THE UNDESCENDED TESTIS

Early diagnosis and referral are key to reducing subfertility and cancer risks

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The undescended testicle (UDT), or cryptorchidism, is a condition where a boy does not have one or both testes in the scrotum. This condition is the most common genital abnormality in male children, affecting about five percent of boys.

A recent study\(^1\) by the Department of Paediatric Surgery at KK Women’s and Children’s Hospital (KKH) has revealed that despite early diagnosis in many boys with UDT, congenital or otherwise, most are referred and undergo surgery only after one year of age. The association of UDT with subfertility\(^2\) and testicular malignancy\(^3\) has been well established in literature, and early surgery to correct UDT is usually recommended before one year of age\(^4\) to minimise the risk of these problems.

Completed in 2012, the study retrospectively reviewed 513 boys with UDT who underwent orchidopexy between 2007 and 2011 at KKH; 56 percent of these boys had a documented history of congenital UDT. The median age at referral was 1.1 years and the median age at first orchidopexy was 1.6 years.

Results showed that premature babies, including those with major genitourinary anomalies and those seen in public tertiary hospitals, were referred at younger ages than those diagnosed at community clinics and private healthcare institutions. In addition, 70 percent of all boys with congenital UDT, regardless of source of referral, were operated on beyond the age of one year.

Evidence suggests that early and timely surgical intervention is essential to minimise the risks of subfertility and testicular cancer. Hence, scrotal examination should be carried out during well child visits to the doctor, to increase detection rates.

Prompt referral from healthcare providers is encouraged to ensure the best possible outcomes for the child. The Department of Paediatric Surgery at KKH is currently conducting a study on the level of knowledge about UDT among healthcare professionals, to determine possible causes for delayed referral. The study is expected to conclude in 2014.
**Q&A: UNDERSTANDING UNDESCENDED TESTIS**

**An undescended right testis — note the child’s empty right scrotum.**

**A child being examined for UDT.**

**Q: How does undescended testis occur?**

**A:** In utero, the testis descends from its initial abdominal position, through the inguinal canal, to take its place in the scrotum in the eighth month of gestation. Various factors affect the natural progression of this descent, with the gubernaculum – a fibrous cord connecting the testis with the bottom of the scrotum – appearing to play a key role. Failure of this process results in UDT, and can occur any time during the progression. Descent into the scrotum may also occur after birth, up to the age of three months.

**Q: What are the key findings on physical examination?**

**A:** The key physical finding is an empty scrotum, which may be unilateral or bilateral. It is common for the undescended testis to be smaller than its normal counterpart. Examination of a child’s scrotum may be challenging due to an active cremasteric reflex that can cause retraction of a normal testis out of the scrotum. If the testis may be brought down with ease, and remains in the scrotum without traction, it is a retractile testis. The retractile testis does not demand surgical correction, but should be followed up by a paediatric surgeon as some may subsequently become acquired UDT, also known as ascending testis.

**Q: When is referral required?**

**A:** Prompt referral to a paediatric surgeon is essential if UDT is discovered beyond three months of age.

**Q: When and why should surgery be performed?**

**A:** Surgery, known as orchidopexy, is the gold standard of management for UDT. Orchidopexy must be performed as the undescended testis is at risk of reduced fertility and testicular tumour formation. The current recommendation is to correct the condition by the age of one year.

**Subfertility**

Studies have demonstrated that the potential to produce sperm begins to fall after one year of age if the testis remains outside the scrotum. In older studies conducted on children who underwent orchidopexy after the age of one year, it was found that about half of those who had a previous history of UDT had subnormal sperm counts. However, longer term studies are required to determine the actual effect of UDT on fertility.

**Testicular tumour**

Those with UDT are up to eight times more likely to develop testicular cancer. Surgical correction lowers this risk even though it cannot completely erase it. The psychological impact of an empty scrotum should also not be underestimated.

**Q: Can a patient experience an ascent of a descended testis?**

**A:** Medical literature reports cases of boys who are born with both testes in the scrotum, and experience an ascent of a descended testis later in childhood. This is noted especially in boys with retractile testes. Up to one third of retractile testes eventually reside outside the scrotum, making follow up of this condition essential. If ascent occurs, the patient should be referred to undergo orchidopexy.

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**References**


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is currently a Senior Staff Registrar with the Department of Paediatric Surgery at KK Women’s and Children’s Hospital. She was awarded Membership of the Royal College of Surgeons of Edinburgh, and obtained a Master of Surgery (General Surgery) at the University of Malaya. She also completed a two-year clinical research fellowship at Great Ormond Street Hospital for Children, London, UK. Dr Nah has a special interest in clinical research in paediatric surgery, and has led many projects that have culminated in regional and international conference presentations, as well as peer-reviewed journal publications.