Information for Parents About
Undescended Testicle-Cryptorchidism

Prenatal testes develop within the abdominal cavity, and then typically enter the inguinal (groin) canal during their journey to the scrotum at approximately 30 weeks gestation. Each testis follows a pouch of the peritoneum called the processus vaginalis (inguinal hernia sac) through the abdominal wall musculature, and is directed and anchored to the scrotum by the gubernaculum. After descent of the testicle to the scrotum is completed, the processus vaginalis fuses shut, effectively closing off the inguinal canal.

The testis remains undescended and the processus vaginalis remains patent (inguinal hernia) in a small percentage of children. There is some familial propensity for undescended testicles (UDT), but true hereditary factors have not been identified. Incidence of UDT varies with age: Preterm infant (30%), Term infant-newborn (3%), 12 month old infant (1%)

Undescended testicles (UDT) are usually noticed on the initial postnatal physical examination, but sometimes the testicles are initially thought to be present in the scrotum, only to be clearly undescended on later physical examinations. Linear growth of the body (increasing the distance to the scrotum), presence of an inguinal hernia (tethering the testicle upward) and contraction of the gubernaculum (tethering the testicle upward and laterally) are factors that explain these apparent ascended testicles on sequential examinations.

The majority of UDT (90%) are palpable in the inguinal canal or ectopic in the superficial inguinal pouch on physical examination. Of the remaining 10% of UDT that are nonpalpable, half are intra-abdominal (5% of all UDT) and half are atrophic and nonviable (5% of all UDT). Inguinal and intra-abdominal UDT are almost always associated with an inguinal hernia. Inguinal hernias are much less common when atrophic inguinal and atrophic intra-abdominal testicles are detected. Bilateral atrophic UDT present special concerns that require ongoing pediatric endocrinology management.

Physical examination is used most often to diagnose UDT. Radiographic evaluation (ultrasound, CT or MRI imaging) adds only limited information in identifying testicles not apparent on examination. Although testicles can spontaneously descend during the first several months of life, this is unlikely to occur in children with nonpalpable UDT after 6 months of age, and with palpable UDT after 10 months of age. Surgical management of UDT is important to preserve fertility, to limit the risk for testis cancer, and to correct the associated inguinal hernia (often quite large due to the presence of the UDT).

How is a palpable undescended testicle treated?
The best treatment for a palpable UDT is surgery (orchiopexy) to mobilize the testicle from its abnormal position and then to create a new pouch where the testicle is anchored in its proper scrotal position. During this surgery, the processus vaginalis (inguinal hernia sac) must also be fully separated from the spermatic cord in order to achieve adequate length for the testicle to reach the scrotum (inguinal herniorrhaphy). Both a small inguinal incision (2-3 cm) at the lowest inguinal skin crease and a smaller scrotal incision (1.5 cm) are used to accomplish this task.

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Surgical Considerations
Highest surgical success rates for orchiopexy-herniorrhaphy (resulting in a viable testicle with a scrotal position and repaired inguinal hernia) are achieved for palpable UDT (nearly 100% success) with slightly lower success rates achieved for high intra-abdominal UDT (80-90%). Nonpalpable testicles that are already atrophied in the inguinal canal can have persistent seminiferous tubules present (potential risk for testis cancer) in approximately 10% of cases, so these are removed through a small incision in the scrotum. Most orchiopexy-herniorrhaphy procedures (including those with laparoscopy) are completed as an outpatient, so you and your child can expect to return home soon after surgery. The surgical dressings are semi-permeable so fluid will not collect beneath them. Normal bathing can be restarted the day following surgery. The dressings will usually dislodge spontaneously within the first ten postoperative days.

Anesthesia- Analgesia
This surgery is performed under general anesthesia. A pediatric anesthesiologist, who has had special training in the care of children, will continuously evaluate your child throughout the procedure with heart, blood pressure and oxygen monitoring to make sure that the anesthesia remains safe. Analgesics are administered intraoperatively and a prescription for oral pain medicine for use at home will also be provided. Postoperative nausea usually resolves rapidly as the anesthetic vapor is cleared by breathing, but occasionally a medication (Zofran dissolving tablets) may be helpful to control nausea after you reach home.

Postoperative Considerations
Postoperative complications are extremely rare. Potential risks include bleeding or skin infection. Injury to the testicle should not occur, but underdeveloped intra-abdominal testicles may remain somewhat smaller than their companion normally-descended testicle. Breathing problems postoperatively are unlikely, but a much higher perioperative risk is present if your child has had an upper respiratory infection within the two weeks just prior to scheduled surgery. If this occurs, then surgery may need to be cancelled and rescheduled for a later date. Your child’s health is our primary concern.

Testicular Condition-Position  Anticipated Surgical Procedure
Palpable inguinal testicle  Inguinal orchiopexy-herniorrhaphy