Sentinel lymph node biopsy in endometrial cancer: meta-analysis of 26 studies
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CRD summary
This review concluded that sentinel lymph node biopsy appeared to perform well in the assessment of nodal status in patients with endometrial cancer, but the evidence was insufficient to establish its true performance. These conclusions are appropriately cautious.

Authors' objectives
To assess the diagnostic performance of sentinel lymph node biopsy for the assessment of nodal status in patients with endometrial cancer.

Searching
PubMed and EMBASE were searched for studies published before June 2011; search terms were reported. No language restrictions were applied. The bibliographies of included studies and reviews were screened for additional articles.

Study selection
Studies were eligible for inclusion if they were designed to assess the effectiveness and/or diagnostic performance of a sentinel lymph node technique in assigning nodal status in patients with endometrial cancer. Studies with less than 10 participants were excluded. Studies in a language that could not be translated were only included if the sensitivity or detection rate were clearly reported in the abstract.

Included studies used dye only, isotope only, or both as the method of nodal detection; the injection site was cervix or subserosal myometrium in most studies, with the remaining studies using hysteroscopic injection. Where reported, pathological assessment used haematoxylin and eosin staining or immunohistochemistry. All reported surgeries were laparotomies or laparoscopies.

The authors did not state how many reviewers selected studies for inclusion.

Assessment of study quality
The authors did not state that they assessed methodological quality.

Data extraction
The data were extracted on the detection rate and sensitivity of each sentinel lymph node procedure. The detection rate was defined as the number of procedures in which at least one sentinel lymph node was identified, divided by the total number of procedures performed. Sensitivity was defined as the number of true-positive results in patients with positive histopathological findings. Both the detection rate and sensitivity were calculated per patient.

Three reviewers independently extracted data.

Methods of synthesis
Pooled estimates of sensitivity and the detection rate, with 95% confidence intervals, were calculated using a random-effects model.

Between-study heterogeneity was assessed using $I^2$. Meta-regression was used to assess the possible effects of sample size, year of publication, detection method, injection technique, and routes of surgery on the outcome measures. Publication bias and small study effects were assessed using funnel plots and the Egger test.

Results of the review
Twenty-six studies, with 1,101 procedures (range 10 to 266), were included in the review.

The pooled detection rate was 78% (95% CI 73 to 84) and $I^2$ was 80% indicating substantial heterogeneity. Meta-regression indicated that hysteroscopic injection had a lower detection rate ($p=0.045$) and pericervical injection had a
higher detection rate \( (p=0.031) \).

The pooled estimate of sensitivity was 93\% \( (95\% \text{ CI } 85 \text{ to } 100) \); \( I^2 \) was 16\% indicating low heterogeneity. Meta-regression indicated that subserosal injection had lower sensitivity \( (p=0.049) \).

There was some evidence of significant small-study effects.

**Authors' conclusions**
Sentinel lymph node biopsy appeared to perform well in the assessment of nodal status in patients with endometrial cancer, but the evidence was insufficient to establish its true performance.

**CRD commentary**
The research objective was clearly stated and some inclusion criteria were defined, for the index test, population, and study design. Searches for relevant studies were limited to two databases, and it is possible that some studies were missed. Measures to minimise error and bias were described for the data extraction process, but it was not clear whether similar measures were used in study selection. No assessment of the quality of the included studies was reported and the reliability of these data cannot be assessed. Appropriate meta-analysis was applied and the methods were clearly reported.

The authors' conclusions are appropriately cautious.

**Implications of the review for practice and research**
Practice: The authors did not specify any recommendations for clinical practice.

Research: The authors stated that further research was needed to establish the true performance of sentinel lymph node biopsy and to determine its best use and limitations in the management of endometrial cancer.

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