The BAPU Consensus Statement on the Management of Undescended Testes

Feilim Murphy
Consultant Paediatric Urologist
Secretary to the BAPU

On Behalf of the committee and entire organisation
The management of undescended testes

Science Fiction

• Science Fact
• Postulations and theories

• Distinct lack of useful publications

• What do we do?
Testes and British Association of Paediatric Urologists

Cambridge
September 2011
Reality not Ambition

- Not a set of restrictions
- Demonstrate the accepted scientific knowledge
- Identifies clear consensus agreement
- Identifies controversy
KEY MESSAGE

• Germ cells differentiation into adult dark spermatogonia at 3-6 months
• UDT’S are diagnosed easily at that age

• *Orchidopexy can occur within 3-6 months though surgery occurring between 6 and 12 months is acceptable.*
Malignancy

- Cryptorchidism increases the relative risk of testicular malignancy by 3-7.4 times

- Early orchidopexy (less than 10 years old) decreases the risk of testicular malignancy.
Increasing Risk Factor

- Impalpable testis,
- Bilateral undescended testis,
- Abnormal external genitalia
- Abnormal genotype.
Early surgery for cryptorchidism within the first year of life could reduce the potential for malignancy however this remains unproven.
Pre pubertal UDTs

Later presenting UDT

1. Undetected congenital cryptorchid
2. Iatrogenic
3. Ascending testis
Ascendus Testes

- Clarnette et al. proposed that it is stationary due to a persistent fibrous remnant of the processus vaginalis,
- prevents the testis from growing down into the scrotum as the child enlarges

Testis Starts in the scrotum

As the boy grows processus vaginalis fails to elongate
Expectant

• Spont descent will occur in 62% to 77% of patients at puberty

• There is no data regarding the long term outcome of patients managed in this fashion
Operative management

• Damage is a process?
• By moving the testicle into the correct anatomical position, the process may be minimised.
• Ong et al showed no difference in the malignancy rate between patients with non-congenital undescended testes and the normal population.
• Garcia et al demonstrated the same histopathological alterations of congenital and acquired UDTs.
Key Message III

• Need for a randomised controlled trial of expectant versus operative management.

• Offer prompt orchidopexy due to this increased malignancy risk, even without the potential benefit on fertility.
Adjuvant therapy

Hypothesis
• Blunting of the testosterone and the gonadotrophin surge
• Germ cell insufficiency
• Defect in the hypothalamo-pituitary-gonadal axis

Treatment
- Luteinising hormone releasing Hormone (LHRH),
- Gonadotrophin releasing hormone (GnRH)
- Human chorionic gonadotrophin (HCG)
Adjuvant therapy

• Variable success rate varying between 8-60%.

• Three meta-analysis

• Efficacy 15-20%
Support for Hormonal therapy

- HCG has a role in stimulating the partial descent of testes that are clinically determined as impalpable.

- Hadziseliovic et al reported that a 6-month course of pre-orchidopexy (GnRH agonist) demonstrated a significant increase in the number of germ cells in patients with unilateral undescended as well as bilateral undescended testes.

- Bica et al demonstrated through a double-blind control trial of 63 boys who underwent treatment that the combined therapy of HCG and GnRH agonist increased the germ cells compared to placebo (0.64 vs. 0.5 p >0.2).

- Lala et al published a study of 281 boys, all of whom had LHRH, and those whose testes failed to descend had HCG. They reported an improvement in germ cells in boys treated under the age of one year.

- Zivkovic reported on a statistically significant increase in the number of spermatogonia per tubule in 32 boys who were treated with GnRH agonist (15 of which also had HCG) compared to those who had surgery alone.
Post Orchidopexy Hormonal therapy

• Significant increase in spermatozoa in those patients who received GnRH agonist in the post-op period

• Huff et al 12 boys underwent orchidopexy and biopsy
• Followed by GnRH agonist.
• Repeat testicular biopsies
• 25% had improved germ cell count and 83% the contralateral testes had also improved.
Concerns

• Cortes et al
  Spermatogonia per tubules with surgery alone as opposed to those who received GnRH (0.14 vs 0.07)

• Vinardi et al
  13 years, the number of normal spermatogonia was found in only 67% of those who had hormone therapy
Concerns

- Varying ages at presentation
- Congenital/acquired
- Precocious puberty
- Variation in methods, data collection and analysis.
- There are also no studies confirming the biopsy results persist into adult life and that fertility is actually improved.
Key Message IV

• No conclusive evidence that there is a deficiency in the hypothalamic-pituitary axis.

• Hormonal therapy may induce precious development of primary spermatocytes.

• Involvement of more centers within the debate.
Key Message IV

- HCG should not be used to encourage testicular descent and ? used at all ?

- Overall it was agreed that there is insufficient evidence at present for the routine use of adjuvant therapy in UDT.

- The efficacy of adjuvant therapy in the small group of boys with bilateral UDT should be assessed in a multi-centre randomised controlled trial.
Fertility

**Unilateral**
- Miller et al

Rates of conception at 12 months of attempting (86% vs. 89%) and overall paternity (90% vs. 93%) between previously cryptorchids and control population

**Bilateral**

49% in formerly bilaterally cryptorchid men compared to 81% in the control population was observed.
Fertility Key Message V

• *Early intervention should optimise potential outcome.*

• *Unilateral cryptorchid men rates of conception at one year do not appear statistically significant when compared to the normal population.*

• *In bilateral cryptorchidism, rates are significantly lower in the present dataset.*
Fertility Key Message V

- Due to morphology, biopsy and ultrasound changes at 3 to 6 months,
- Operate on these children as early as 3 to 6 months
BAPU

• Further topics were discussed as a
1. The role of Ultrasound
2. Laparoscopy
3. The search for the nubbin
4. Contralateral testes
Conclusions

• Surgery at 3-6 months or <12 months

• Surgery for all.
Thanks

- John Hutson
- Rowena Hitchcock
- Mark Woodward
- Prasad Godbole
- Liam McCarthy
- R. Ranawaka
- A. Robb
- S. Tiboni
- K. Fathi
- N Rahman
- L. C Steven
- A. Springer
Any Questions

BAPU Website www.bapu.org.uk

Or

Come to the Course Sept 6\textsuperscript{th} and 7\textsuperscript{th}

Or

Contact Me directly Feilim Murphy