Hydrocele

52

Hendrik Borgmann

52.1 General Facts

Hydrocele is an abnormal fluid collection in the scrotum between the visceral and the parietal layers of the tunica vaginalis [1]. Pathogenesis of hydrocele is due to an imbalance between secretion and reabsorption of this fluid. On the contrary, inguinal hernia occurs after protrusion of a portion of organs or tissues through the abdominal wall. The incidence of hydrocele is 1–5 % [2] in neonates and 1 % in older boys and men. In most cases, the hydrocele is noncommunicating and fluid disappears by 1 year of age. In older boys and men, it results secondary to testicular torsion, epididymitis, trauma, tumor, and varicocele operation or as a recurrence after primary repair of a communicating hydrocele. Hydrocele is almost exclusively seen in males, but newborn girls can have hydroceles of the canal of Nuck or meconium hydrocele of the labia [3].

52.2 Symptoms and Classification

The main symptom of a hydrocele is a testicular swelling. In the case of a communicating hydrocele, the swelling vacillates in size, usually related to activity. The hydrocele then is small in the morning and becomes progressively larger during the day. On the other hand, a noncommunicating hydrocele does not vacillate in size. A large hydrocele can cause pain and a sensation of heaviness. If the hydrocele occurs secondary or as a reactive process, it may also have preceding symptoms associated with the primary pathology.

H. Borgmann
Department of Urology, University Hospital Frankfurt,
Theodor-Stern-Kai 7, Frankfurt 60590, Germany
e-mail: hendrik.borgmann@kgu.de

A.S. Merseburger et al. (eds.), *Urology at a Glance*,
DOI 10.1007/978-3-642-54859-8_52, © Springer-Verlag Berlin Heidelberg 2014

Hydrocele can be categorized as communicating and noncommunicating. A communicating hydrocele occurs due to an open processus vaginalis that leads to varying amounts of serous fluid in the cavum vaginalis testis. The long-term risk of a communicating hydrocele is the development of an inguinal hernia. In most cases, the hydrocele is noncommunicating because the processus vaginalis obliterates during development. A noncommunicating hydrocele can be categorized according to its location into hydrocele of the testis, hydrocele of the cord, and abdominoscrotal hydrocele. The latter is a rare variant, in which there is a large, tense hydrocele that extends into the lower abdominal cavity [4].

52.3 Therapy

Since hydroceles have a tendency for spontaneous resolution, surgical treatment is not indicated within the first 12–24 months in the majority of infants. Surgery in the early months should be done if there is suspicion of an underlying testicular pathology or of a concomitant inguinal hernia. If a scrotal hydrocele persists beyond 2 years of age, this may be an indication for inguinal surgical correction because the hydrocele is then often accompanied by inguinal hernia. Synchronous contralateral exploration should be considered in case of a past or present history of contralateral inguinal or scrotal pathology [5]. Furthermore, contralateral exploration should be performed in children with increased peritoneal fluid due to a ventriculoperitoneal shunt or due to peritoneal dialysis.

Indications for surgery of a noncommunicating hydrocele are pain, disturbing size, and sensation of heaviness [6]. For hydrocelectomy of the cord, inguinal approach is used. For hydrocelectomy of the testis, two surgical techniques are available. Using Winkelman's or Jaboulay's technique hydrocelectomy is performed with excision of the hydrocele sac. This technique is used for large or thick-walled hydroceles and multilocular hydroceles. Using Lord's technique, the hydrocele sac is reduced by placation sutures. This placation technique is suitable for medium-sized and thin-walled hydroceles.

The flow chart (Fig. 52.1) demonstrates the pathway from diagnosis to therapy.

52.4 Complications

General surgical complications include bleeding and infection [7]. There is a low risk for recurrence of the hydrocele or damage to the epididymitis or vas deferens with infertility. The incidence of testicular damage during hydrocele or inguinal hernia repair is very low.

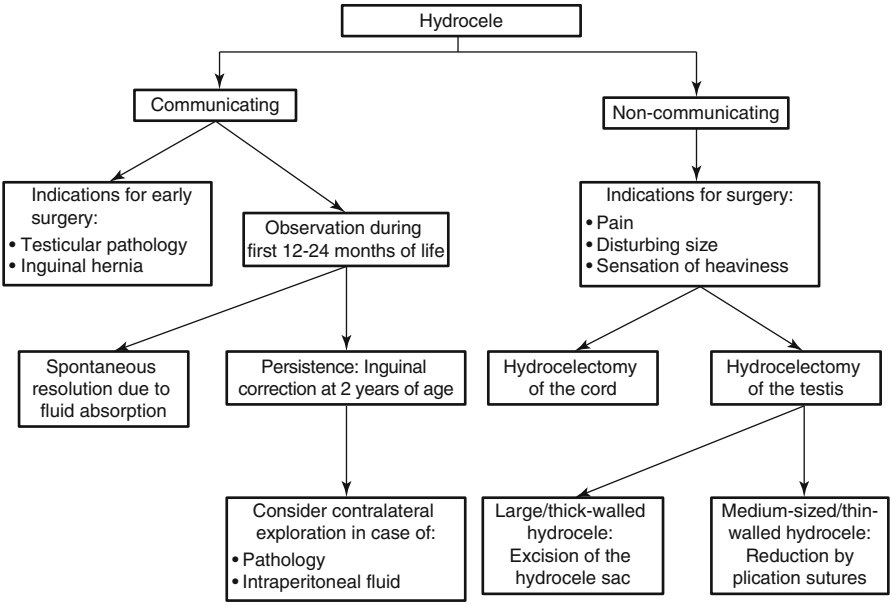

Fig. 52.1 Flow chart demonstrating the pathway from diagnosis of a hydrocele to its therapy

References

1. Kapur P, Caty MG, Glick PL. Pediatric hernias and hydroceles. Pediatr Clin North Am. 1998;45(4):773–89.
2. Ben-Ari J, Merlob P, Mimouni F, Rosen O, Reisner SH. The prevalence of high insertion of scrotum, hydrocele and mobile testis in the newborn infant (36–42 weeks gestation). Eur J Pediatr. 1989;148(6):563–4.
3. Block RE. Hydrocele of the canal of nuck. A report of five cases. Obstet Gynecol. 1975;45(4):464–6.
4. Saharia PC, Bronsther B, Abrams MW. Abdominoscrotal hydrocele. Case presentation and review of the literature. J Pediatr Surg. 1979;14(6):713–4.
5. Antonoff MB, Kreykes NS, Saltzman DA, Acton RD. American Academy of Pediatrics Section on Surgery hernia survey revisited. J Pediatr Surg. 2005;40(6):1009–14.
6. Cimador M, Castagnetti M, De Grazia E. Management of hydrocele in adolescent patients. Nat Rev Urol. 2010;7(7):379–85.
7. Swartz MA, Morgan TM, Krieger JN. Complications of scrotal surgery for benign conditions. Urology. 2007;69(4):616–9.