Commissioning guide:

Paediatric orchidopexy for undescended testis

Commissioned and facilitated by

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The Royal College of Surgeons of England, 35-43 Lincoln’s Inn Fields, London WC2A 3PE
Introduction

The undescended testis presents in a bimodal fashion with the majority at birth, however an additional significant number are diagnosed during childhood – the ‘ascending testis’ in whom the testis was initially located in the scrotum\textsuperscript{1-4}.

At term undescended testes occur in 3-5\% male infants but in the majority the testis reaches its normal scrotal position by 3 months of age\textsuperscript{5,6}. A significant number of boys have a retractile testis of which a proportion will become an undescended testis\textsuperscript{7-8}.

Annually in England there are around 6,000 elective orchidopexies for undescended testes\textsuperscript{9}. In 1994/95 75\%, were performed in DGHs but by 2004/05 only 50\% were managed by a local DGH and in the East Midlands in 2012/13 around 75\% of orchidopexies were performed in one of the two specialised Paediatric Surgical Units\textsuperscript{9-10}.

Patients and their families will benefit from assessment and surgery performed locally with selected appropriate referral to a tertiary paediatric surgical centre. Children should receive surgery in a safe, appropriate environment, which is as close to their home as possible\textsuperscript{12-13}.

This is not intended as a guide for management of patients requiring an emergency scrotal exploration for suspected testicular torsion.

Timing of surgery

The present evidence indicates that spontaneous descent of an undescended testis does not occur after 3 months, and that germ cell loss is preventable with early surgery\textsuperscript{45}.

In a child with an undescended testis the maldevelopment of germ cells has been linked with a higher risk of infertility\textsuperscript{41,42} and malignancy\textsuperscript{43,44} within the testis later in life.

In 2012 the British Association of Paediatric Urologists argued that undescended testes should be operated on between 3 and 12 months of age\textsuperscript{11}.

The surgical requirement for early operating on these children is tempered by the increased anaesthetic risk with children under 1 year\textsuperscript{35}. 
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The present evidence argues that spontaneous descent of an undescended testis does not occur after 3 months, and that germ cell loss is preventable with early surgery and early surgery is safe and reproducible.45

The British Association of Paediatric surgeons, British Association of Paediatric Urology Surgeons, Association of Paediatric Anaesthetists and the UK National Screening Committee, have reviewed the evidence about timing of surgery and potential anaesthetic risk and have arrived at a consensus of opinion that surgery should occur around 12 months of age.

1. High Value Care Pathway for Orchidopexy in the undescended testes

1.1 Primary care

- All male infants should be assessed for testicular maldescent according to UK National Screening Committee Standards for ‘Newborn and Infant Physical Examination’. This requires checks at 72 hours, 6-8 weeks postnatal examination14,34
- If the testis is undescended the patient should be referred to a Consultant general paediatric surgeon or urologist with appropriate experience and skills15
- Patients should not be referred routinely to a paediatrician
- Imaging with ultrasound is not indicated16-17
- Patients with non-palpable testes should be referred to secondary or tertiary paediatric surgical service for assessment20-22
- Patients with associated penile abnormalities should be referred to a Tertiary Unit for specialist paediatric surgical assessment18-19
- In older boys retractile testis can be manipulated into the scrotum and remain there but require follow up due to a 3-20% risk of permanent ascension7-8. Follow up can be carried out in primary or secondary care
- Parents and carers should be provided with relevant information and action plan

1.2 Secondary and Tertiary Care

- Care should be provided within a managed clinical network of secondary and tertiary care providers
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- GP referrals should be seen and assessed by aged 6 months - there is evidence that early orchidopexy benefits the testis\textsuperscript{15, 23-25}
- Imaging, including ultrasound is not indicated prior to surgery but consideration should be given to any pre-assessment requirements
- Infants with a non-palpable testis require laparoscopy and should be referred to a Tertiary Unit\textsuperscript{20, 22, 31}
- If orchidopexy is indicated it should be performed around 12 months of age\textsuperscript{15, 26, 27}
- Patient information should be given to parents or carers prior to surgery
- The majority of cases can be performed as a day-case procedure\textsuperscript{28-30}
- Children must be cared for in an appropriate child friendly environment
- Children undergoing surgery must have a pain management plan on discharge
- There should be defined arrangements for emergency transfers
- All staff who come into contact with children and young people are trained in safeguarding to an appropriate level as defined in the intercollegiate framework \textit{Safeguarding Children and Young people: roles and competences for health care staff}\textsuperscript{32, 33}

Secondary care pathway

- Palpable testis in groin
  - Are there appropriate local facilities?
  - A surgeon competent to undertake surgery?
  - An anaesthetist competent to anaesthetise?
  - Theatre staff competent to undertake the procedure with the appropriate equipment?
  - Appropriate ward facilities and nursing staff with paediatric competencies?
  - YES → Arrange surgery locally
  - NO → Refer to specialist paediatric surgical or urology unit

- Non-palpable testis in the groin OR associated penile abnormality

CHILD REQUIRING AN ORCHIDOPEXY
2. Procedures explorer for the provision of orchidopexy for an undescended testis

Users can access further procedure information based on the data available in the quality dashboard to see how individual providers are performing against the indicators. This will enable CCG’s to start a conversation with providers who appear to be ‘outliers’ from the indicators of quality that have been selected.

The Procedures Explorer Tool is available via the Royal College of Surgeons website.

The screenshot shows activity for orchidopexies across England, for patients under 17 years in the year July 2013 to June 2014.

The OPCS and ICD-10 codes used to capture data on orchidopexy are:

**Primary OPCS:**
- N08: Bilateral placement of testes in scrotum
- N09: Other placement of testes in scrotum

**Secondary OPCS:**
- N/A

**Primary ICD-10:**
- Q53: Undescended testicle
3. Quality dashboard for the provision of orchidopexy for an undescended testis

The quality dashboard provides an overview of activity commissioned by CCGs from the relevant pathways, and indicators of the quality of care provided by surgical units.

The quality dashboard is available via the Royal College of Surgeons website.

4. Levers for implementation

4.1 Audit and peer review measures

The following measures and standards are those expected. Evidence should be able to be made available to commissioners if requested.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary care</strong></td>
<td><strong>Assessment</strong> All male infants assessed at 72 hours and 6-8 week postnatal examinations</td>
</tr>
<tr>
<td></td>
<td><strong>Referral</strong> To secondary/tertiary care by 6 months of age</td>
</tr>
<tr>
<td><strong>Secondary/ Tertiary care</strong></td>
<td><strong>Organisation</strong> Patient care is delivered through a managed clinical network of secondary and tertiary care providers</td>
</tr>
<tr>
<td></td>
<td><strong>Intervention</strong> Orchidopexy performed around 12 months of age</td>
</tr>
<tr>
<td></td>
<td><strong>Patient experience</strong> Provider demonstrates collection and monitoring of parent/carer feedback</td>
</tr>
<tr>
<td></td>
<td><strong>Network audits</strong> Participation in regional audits</td>
</tr>
</tbody>
</table>
**4.2 Quality Specification/CQUIN**

Commissioners may wish to include the following measures in the Quality Schedule with providers. Improvements could be included in a discussion about a local CQUIN.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Description</th>
<th>Data specification (if required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>Age at time of procedure</td>
<td>HES</td>
</tr>
<tr>
<td>Day case</td>
<td>Provider demonstrates &gt; 90% (excluding those with co-morbidities)</td>
<td>HES</td>
</tr>
</tbody>
</table>

**5. Directory**

**5.1 Patient Information**

<table>
<thead>
<tr>
<th>Name</th>
<th>Publisher</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orchidopexy for a palpable testicle</td>
<td>British Association of Paediatric Surgeons (BAPS)</td>
<td><a href="http://www.baps.org.uk/resources/documents/orchidopexy-for-a-palpable-testicle/">www.baps.org.uk/resources/documents/orchidopexy-for-a-palpable-testicle/</a></td>
</tr>
<tr>
<td>Orchidopexy</td>
<td>British Association of Urological Surgeons (BAUS)</td>
<td><a href="http://www.baus.org.uk/Resources/BAUS/Documents/PDF%20Documents/Patient%20information/Orchidopexy.pdf">www.baus.org.uk/Resources/BAUS/Documents/PDF%20Documents/Patient%20information/Orchidopexy.pdf</a></td>
</tr>
<tr>
<td>Undescended testes</td>
<td>Patient.co.uk</td>
<td><a href="http://www.patient.co.uk/health/undescended-testes">www.patient.co.uk/health/undescended-testes</a></td>
</tr>
<tr>
<td>Undescended testicles</td>
<td>NHS Choices</td>
<td><a href="http://www.nhs.uk/Conditions/undescended-testicles/Pages/Introduction.aspx">www.nhs.uk/Conditions/undescended-testicles/Pages/Introduction.aspx</a></td>
</tr>
</tbody>
</table>
5.2 Clinician information

<table>
<thead>
<tr>
<th>Name</th>
<th>Publisher</th>
<th>Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standards for Children’s Surgery - 2013</td>
<td>Children’s Surgical Forum (RCSEng)</td>
<td><a href="http://www.rcseng.ac.uk/publications/docs/standards-in-childrens-surgery">www.rcseng.ac.uk/publications/docs/standards-in-childrens-surgery</a></td>
</tr>
<tr>
<td>Surgery for Children: Delivering a First Class Service- 2011</td>
<td>Children’s Surgical Forum (RCSEng)</td>
<td><a href="http://www.rcseng.ac.uk/publications/docs/CSF.html">www.rcseng.ac.uk/publications/docs/CSF.html</a></td>
</tr>
<tr>
<td>Guidance for Provision of Paediatric Anaesthesia</td>
<td>Royal College of Anaesthetists</td>
<td><a href="http://www.rcoa.ac.uk/gpas2014">www.rcoa.ac.uk/gpas2014</a></td>
</tr>
<tr>
<td>Newborn and Infant Physical Examination: Standards and competencies-2008 (Pending changes)</td>
<td>UK National Screening Committee</td>
<td><a href="http://newbornphysical.screening.nhs.uk/standards">http://newbornphysical.screening.nhs.uk/standards</a></td>
</tr>
</tbody>
</table>

6. Benefits and risks of implementing this guide

<table>
<thead>
<tr>
<th>Consideration</th>
<th>Benefit</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient outcome</td>
<td>• Ensure access to effective and timely local clinical management</td>
<td>• Patients unnecessarily referred to tertiary centres</td>
</tr>
<tr>
<td></td>
<td>• Improve fertility</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Reduce risk of later malignancy</td>
<td></td>
</tr>
<tr>
<td>Patient safety</td>
<td>• Patients have access to appropriate surgical care where needed</td>
<td>• Unnecessary referral and examinations</td>
</tr>
<tr>
<td></td>
<td>• Reduce risk of complications</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Avoid late referrals</td>
<td></td>
</tr>
<tr>
<td>Patient experience</td>
<td>• Improve access to parent/carer information</td>
<td></td>
</tr>
<tr>
<td>Equity of access</td>
<td>• Improve access to effective</td>
<td>• Patients and carers required to travel greater distances to receive</td>
</tr>
</tbody>
</table>
7. Further information

7.1 Research recommendations

- Does orchidopexy around 1 year of age improve fertility?
- Does orchidopexy around 1 year of age reduce the incidence of malignancy?
- Incidence of ascending testis requiring orchidopexy

7.2 Other recommendations

- Establishment and maintenance of general paediatric surgery (GPS) managed clinical networks

7.3 Evidence base

5. Hutson JM, Clarke MC. 2007 Current management of the undescended testicle. *Semin Pediatr Surg*; 16(1) 64-70
10. Dr Foster East Midlands Data  [http://drfosterintelligence.co.uk/](http://drfosterintelligence.co.uk/)
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23. Kollin C. Hesser U. et al. Testicular growth from birth to two years of age, and the effect of orchidopexy at age nine months: a randomized, controlled study. Acta Paediatrica. 95(3):318-24,


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34. Newborn and Infant Physical Examination: Standards and competencies.2008.UK National Screening Committee
http://newbornphysical.screening.nhs.uk/standards


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## 7.4 Guide development group for Orchidopexy

A commissioning guide development group was established to review and advise on the content of the commissioning guide. This group met twice with additional interaction taking place via email.

<table>
<thead>
<tr>
<th>Name</th>
<th>Job Title/Role</th>
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</tr>
</thead>
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<td>Patient representative</td>
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<td>Dr Polly Davies</td>
<td>Consultant Anaesthetist</td>
<td>Royal College of Anaesthetists</td>
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<td>Mr Robin Gupta</td>
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<td>GP</td>
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<tr>
<td>Mr Ashok Rajimwale</td>
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<td>Royal College of Surgeons</td>
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<tr>
<td>Dr William Russell</td>
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<tr>
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<td>British Association of Paediatric Urology Surgeons</td>
</tr>
<tr>
<td>Dr John Somers</td>
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<table>
<thead>
<tr>
<th>Name</th>
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</tr>
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<tbody>
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<tr>
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<td>Royal College of Anaesthetists</td>
</tr>
</tbody>
</table>

### 7.5 Funding statement

The development of this commissioning guidance has been funded by the following sources:

- East Midlands Strategic Clinical Network funded the cost of the guide development group, literature searches and contributed towards administrative costs.
- The Royal College of Surgeons of England and the British Association of Paediatric Surgeons provided staff to support the guideline development.

### 7.6 Conflict of interest statement

Individuals involved in the development and formal peer review of commissioning guides are asked to complete a conflict of interest declaration. It is noted that declaring a conflict of interest does not imply that the individual has been influenced by his or her secondary interest. It is intended to make interests (financial or otherwise) more transparent and to allow others to have knowledge of the interest.

The following interests were declared by group members: None noted