Information for Parents About
Undescended Testicles

Undescended testicle (UDT) refers to the condition where a normal scrotal testicular position is not achieved (occurring in approximately 1% of all boys; and up to 30% of premature infants).

Prior to birth, testicles developed within the abdominal cavity, and then pass through muscular layers of the inguinal canal traveling along the inguinal hernia sac to the scrotum (similar to a child moving on a Slip ’N Slide toy). Once the journey to the scrotum is complete (testicle anchored within the scrotum by the gubernaculum), the inguinal hernia sac should spontaneously fuse and resolve (entire process occurring within the first 12 months of life). Thereafter, spontaneous testicular descent and resolution of the inguinal hernia sac is unlikely. Although there is some familial propensity for undescended testicles and persistent inguinal hernia, specific hereditary factors have not been identified.

UDT are usually identified during infancy, but occasionally testicles considered normally descended into the scrotum clearly demonstrate an ectopic inguinal position on subsequent physical examinations (supposed ascended inguinal testicle). Progressive linear growth of the body (increasing the distance from the inguinal canal to the scrotum), presence of a persistent inguinal hernia (tethering the testicle upward), and progressive contraction of the ectopic gubernaculum (securing the testicle into the superficial inguinal pouch upward and laterally rather than into the scrotum) are factors that explain this relatively common situation.

The majority of UDT (90%) are palpable in the inguinal canal or ectopic in the superficial inguinal pouch. Among the remaining nonpalpable UDT (10% of total), approximately half are viable and present in an intra-abdominal location (ranging from the urinary bladder in the pelvis to the kidney in the flank), and half are nonviable and atrophic (testicular nubbin). Inguinal and intra-abdominal UDT are almost always associated with an inguinal hernia (inguinal hernia less commonly associated with atrophic inguinal and intra-abdominal UDT).

Physical examination is used most often to diagnose UDT and inguinal hernia. Radiographic evaluation (abdominal ultrasound, CT or MRI imaging) provides minimal additional useful information. Additional clinical testing (pediatric endocrinology evaluation and management) may be recommended when bilateral nonpalpable UDT are identified.

Surgical management of UDT is important to preserve fertility, to limit risk for undetected testis cancer, and to correct the associated inguinal hernia (often large in size). Risk of infertility and testis cancer is relatively low if testicles develop and grow in a normal position.

Inguinal orchiopexy for palpable UDT is completed through small inguinal and hemiscrotal incisions (2 cm in size), initially releasing the inguinal hernia sac (inguinal herniorrhaphy) and mobilizing the testicle from its abnormal location (to achieve adequate spermatic cord length), and then creating a scrotal pouch where the testicle is anchored in its proper scrotal position.

Transabdominal orchiopexy for nonpalpable UDT generally involves initial diagnostic laparoscopy (umbilical access) to identify the condition and precise location of the UDT (and to identify presence of inguinal hernia). Orchiopexy for intra-abdominal UDT requires more comprehensive spermatic cord mobilization to achieve adequate length for scrotal placement of the testicle (laparoscopic 1-stage or 2-stage orchiopexy surgical procedure may be required for management of high intra-abdominal UDT with short spermatic vessels).

Highest surgical success rates for orchiopexy (viable testicle in a scrotal position) are achieved for palpable UDT (nearly 100% success), with slightly lower success rates achieved for high intra-abdominal UDT (80 to 90% success).
success). Atrophic nonpalpable UDT can have persistent seminiferous tubules present (potential risk for testis cancer) in approximately 10% of cases, so these are removed through a small scrotal incision.

This operation is generally performed as a day surgery procedure under general anesthesia (pediatric anesthesiologist). All incisions are then reconstructed anatomically, in order to achieve a strong abdominal wall and minimal scarring. The surgical dressings (Steri-Strips, Dermabond and Tegaderm) dislodge spontaneously over the first 2 weeks following surgery (no suture removal required). Postoperative complications (bleeding, infection, testicular injury) are extremely rare.