

Pediatric Urology for the General Surgeon



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KEYWORDS

- Pediatric urology • Inguinal hernia • Hydrocele • Cryptorchidism • Circumcision
- Genitourinary trauma

KEY POINTS

- The decision to perform pediatric inguinal herniorrhaphy depends on accurately distinguishing between a true inguinal hernia, communicating hydrocele, and simple hydrocele.
- Timely orchiopexy for the undescended testis best preserves fertility and endocrine function, while protecting against trauma and minimizing malignancy potential.
- The benefits of neonatal circumcision modestly outweigh the risks of the procedure, thus justifying access to fully informed families.
- Trauma to the genitourinary tract can typically be managed conservatively, recognizing key indications for surgical intervention.

INTRODUCTION

There are several common pediatric urologic conditions that could potentially impact the general surgeon. Particularly in rural areas, access to pediatric urology expertise may be limited. A working knowledge of a few common problems may obviate patient referrals or help the surgeon determine what care can be safely delivered without urology subspecialty. This article reviews the pathophysiology of several problems commonly encountered by pediatric urologists and describes a practical approach for the general surgeon, including the pediatric inguinal hernia or hydrocele, the cryptorchid testis, and circumcision. Additional focus is devoted to genitourinary trauma to help guide management in acute, emergent situations that lack on-site subspecialty expertise.

HERNIA/HYDROCELE

Background

The pediatric inguinal hernia may be most familiar to the general surgeon because of the similar anatomy encountered during indirect inguinal hernias in adults. In utero, the

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processus vaginalis allows the testes to pass through the inguinal canal between 20 to 28 weeks gestation¹ and typically obliterates after testis passage. Persistent patency of the processus may result in a symptomatic hernia or hydrocele. The term “hernia” suggests the passage of abdominal contents, such as bowel or omentum, through the inguinal canal. The term “communicating hydrocele” suggests a smaller opening that allows passage of fluid alone. The incidence of patent processus vaginalis in the pediatric population is between 1% and 5% and occurs more commonly in males.^{2,3} Significant risk factors for inguinal hernia include cryptorchidism, prematurity, and low birth weight.²⁻⁴ There is also an increased familial risk and in a variety of syndromes.^{2,5} These conditions are distinct from the simple hydrocele, meaning that fluid is present within the scrotum, but does not communicate.

Diagnosis

The typical presentation of pediatric inguinal hernia or hydrocele is scrotal or inguino-scrotal swelling. Pain or nausea symptoms are rare, even with tense distention of the scrotum, and testis viability is not compromised. Diurnal size variation of the scrotum is a key diagnostic feature of a communicating hydrocele, classically enlarging after physical activity or toward the end of the day and diminishing by the morning. Swelling that extends into the inguinal canal is more likely to indicate a hernia. Occasionally, abdominal contents can be palpated and manually reduced. Other notable physical examination findings include the “silk glove” sign, which entails palpating the layers of the patent processus vaginalis slipping over each other, and transillumination of the scrotum with a penlight (**Fig. 1**). If the physical examination is normal and the family cannot give a clear history of diurnal size fluctuation, it is reasonable to repeat the examination in follow-up and ask the family to further observe the scrotal size in the mornings and evenings.

It may be challenging to differentiate between a communicating hydrocele and a true inguinal hernia; however, the difference is important. The primary concern with hernia is the risk of bowel incarceration. The signs and symptoms of an incarcerated hernia include erythema, a firm bulge, and pain over the inguinal canal. This condition is an emergency because of the risk of strangulation and peritonitis. This risk should be absent with communicating hydroceles because the patent processus vaginalis is so narrow.

If the ipsilateral testis is not palpable because of a tense, distended scrotum, ultrasonography can confirm the presence of the testis and rule out secondary hydrocele

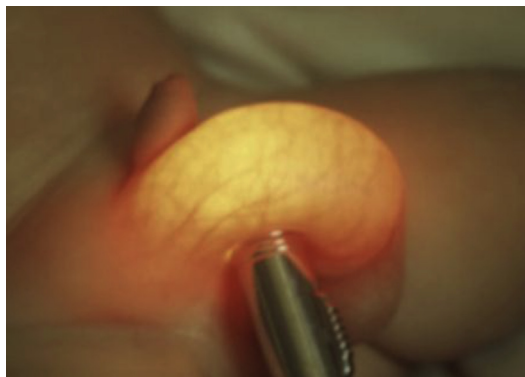


Fig. 1. Transillumination of a left hydrocele with a pen light.

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