Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
Ultrasonographically (US) versus stereotactically guided core biopsy as an alternative to surgical biopsy for the diagnosis of nonpalpable breast lesions suspicious for, or highly suggestive of, malignancy.

Type of intervention
Diagnosis.

Economic study type
Cost-effectiveness analysis.

Study population
Women with solitary, nonpalpable breast lesions suspicious for, or highly suggestive of, malignancy.

Setting
Hospital. The economic study was conducted in New York, USA.

Dates to which data relate
The effectiveness data for the US-guided procedure were collected between May 1993 and June 1997. The effectiveness data for stereotactically guided core biopsy were reported from three studies published in 1995, 1996, and 1997. The resource use data were not reported. The fiscal year was 1996.

Source of effectiveness data
Effectiveness data were derived from a single study.

Link between effectiveness and cost data
The costing was retrospectively performed on the same patient sample as that used in the effectiveness analysis.

Study sample
Power calculations were not used to determine the sample size. The US-guided group consisted of 151 solitary, nonpalpable breast masses in 151 women with a median age of 50 years (range: 23 - 80). The stereotactic biopsy group consisted of 678 nonpalpable lesions.

Study design
This was a cohort study, carried out in a single centre. The median duration of the follow-up was 13 months (range: 5 - 48 months). The loss to follow-up was 10%.
Analysis of effectiveness
The principle (intention to treat or treatment completers only) used in the analysis of effectiveness was not specified. The health outcome measures were the percentage of women who were spared a surgical procedure by US-guided core biopsy, the number of malignant lesions, and the percentage of recommended repeat biopsy.

Effectiveness results
The percentage of women who were spared a surgical procedure by US-guided core biopsy was 85% (128/151). The number of malignant lesions was 56 (37%). The percentage of recommended repeat biopsy was 10%.

Clinical conclusions
The frequency of obviating a surgical procedure with US-guided core biopsy in this study was comparable to the frequency of obviating a surgical procedure after stereotactic core biopsy of nonpalpable breast masses in previous studies.

Outcomes assessed in the review
The effectiveness data assessed by review were the frequency of spared surgical procedure and the rate of repeat biopsy for stereotactically guided core biopsy.

Study designs and other criteria for inclusion in the review
Not reported.

Sources searched to identify primary studies
Not reported.

Criteria used to ensure the validity of primary studies
Not reported.

Methods used to judge relevance and validity, and for extracting data
Not reported.

Number of primary studies included
Three studies were included in the review.

Methods of combining primary studies
Not reported.

Investigation of differences between primary studies
Not reported.

Results of the review
The frequency of spared surgical procedure was 84% and 87% for stereotactically guided core biopsy reported from two different studies. The rate of repeat biopsy was 18%.
Measure of benefits used in the economic analysis
The frequency of spared surgical procedure was the main benefit measure.

Direct costs
Costs were not discounted due to the 1 year study period. Resource utilisation was not reported separately from the costs. The cost items were reported separately. The cost analysis covered the costs of localization, biopsy of breast, incisional; and histopathologic analysis for US and stereotactically guided core biopsies. The costs of surgical procedure consisted of the costs of needle localization, surgery, radiologic examination of the specimen (for all lesions), anaesthesia, and histopathologic analysis. The perspective adopted in the cost analysis was not explicitly specified. Cost data were obtained based on a written communication and based on National Medicare average allowed cost per service. 1996 price data were used.

Indirect Costs
Not considered.

Currency
US dollars ($).

Sensitivity analysis
No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
The frequency of spared surgical procedure was 85% for the US-guided and 84% and 87% for stereotactically guided core biopsy reported from two different studies.

Cost results
The total cost of the US-guided procedure was $385 versus $610 for the stereotactically guided approach. The cost of surgical biopsy was $1,332.

Synthesis of costs and benefits
The adjusted costs of US and stereotactically guided core biopsy were calculated based on equivalent results for the stereotactically guided approach and taking into account the percentage of patients who were not spared a surgical procedure by US guided core biopsy. The adjusted cost per case for US and stereotactically guided core biopsies were $588 and $813, respectively, resulting in $744 and $519 cost savings, respectively, relative to the surgical biopsy.

Authors' conclusions
Percutaneous biopsy of a nonpalpable breast mass with either US or stereotactic guidance is less expensive than surgery, but cost savings are greater with US-guided biopsy.

CRD COMMENTARY - Selection of comparators
The reason for the choice of the comparator is clear.

Validity of estimate of measure of effectiveness
The internal validity of the estimates of effectiveness may be weakened by the lack of randomisation, and the absence of both a systematic literature review and a quality assessment of the primary studies included in the review.
Validity of estimate of costs
Quantities were not reported separately from the costs and adequate details of methods of cost estimation were not given.

Other issues
The results need to be treated with some caution because of the absence of the following features: randomisation, a systematic literature review, quality assessment of the primary studies included in the review, sensitivity analysis, and statistical analysis of the costs. The issue of generalisability to other settings or countries was not addressed, although appropriate comparisons with other studies were made.

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