

From Gums to Bums:



Surgical Presentations in Children

Sebastian King

Paediatric Colorectal Surgeon



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From Gums to Bums (and the rest): Surgical Presentations in Children

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Paediatric surgery for the busy GP – Getting the referral right



Warwick J Teague, Sebastian K King

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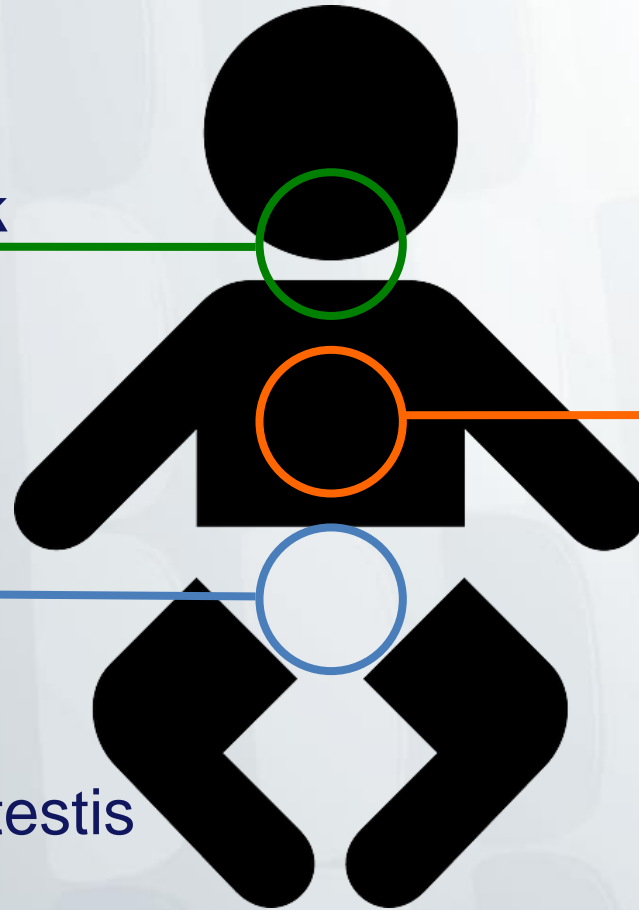
Paediatric Surgery in 45 mins?

Head and Neck

Lymph nodes
SCM tumour
Dermoid cyst

Inguinoscrotal

Phimosis
Inguinal hernia
Maldescended testis



Abdomen

Umbilical hernia
Bowel obstruction
Constipation

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Surgery may be kept simple

1

Things that should not be there, *but are*

Inguinal region – hernia, hydroceles, varicocele

Head and neck – lymph nodes, lesions

Abdomen – umbilical hernia

Bowel – no feeds, vomiting (+/- bile)

2

Things that should be there, *but are not*

Undescended testis, Ectopic testis

Meconium

Or it may be complicated

3

Things that should not hurt, *but do*

Testicular torsion

Appendix testis torsion

Benign idiopathic scrotal oedema

Foreskin anomalies

4

Things that should hurt, *but do not*

Testicular tumours

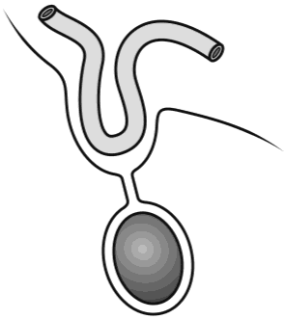
Neck lymph nodes

1

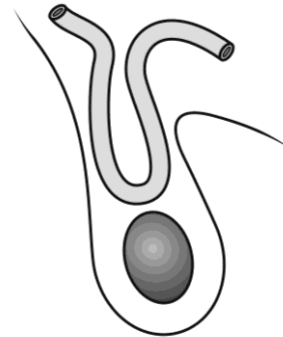
Think like a surgeon

- What could this infant's groin swelling be?

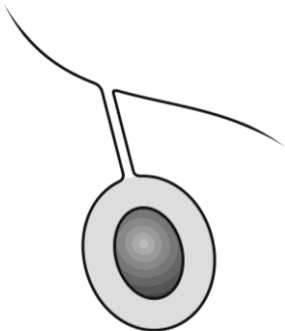
Inguinal hernia



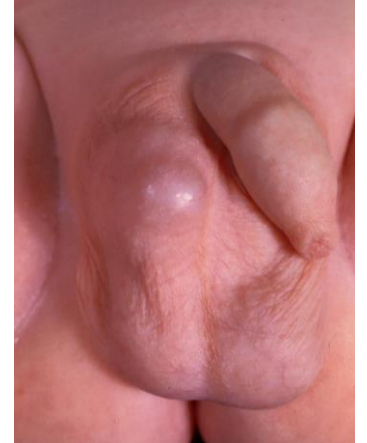
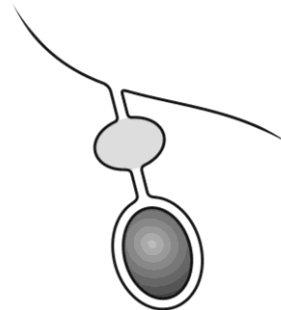
Inguinoscrotal hernia



Hydrocele



Hydrocele of the cord



1

Inspection & Palpation

- Inguinal hernia vs Hydrocele
= *the boy with 3 features?*

Get above?

Reducible?

Transilluminates?



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1

Inspection & Palpation

- Inguinal hernia
= *the boy with 3 features?*

Cannot get above

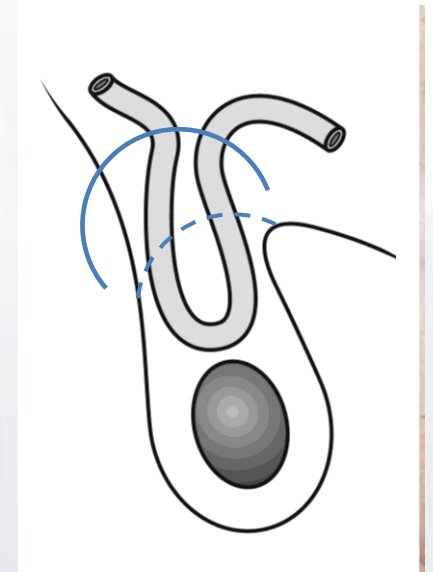
Is reducible

Not transilluminate

- **Caveats**

Irreducible ⚠️❏

Neonates transilluminate



1

Inspection & Palpation

- **Hydrocele**
= *the boy with 3 features?*

Can get above

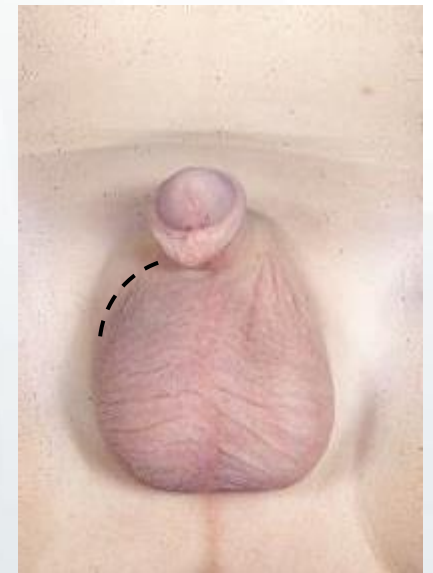
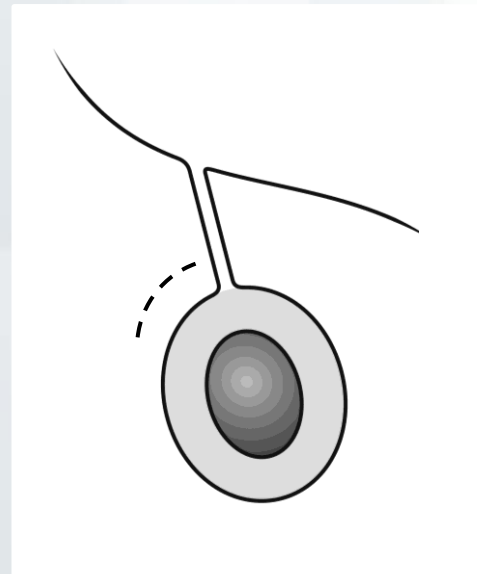
Is **not** reducible

Does transilluminate

- **Caveats**

Reducible?

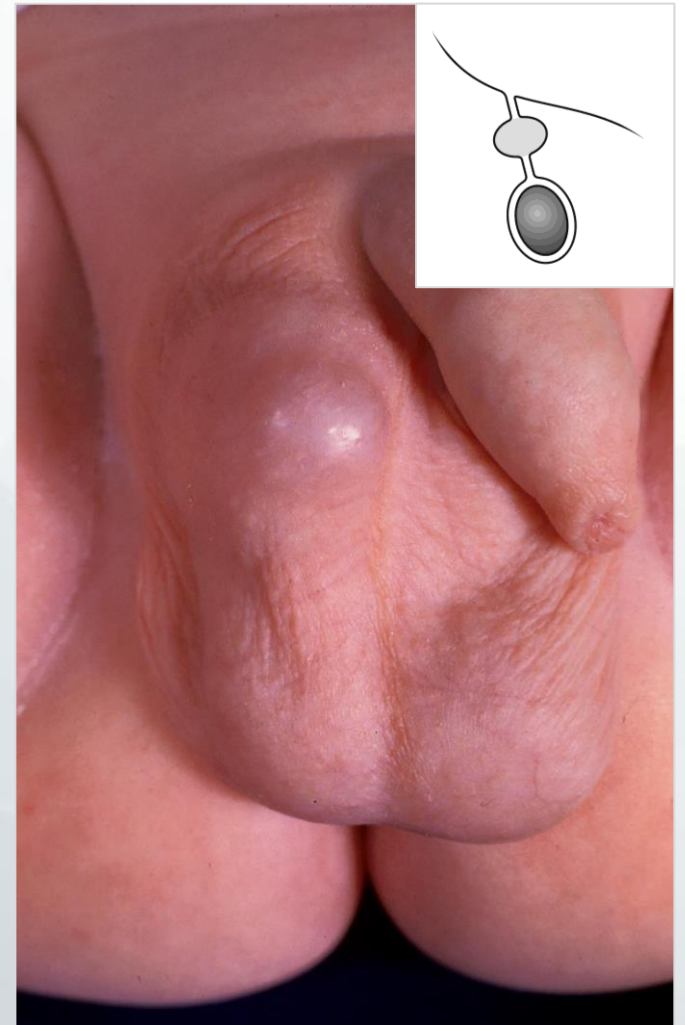
Does not transilluminate ⚠️



1

Inspection & Palpation

- Hydrocele of the cord
= *the boy with 3 balls?!?*
Discrete swelling,... '3rd ball'
Not tender
Not reducible
Moves with spermatic cord
Does transilluminate
- **Heralds closing PPV?**



1

What about the older boy

- **Varicocele**
= *bag of worms, L>>>R*
Scrotal asymmetry
 \pm testicular asymmetry
Valsalva > Standing
Palpable varicosities
- **Indications for Rx**
>20% difference in testis vol
 \pm episodic groin pain



1

Referrals

SAY NO TO ~~USS~~

- No ultra\$ound

Exception is varicocele = scrotum & renal USS

Especially right-sided varicocele

- Let your 'urgent' be urgent (see next slide)

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Referrals

Condition	Timing	Urgency
Inguinal hernia (neonate)	<1 week	Urgent
Inguinal hernia (infant)	2-4 weeks	Urgent
Inguinal hernia (child)	2-3 months	Semi-urgent
Hydrocele/of cord	After 2-3 years	Routine
Varicocele	At diagnosis	Routine *

* UNILATERAL RIGHT varicocele is pretty rare and warrants **urgent** renal and scrotal USS and referral

1

The Neck

- Lymph nodes are common in the neck



Rarely require investigation

Rarely require intervention

Usually regress spontaneously

1

The Neck

- Torticollis – my child has a *tumour*??



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1

The Neck

- Torticollis – my child has a *tumour*??



1

The Head

- What is that thing above my child's eye??



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1

The funny belly-button

- When will this lump go away??

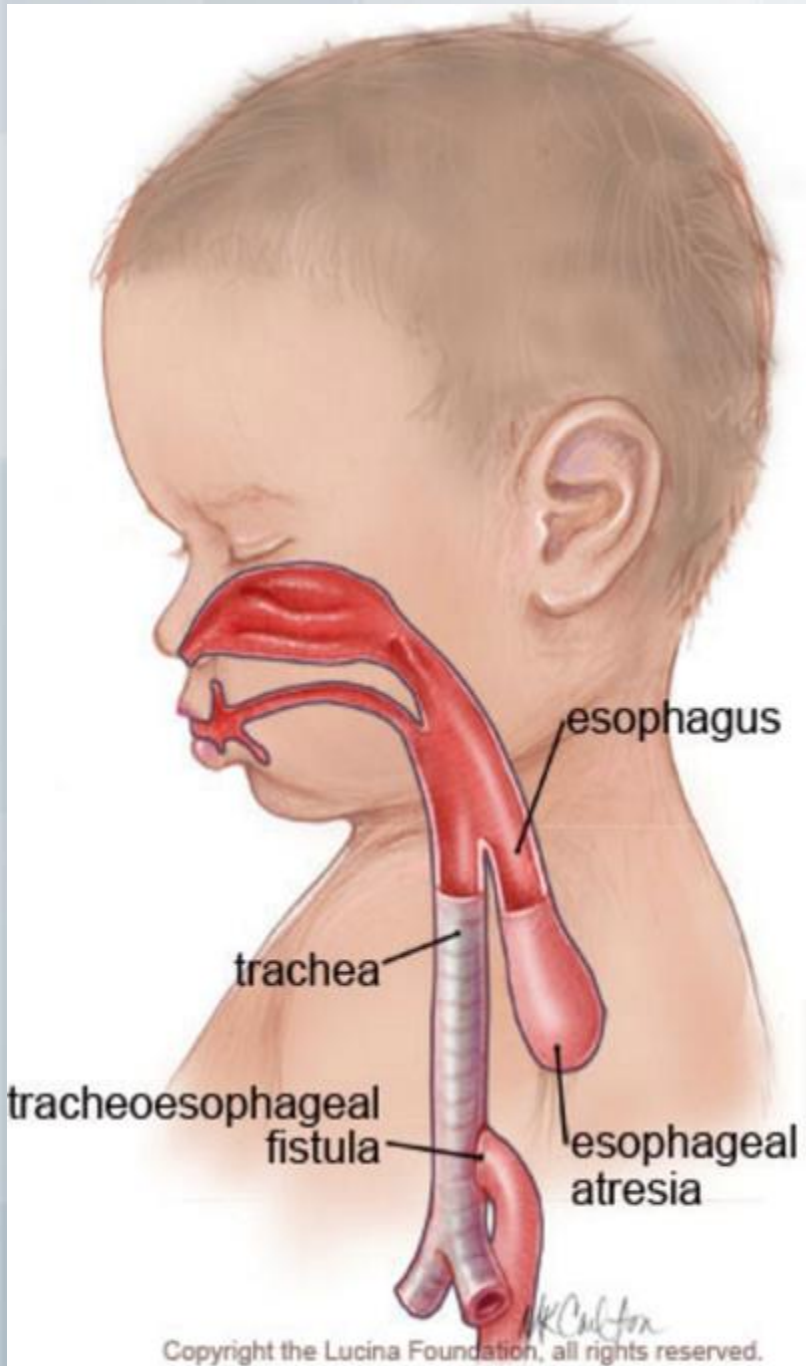


1

The Gut!

- My baby won't feed
 - **Oesophageal atresia**





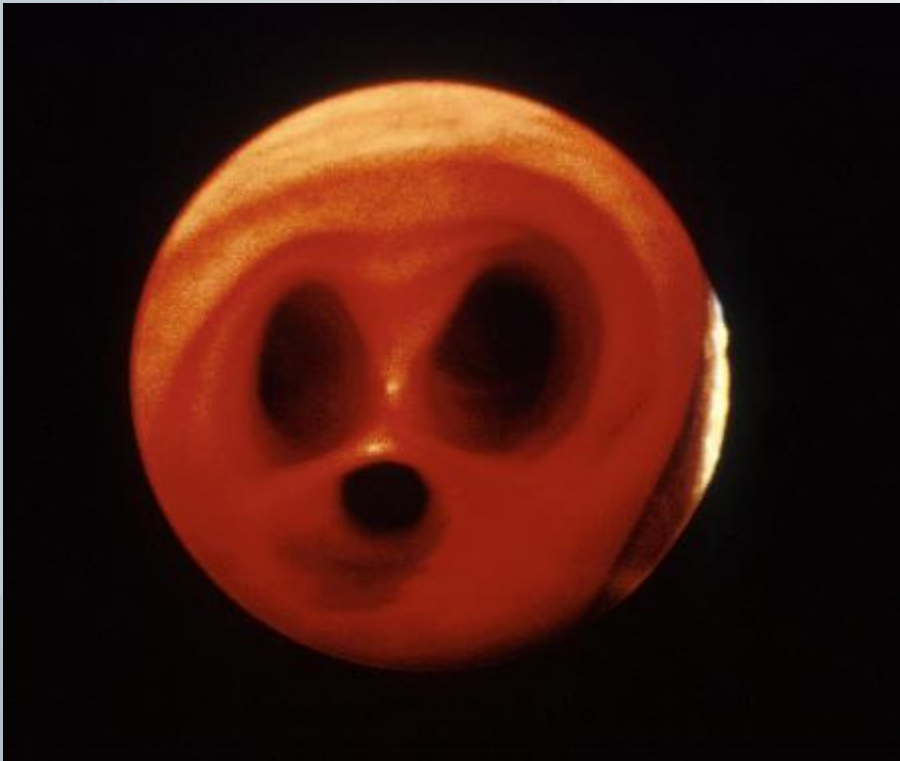
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1

The Gut!

- My baby won't feed



1

The Gut!

- My baby won't feed
 - Duodenal atresia



1

The Gut!

- My baby has stopped feeding
 - **Malrotation and volvulus**

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1

The Gut!

- My baby has stopped feeding
 - Malrotation and volvulus
- **Grass-green vomit**



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2



The Gut!

- My baby hasn't done a poo!





2



The Gut!

- My baby hasn't done a poo!





2



The Gut!

- My baby hasn't done a poo!



2

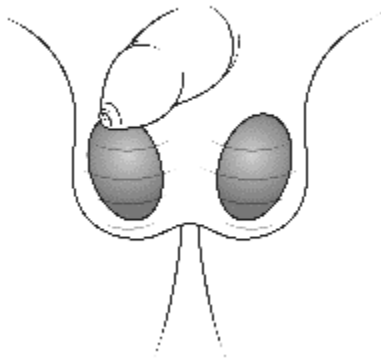
Back to the Groin

- Most boys have two balls,...

Where are this boy's two balls?

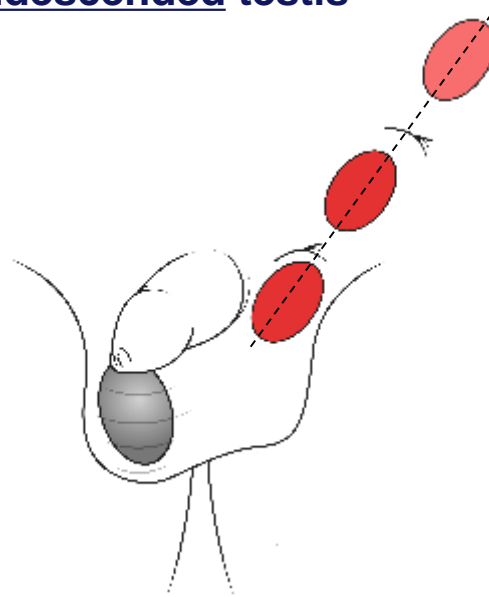
Descended (normal)

Suprapubic fat pad



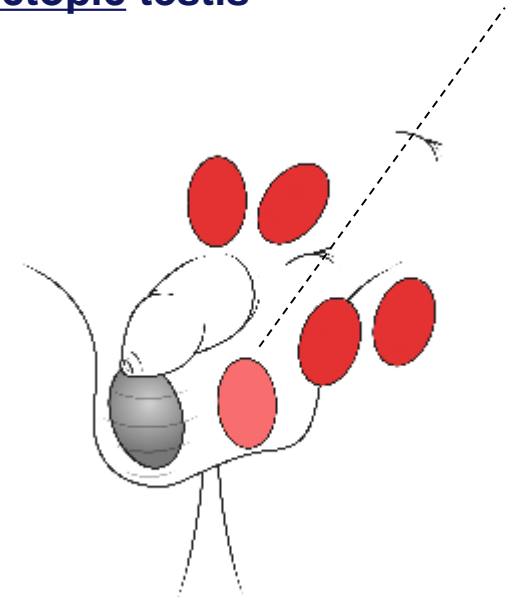
*Cremasteric
reflex*

Undescended testis



*In line
of testicular descent*

Ectopic testis



*Outside line
of testicular descent*

2

Testes

- **Why descended balls are hard to find**
cremasteric reflex
suprapubic fatpad, and examining hand/grip
unprepared, cold, worried child



2

Testes

- **Why descended balls are hard to find**
cremasteric reflex
suprapubic fatpad, and examining hand/grip





2



Testes

- **Why descended balls are hard to find**
cremasteric reflex
suprapubic fatpad, and **examining hand/grip**



SAY NO TO ~~USS~~

- **No ultra\$ound**

Inaccurate, and confusing for parent and doctor

If we would like an USS, we will arrange

- **Not urgent,... surgery at 9 – 12 months**

*Exception is bil cryptorchisim
and hypospadias,... DSD?*

2

What will the surgeon do?

- **Descended \pm retractile testes**
Discharge vs annual review
- **Palpable maldescended testis(es)**
Single stage orchidopexy at 9 – 12 months
- **Impalpable undescended testis(es)**
Two stage laparoscopic-assisted orchidopexy

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The sore scrotum

- Explore everyone unless you can positively exclude testicular torsion

Onset: abrupt, memorable, woken from sleep

Associated: vomiting, nausea vs LUTS

Duration: hrs vs days

- This does **not** mean everyone gets explored
But many 'negative' explorations are expected

The sore scrotum

- Testicular torsion

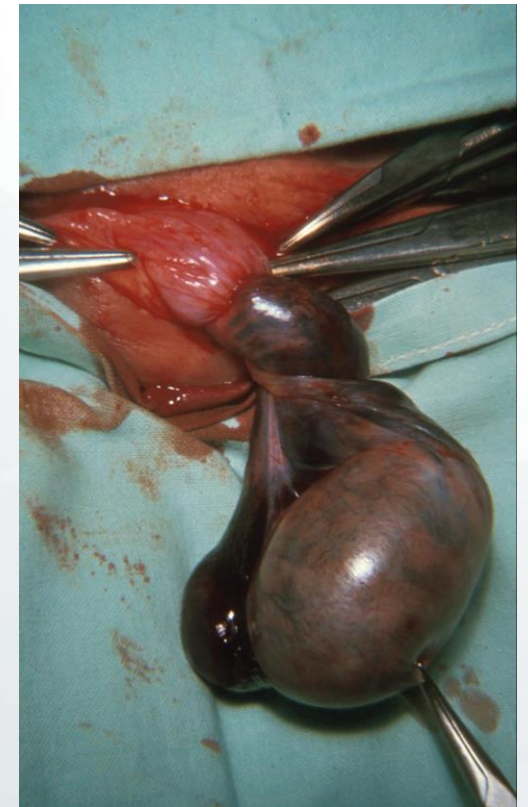
Scrotal erythema

High-riding testis

Exquisite
tenderness

Cannot feel vas/
vessels posteriorly

= Fast for theatre





3



Often not sore

- Testicular torsion in neonates

Hemi-scrotal swelling

Peri-natal event



3

The testes

- Testicular torsion in neonates

Hemi-scrotal swelling

Peri-natal event

Rare to explore

= ~~Fast for theatre~~





Not the testis!

- Appendix testis torsion

Scrotal erythema
& oedema varies

Blue dot is
pathognomonic

Localised
tenderness



= Non-operative vs explore

3

Not the testis!

- **Benign idiopathic scrotal oedema**

Either unilateral or bilateral

Gross scrotal oedema
and 'salmon pink' erythema

Characteristically spreads
beyond hemi-scrotum

= not intra-tunical pathology

Scrotum not testis ± tender



3

Refer like a surgeon

SAY NO TO ~~USS~~

- Seldom use ultrasound

Cannot exclude testicular torsion (clinical diagnosis)

If we would like an USS, we can arrange

- Urgent,... we (often) get out of bed for this

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3

Don't forget the penis

Is this foreskin abnormal?

- Indications for circumcision

- BXO
- Recurrent balanitis
- Urosepsis, especially <1 year

? Previous paraphimosis

± *Refractory* physiological phimosis, e.g. >10 years



Balanitis



Paraphimosis

3

The normal foreskin

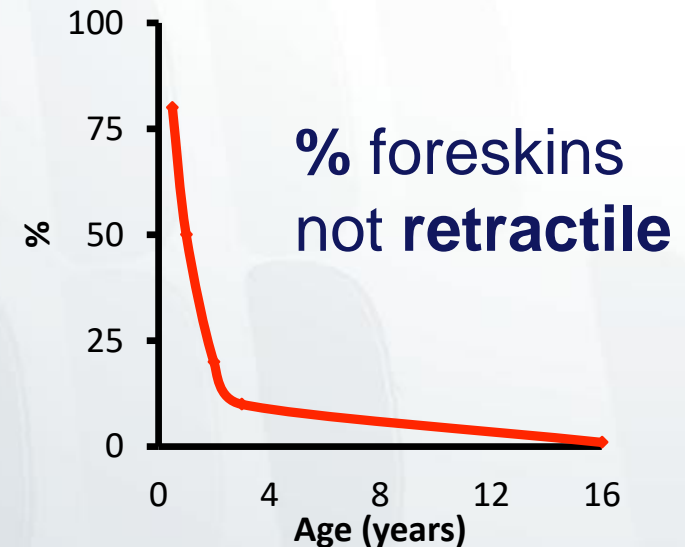
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The normal foreskin

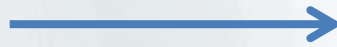
Is this foreskin abnormal?

- What actions prior to referral?
 - No investigations
 - ± Response to 2-4 weeks' topical corticosteroid
 - 0.1% Betnovate QID applied to the gently retracted foreskin*
- When to refer?
 - If **surgical** indication for circumcision
 - If **foreskin morphology** is abnormal (urology)

Is this foreskin abnormal?

- Surgical management

Physiological
= Normal



Reassure, d/c

Leave it alone – don't retract!

Equivocal
± Refractory



Corticosteroid

2-4 weeks' trial, 3 month r/w

Scarring/
Other indication



Circumcision



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The worrying swelling

- Smelling a rat,...



If the scrotal swelling is...

NQR

Not there from birth

Only gets larger, never smaller

Associated systemic upset

± Precocious puberty

PHx leukaemia, cryptorchidism

Inspection & Palpation

- Smelling a rat,...



If the scrotal swelling is...

NQR

Looks tender **but is not**

Does not transilluminate

Feels firm not cystic

Associated lymphadenopathy

± Precocious puberty



Referral

- If you smell a rat and suspect a tumour...



Urgent tertiary surgical referral

Consider a phone call

Urgent scrotal/abdominal USS

***THIS IS THE ONE FOR
THE ULTRASOUND 😊***

What will the surgeon do?

- If you smell a rat,... you need to act fast...



Urgent tumour markers
(aFP, bHCG, LDH \pm testosterone)

Urgent oncology referral

Urgent CT imaging

Urgent surgical excision
(unless workup dictates otherwise)

4

What will the surgeon do?

- In this case,...



Yolk sac tumour removed intact via inguinal incision



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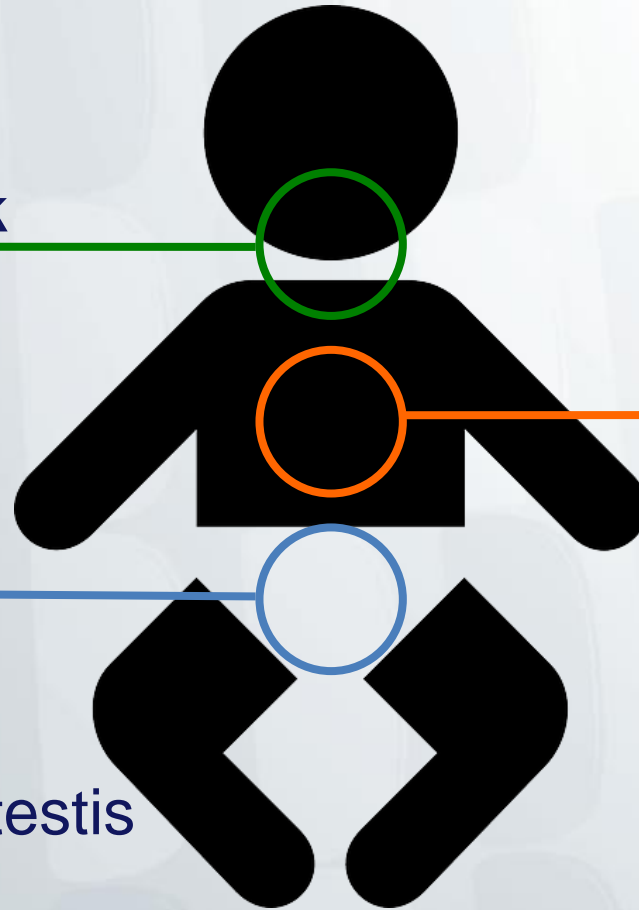
Paediatric Surgery in 45 mins?

Head and Neck

Lymph nodes
SCM tumour
Dermoid cyst

Inguinoscrotal

Phimosis
Inguinal hernia
Maldescended testis



Abdomen

Umbilical hernia
Bowel obstruction
Constipation

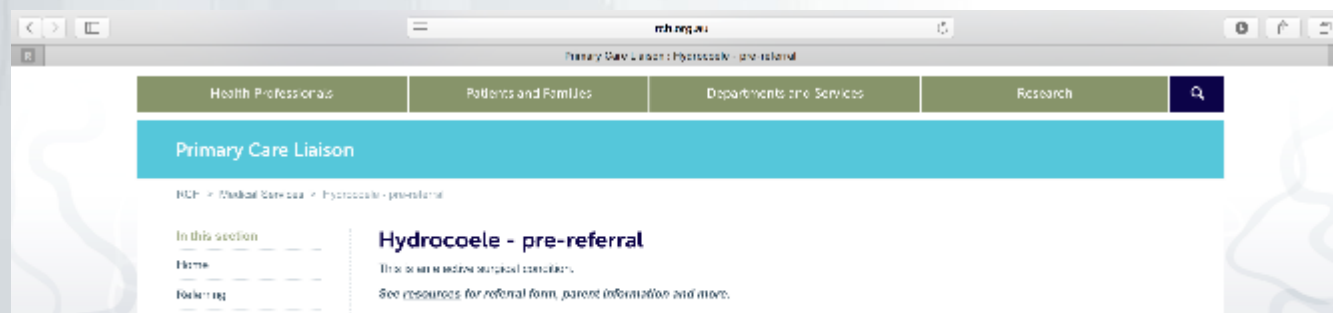


http://www.rch.org.au/kidsconnect/prereferral_guidelines/

The screenshot shows a web browser window with the URL http://www.rch.org.au/kidsconnect/prereferral_guidelines/. The page header includes the RCH logo and navigation links: [Home](#), [About](#), [News](#), [Careers](#), [Support us](#), [Contact](#), [Intranet](#), and [Quicklinks](#). Below the header is a navigation bar with categories: [Health Professionals](#), [Patients and Families](#), [Departments and Services](#), [Research](#), and a search icon. The main content area is titled "Primary Care Liaison" and "Pre-referral Guidelines". It features a sidebar with links: [Home](#), [Referring](#), [Emergency](#), [Community services](#), [Find a doctor](#), [Pre-referral guidelines](#) (highlighted), [Clinical resources](#), [Professional education](#), [For parents](#), [Emailing lists](#), and [RCH-GP liaison](#). The main text explains that the guidelines are for suggested clinical management before referring to the RCH outpatient department. It lists two categories: [Clinical Practice Guidelines](#) and [Kids Health Info \(RCH Parent Info website\)](#). There are also links for [Copyright and Disclaimer](#), [Templates for new guidelines](#), and [Email feedback or recommendations: \[kids.connect@rch.org.au\]\(mailto:kids.connect@rch.org.au\)](#). At the bottom, there are buttons for [View by Title](#) and [View by Category](#), and an alphabetical index from A to Z.



http://www.rch.org.au/kidsconnect/prereferral_guidelines/



History and physical examination for all ages

1. Congenital hydrocoele

- Cannot reduce it.
- Transilluminable.
- Can get above it.
 - Refer all cases for General Surgical review if not resolved by 2 years.
 - Please provide history and any investigations undertaken.

2. Encysted hydrocoele of the cord

- Cannot reduce it.
- Transilluminable.
- Can get above it.
- Rare.
 - Refer all cases for General Surgical review if not resolved by 2 years.
 - Please provide history and any investigations undertaken.

Diagnostic imaging has no role in the management of these conditions.



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