



## Pediatrics

## Abdominoscrotal hydrocele: A case report

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## ABSTRACT

Abdomino scrotal hydrocele (ASH) is a very rare condition in which the hydrocele sac extends beyond the scrotum to the abdomen via the inguinal canal. Although various ideas have been proposed regarding this disease, there is still controversy over its etiology. We report a case of abdominoscrotal hydrocele in a one year old boy (Mofid Children's hospital, Tehran, Iran) with history of right sided herniorrhaphy one month ago in other center. Slow growing mass in lower abdomen was noted by parents. For better diagnose, ultrasound and CT scan was performed. In operation missed large abdominoscrotal hydrocele was confirmed.

## 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.<sup>1,2</sup> In the present study we report a misdiagnosis and mismanagement of ASH occurred by first surgeon and fluid gradually increased in the abdominal sac.

## Case report

A one year old boy with history of right sided herniorrhaphy one month ago in other center, was admitted to Mofid Children's hospital, Tehran, Iran. One month after first surgery slow growing mass in lower abdomen was noted by parents. For better diagnose, ultrasound was performed, which showed a large cyst in the right aspect of abdominopelvic region with very mild hydrocele in right side. A cross sectional CT imaging was performed according to surgeon request for better evaluation of the extension of the lesion before the operation.

CT scan demonstrated a large intraabdominopelvic cyst in continuation to right inguinal canal and a little fluid in scrotum. The cyst was measured 97\*90\*53 mm having a volume of approximately 248 ml of fluid. Based on the CT scan, radiologist suggested missed

abdominoscrotal hydrocele in differential diagnosis.

Because of a large cystic abdominal mass and having no evidence of hydrocele in the physical exam (but in ultrasound evaluation, very mild hydrocele in right side was noted), it was decided to perform a laparotomy by surgeon as an approach to unknown abdominal cyst. In operation missed large abdominoscrotal hydrocele confirmed. No hernia was observed in either groin, and both testes were in scrotum (see Figs. 1 and 2).

## 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. As the hydrocele enters the abdominal cavity, it can come to lie in a preperitoneal or retroperitoneal position.

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**Fig. 1.** Coronal Ct-scan Shows Large intraabdominal cystic lesion which is extending to right scrotum. Diagnosis was Abdominoscrotal hydrocele.



**Fig. 2.** Axial Ct-scan Shows Large intraabdominal cystic lesion which is extending to right scrotum. Diagnosis was Abdominoscrotal hydrocele.

Other researchers have noted similar disorder. Latabi et al. reported a case of giant unilateral hydrocele in an 18 year old male, occupying a

large part of the abdomen with urinary symptoms(2). Another study communicates an 11-month-old patient with a right ASH and undescended testis.<sup>3</sup> Singh described a case of ASH compressing the right urinary tract.<sup>4</sup>

Although ASH in childhood was reported in 1878, controversy continues over the etiology of the lesion. There are several theories regarding the source of the fluid in the hydrocele, the most popular ones are<sup>1</sup> continued secretion of fluid into the tunica vaginalis and<sup>2</sup> the possibility that the obliterated processus vaginalis acts as a one-way valve between the hydrocele and the intraperitoneal space.<sup>5</sup>The condition can present itself as a lower abdominal mass. The diagnosis can be established if the mass can be made to increase in size when the scrotal portion of the hydrocele is compressed, which forces fluid from the scrotal portion of the hydrocele to the intraabdominal portion.<sup>1</sup>

In this paper we report a misdiagnosis and mismanagement of ASH occurred by first surgeon and fluid gradually increased in the abdominal sac.

### Conclusion

Abdominoscrotal hydrocele should be considered as a possible cause of inguinal bulging in children during physical exam and also during surgery with atypical findings. US is a useful and accessible method for further evaluation of inguinal canal and differentiation of hernia from hydrocele type.

### Authors' contributions

All the authors have read and agreed to the fin manuscript.

### Declaration of competing interest

The authors declare no conflict of interest.

### References

1. Ferro F, Lais A, Orazi C, Spagnoli A, Caione P. Abdominoscrotal hydrocele in childhood. *Pediatr Surg Int.* 1995;10(4):276–278.
2. Latabi A, Lakmichi MA, Dahami Z, Moudouni MS, Sarf I. Giant abdomino scrotal hydrocele: a case report with literature review. *Pan African Medical Journal.* 2018;31(213).
3. Kara T. Radiologic findings of a giant unilateral abdominoscrotal hydrocele associated with undescended testis. *J Med Ultrason.* 2013;40(1):65–67.
4. Singh D, Aga P, Goel A. Giant unilateral hydrocele “en-bisac” with right hydronephrosis in an adult: a rare entity. *Indian J Urol: IJU: journal of the Urological Society of India.* 2011;27(1):142.
5. Spier LN, Cohen H, Kenigsberg K. Bilateral abdominoscrotal hydrocele: a case report. *J Pediatr Surg.* 1995;30(9):1382–1383.