1. ASH was dissected and eviscerated via inguinal approach.

examination nor investigation had been performed prior to surgery.

At theater, as the same with other patients, inguinal incision was performed as routine. Surprisingly, instead of hernia sac found inside the inguinal canal, we encountered a huge hydrocele that could be entirely reduced into abdomen [Fig. 1]. This whole condition was dissected and eviscerated onto surgical field without difficulty. Following exploration of the very large hydrocele, we found left testes located at middle part of the lesion [Fig. 2A]. As routine, orchidopexy was then performed relocating this undescended testes along with its vas deferen and vessels into left scrotum. In addition to the accompanying condition, we still have encountered hernia sac proximal to the cephalad part of this hydrocele. After opening the sac, we found that this had connection to abdominal cavity confirming the presentation of simultaneous indirect hernia [Fig. 2B]. Subsequently, high ligation of this sac had completed this operation. The operation was performed by pediatric surgeon. There was no immediate post-operative complication. The patient was in stable condition and discharged a day later [Fig. 3A]. According to a poor compliance, nine months later, we incidentally met this patient again coming for another chief complaint and had an opportunity to take a photo. With a thorough history taking and examination, there was no recurrence but some tissue scarring make it prominence at groin resembling recurrent inguinal hernia [Fig. 3B]. We tried to follow-up this scarring, unfortunately, we have lost contact to this patient after that time.

3. Discussion

ASH constitutes a rare condition found mostly in pediatric age group; however, it seems that there are more cases of ASH currently reported than cases reported in the past. Although some authors had proposed some hypotheses to explain etiology of this condition, the actual pathogenesis of ASH remains controversial [2,3]. Some explain about upward extension of a scrotal hydrocele passing through the inguinal canal due to high fluid pressure arising in tense hydrocele [4–6]. Others believe that there is a partial obliteration of the processus vaginalis acting as one-way valve mechanism [7]. However, whatever hypotheses are real, all reported cases in the literature described only ipsilateral cryptorchidism presented as the most common coincidence. The presence of simultaneous indirect inguinal hernia, although theoretically possible to occur together, has not been reported as a coincidence before. We reported a complicated case of ASH that had not only undescended testis but also the presence of indirect inguinal hernia. The

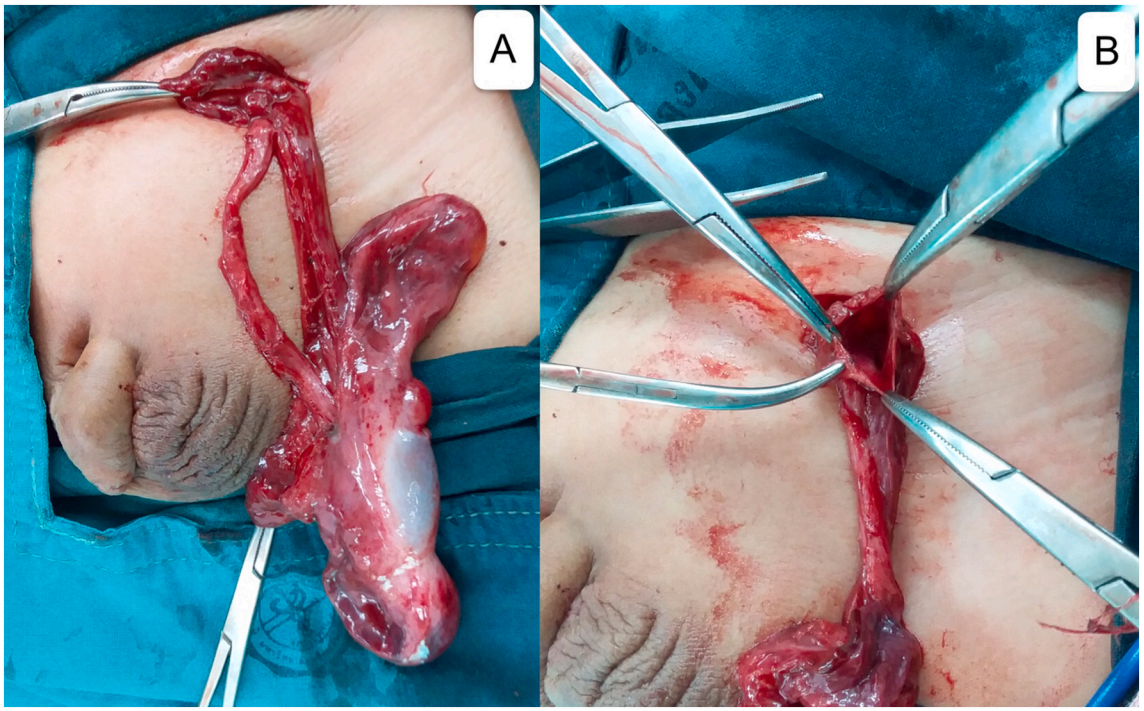

Fig. 2. Intraoperative finding showed cryptorchidism at middle part (A) and hernia sac at the cephalad part of ASH (B).

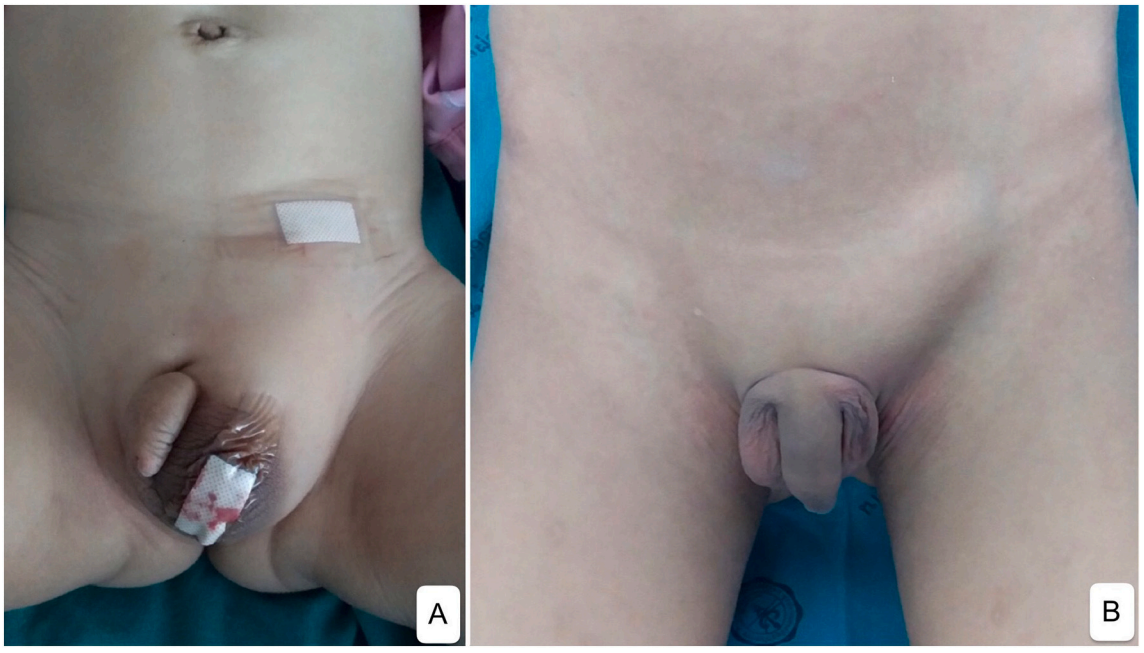

Fig. 3. Immediately after surgery (A) and nine months after surgery (B).

accompanying hernia may explain another theory in that ASH results from downward extension of high-pressure intraabdominal hydrocele through dilated inguinal canal [8,9].

According to the unique presentation of our case that we could reduce the entire hydrocele backward into abdominal cavity mimicking a case of reducible indirect inguinal hernia, we practice this patient as other patients without further special examination or investigation. An examination that will help diagnosis is to apply pressure over the abdomen and then the cross fluctuation between abdomen and scrotum will cause swelling in the scrotum. This pathognomonic sign is referred to as a springing back ball sign [10]. Unfortunately, due to the aforementioned clinical presentation, this sign was not performed. In addition, had we thought of this condition at that time, ultrasonography would have been utilized to confirm the diagnosis as well. Computed tomography scan or magnetic resonance imaging scan is also helpful in a complicated situation [11]. Maybe the plausible explanation that explains why we could push this all ASH backward into the abdominal cavity is the presence of hernia sac in this case. The sac at the proximal part might act as a redundant part and allow the ASH to invaginate or intussuscept upward into abdomen. But it is not a true taxis so the entire

hydrocele resumes rapidly as described in the part of physical examination.

Some complications of ASH secondary to its pressure effect such as testicular dysmorphism [12,13], lower extremity edema [14] or hydronephrosis [15] can simultaneously occur. These conditions can be improved following surgical treatment of ASH. In addition, another concern for a patient with ASH is whether there is a presence of simultaneous malignancy [2]. As a result, surgery is recommended. Although some authors advocated conservative management [16], this option should be limited for only patients with uncomplicated ASH. As we have reported, indirect inguinal hernia can be presented as a coincidence, we would like to emphasize the importance of surgical treatment. In addition, we cannot know in advance whether there is a presence of simultaneous indirect inguinal hernia so we suggest that all patients with ASH should be treated with surgery unless the patient has contraindication for surgery.

4. Conclusion

Generally, testicular dysmorphism is frequently reported as an accompanying anomaly, this is the first time in that indirect inguinal hernia was encountered simultaneously. The presence of hernia sac might produce an unusual presentation as described in this report. We recommend that ASH patient with inguinal hernia should be surgically treated unless they were in a condition in which surgery cannot be performed.

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Ethical approval

The consent form and information sheet using in the process of obtaining a consent were approved by IRB at our institution.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Research registration

Research Registry Identifying Number 7345. (https://www.researchregistry.com/browse-the-registry#home/registrationdetails/6188da96339e71001ee8bbcb/).

Guarantor

Chatporn Boonyapalanant.

CRediT authorship contribution statement

Chatporn Boonyapalanant and Akachai Sinsophonphap collected data and wrote manuscript.

Nol Chuntanaparb and Santapon Chamnarnprai contributed to conceptualization.

Paiboon Sookpotarom contributed to conceptualization, data curation, supervision and editing of the manuscript.

Declaration of competing interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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