TITLE: Ultrasound for Cryptorchidism: Clinical Effectiveness and Guidelines

DATE: 17 April 2015

RESEARCH QUESTIONS:

1. What is the clinical effectiveness of ultrasound for cryptorchidism?

2. What are the evidence-based guidelines associated with ultrasound for cryptorchidism?

KEY FINDINGS

Two systematic reviews, six non-randomized studies, and two evidence-based guidelines were identified regarding ultrasound for cryptorchidism.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2015, Issue 4), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2010 and April 4, 2015. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

SELECTION CRITERIA

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.
Table 1: Selection Criteria

<table>
<thead>
<tr>
<th>Population</th>
<th>Boys with cryptorchidism</th>
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<tbody>
<tr>
<td>Intervention</td>
<td>Ultrasound</td>
</tr>
<tr>
<td>Comparator</td>
<td>No ultrasound</td>
</tr>
<tr>
<td>Outcomes</td>
<td>Clinical effectiveness (benefit [locating testes]; harms [false negatives])</td>
</tr>
<tr>
<td>Guidelines</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines</td>
</tr>
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</table>

RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

Two systematic reviews, six non-randomized studies, and two evidence-based guidelines were identified regarding ultrasound for cryptorchidism. No relevant health technology assessments or randomized controlled trials were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

Two systematic reviews,\(^1\)-\(^2\) six non-randomized studies,\(^3\)-\(^8\) and two evidence-based guidelines\(^9\)-\(^10\) were identified regarding ultrasound for cryptorchidism.

One systematic review\(^1\) reported that the accuracy of ultrasound to detect the presence or absence of testicles ranged from 21 to 76 percent, it was not able to identify testicles that had atrophied, and it did not eliminate the need for further surgical evaluation. A second systematic review\(^2\) reported that ultrasound was not reliable in the localization of nonpalpable testes and did not rule out intra-abdominal testis. The authors concluded that ultrasound use would not change the management of nonpalpable cryptorchidism.\(^2\)

A summary of the conclusions of the six non-randomized studies is provided in Table 2.

The American Urological Association guidelines for the evaluation and treatment of cryptorchidism\(^9\) do not recommend ultrasound or other imaging methods prior to referral. A guideline produced by the American College of Radiology in conjunction with two other groups\(^10\) recommends the use of ultrasonography for the localization of undescended testes.
### Table 2: Summary of Non-Randomized Studies

<table>
<thead>
<tr>
<th>Author (Year)</th>
<th>Conclusions*a</th>
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<tbody>
<tr>
<td>Skoury et al. (2015)</td>
<td>“Ultrasoundography has low sensitivity and specificity in determining the presence of testes and localisation of their position.”</td>
</tr>
<tr>
<td>Adesanya et al. (2014)</td>
<td>“Ultrasoundography is more accurate than clinical examination in the preoperative localization of undescended testes in children and could play a role in preoperative evaluation of patients with undescended testes.”</td>
</tr>
<tr>
<td>Adesanya et al. (2013)</td>
<td>“Ultrasound assessment is beneficial in pre-operative evaluation of children with undescended testes.”</td>
</tr>
<tr>
<td>Ekenze et al. (2013)</td>
<td>“Ultrasound may identify some otherwise nonpalpable inguinal testes and hence affect therapeutic approach. It may, however, be unhelpful in truly abdominal and vanishing testes.”</td>
</tr>
<tr>
<td>Abbas et al. (2012)</td>
<td>“Ultrasound is not reliable in the preoperative assessment of patients with impalpable testes.”</td>
</tr>
<tr>
<td>Jedrzejewski et al. (2012)</td>
<td>“Scrotal screening ultrasound performed in boys up to 3 years old may deliver information about the number and type of existing pathologies as well as their influence on the testicular volume.”</td>
</tr>
</tbody>
</table>

*a Verbatim conclusions.
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses


Randomized Controlled Trials
No literature identified.

Non-Randomized Studies


Guidelines and Recommendations


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APPENDIX – FURTHER INFORMATION:

Review Articles
