# **Maldescended testis in Adults**

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#### Definitions

- Cryptorchid: testis neither resides nor can be manipulated into the scrotum
- Ectopic: aberrant course
- Retractile: can be manipulated into scrotum where it remains without tension
- Gliding: can be manipulated into upper scrotum but retracts when released
- Ascended: previously descended, then "ascends" spontaneously



# How common is it?

Epidermiology

Cryptorchidism is the most common genital disorder encountered in paediatrics.

- 1% to 4% of full-term and
- 1% to 45% of preterm male neonates (<u>Sijstermans et al,</u> 2008)

Spontaneous descent is more likely and may occur later in premature infants.

Spontaneous descent after the first year of life is uncommon.



#### Is the incidence of cryptorchidism increasing?

## Literature controversial

- Cryptorchidism, hypospadias, micropenis
- Decreasing semen quality
- Increasing testicular cancer
- Increasing demand for assisted reproduction
- Impact of environmental xenoestrogens

   Herbicides, pesticides, PCBs, polystyrenes
- Environmental antiandrogens
  - Linuron, vinclozolin, pp'DDE, polyaromatic hydrocarbons



## **Testicular development**

- 6 wk primordial germ cells migrate to genital ridge
- 7 wk testicular differentiation
- 8 wk testis hormonally active
   Sertolis secrete MIF
- 10-11 wk Leydig cells secrete T
- 10-15 wk external genital differentiation



## **Testicular descent**

5-8 wk processus vaginalis

- Gubernaculum attaches to lower epididymis
- 12 wk transabdominal descent to internal inguinal ring
- 26-28 wk gubernaculum swells to form inguinal canal, testis descends into scrotum
- Insulin-3 (INSL3) effects gubernacular growth



# **Genetic Susceptibility**

- Genetic studies of cryptorchidism suggest that the disease is heritable but that susceptibility is likely polygenic and multifactorial.
- Autosomal dominance with reduced penetrance probable mode of inheritance
- Recurrence risk ratio (RR) was 10.1 in twins, 3.5 in brothers, and 2.3 in offspring and were significantly higher in maternal than in paternal half-brothers. (Schnack et



# • An adult is not a big child!



## **Presentating History**

- Pain
- Hernia
- Testicular malignancy
- Infertility
- Micropenis
- Delayed puberty



#### Hypogonadism

- Loss of libido (desire)
- Fatigue / depression / loss of well-being
- Lean body muscle and mass
- Visceral fat / mass
- Sleep disturbances
- ↓ Virility
- Sweating / dry skin / anaemia
- Osteoporosis



# An Adult with empty scrotum

## Congenital

- Undescended
- Retractile
- Ectopic
- Vanished
- DSD
- Agenesis



AcquiredTorsionOrchidectomy

#### **Evaluation**

Role of Sonar
Baseline investigations ?
Testosterone
Semen analysis

• To do a biopsy or not





## Age At Presentation!















#### THE LINK BETWEEN ERECTILE DYSFUNCTION, TESTOSTERONE AND METABOLIC SYNDROME

### Erectile dysfunction

#### Testosterone deficiency syndrome

Testosterone deficiency syndrome is a proven risk factor for all the metabolic syndrome components

Abdominal obesity represents a "vicious circle . abdominal fat tissue reduces testosterone and stosterone reduces the fat tissues.



#### Metabolic syndrome

(abdominal fat, diabetes, obesity, hypertension....)

All components of metabolic syndrome are underlying conditions for erectile dysfunction



## Increased risk of neoplasia

- Cortes 2001: 1638 testicular samples from 1335 patients (23% bilateral, 77% unilateral)
- Mean age @ surgery 11.7 yo (0.1-18.9 yr)
- 1 invasive germ cell tumor
- 6 carcinoma in situ
- 1 Sertoli cell tumor



## Neoplasia & cryptorchidism

- 3 neoplasms in intra-abdominal testes
- 4 neoplasms in boys with abnormal external genitalia
- 2 neoplasms in boys with known abnormal karyotype
- Risk of neoplasia 5% with intraabdominal testes, abnormal external genitalia or abnormal karyotype (Cortes 2001)



## When to operate?

## • Lee 2002

- Inverse correlation between age at surgery and T
- Inverse correlation between body wt and T
- Direct correlation between T and sperm density, motility, morphology
- Indicates direct relationship between spermiogenesis and T in cryptorchid men



# Is further treatment after surgery indicated?

- Subfertility correlates with reduced total germ cell counts
- Defects in germ cell maturation associated with blunting of normal surges LH/FSH
- Prepubertal treatment with GnRH could theoretically trigger normal germ cell maturation & proliferation



#### Palpable UDT Orchiolysis pexy





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# LAPAROSCOPIC ORCHIOPEXY: PROCEDURE OF CHOICE FOR THE NONPALPABLE TESTIS?

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## Laparoscopic findings

## Unilateral

- Absent testis and cord structures
- Absent testis with cord structures exiting the inguinal canal
- High testis
- Testicular Nubbin
  - Orchidectomy



## **Bilateral**

- Fowler Stephens
- Prentis Maneuvre
- Orchidectomy

## Laparoscopy





#### **INTRA ABDOMINAL TESTIS**





## Adults !

- Modifications have been discussed regarding orchiolysis
- Challenge on mobilization
- Adult with bilateral undcended testis!
  - Intra-abdominal testis
  - Fowler Stevens
  - When to do orchidectomy?
  - When to do nothing?



## **Absent testis**

- Treat the complications
- Hypogonadism
  - Testosterone supplement
- Family interest
- Self image
  - Testicular prosthesis



