A health maintenance organization's initial experience with laparoscopic-assisted vaginal hysterectomy and endometrial ablation

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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
Laparoscopic-assisted vaginal hysterectomy (LAVH) and endometrial ablation.

Type of intervention
Primary prevention; diagnosis.

Economic study type
Cost-effectiveness analysis.

Study population
Female patients undergoing hysterectomy or endometrial ablation.

Setting
Hospital. The economic study was performed in Worcester, Massachusetts, US.

Dates to which data relate
The main effectiveness data were taken from sources dated 1990-93.

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

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

Study sample
The study sample was 558 female patients having total hysterectomies or endometrial ablations. The hysterectomies could be subdivided into the following types: total abdominal hysterectomy (TAH), vaginal hysterectomy (VH), vaginal hysterectomy with anterior or posterior colporrhaphy (VHC) and laparoscopic-assisted hysterectomy (LAVH). All cases of patients undergoing endometrial ablation (33), LAVH (59) and VH (44) were reviewed. Also reviewed were a random sample of the records of 60 patients having TAH for benign conditions and 40 patients having VHC.

Study design
Prospective case-series study. Medical records of female members of the health plan classic programme were obtained for the four years 1990-1993.
Analysis of effectiveness
The primary health outcomes used in the analysis were hysterectomy rates, postoperative complications and surgical outcomes (e.g. estimated blood loss).

Effectiveness results
Intraoperative complications were similar for all groups. Postoperative complications with TAH were significantly greater than LAVH (45% versus 9%, p<0.01). Postoperative complications were 23% for VH, 37% for VHC and 3% for ablation. Estimated blood loss was greater for TAH than LAVH (488ml versus 330ml, p=0.003). Estimated blood loss for VH was 393ml, 266ml for VHC and 3ml for ablation.

Clinical conclusions
The integration of LAVH and endometrial ablation into an HMO's gynecologic practice improves quality of care by bringing about a marked reduction in surgical complications.

Measure of benefits used in the economic analysis
The measure of benefits used in the economic analysis was the reduction of length of stay and more rapid return to work.

Direct costs
Only health services costs were considered. Hospital charges consisting of operating room charges, recovery room charges, room charges and ancillary charges were supplemented by surgeons' fees, and anaesthesia fees to derive total charges. The charges were taken from the HMO-Fallon Community Health Plan. Telephone interviews by the clinic's quality assurance programme were used to determine the interval between the operation and the week the patients returned to work (return to normal function was used for unemployed women). Data were collected using Data Ease Software.

Statistical analysis of costs
An analysis of variance (Scheffe F test) was used to measure differences in hospital costs and total costs (as well as postoperative complications, duration of operation, estimated blood loss, length of hospital stay, and return to work.) A chi-squared analysis was used to make yearly summary comparisons (postoperative complications, return to work, cost) for all procedures. Statistical analysis was performed using NCSS software (Jerry Hintze, Kaysville, UT).

Indirect Costs
Not stated.

Currency
US dollars ($).

Sensitivity analysis
No sensitivity analysis was performed.

Estimated benefits used in the economic analysis
The duration of LAVH was significantly greater than TAH (128 minutes versus 118 minutes, p=0.02). Durations were 104 minutes for VH, 112 minutes for VHC and 42 minutes for ablation. Length of stay was 1.5 days with LAVH compared to 4.7 days for TAH, (p<0.001). Lengths of stay were 2.7 days for VH, 4.7 days for VHC and 0.5 days for
ablation. As in the case of length of stay, return to work was more rapid for LAVH (3.4 weeks versus 5.8 weeks, p=0.001). Return to work was 4.1 weeks for VH, 5.6 weeks for VHC and 1 week for ablation.

**Cost results**
Total charges were $9,739 for LAVH, $6,795 for TAH, $5,142 for VH, $7,775 for VHC and $3,580 for ablation.

**Synthesis of costs and benefits**
Costs and benefits were not combined.

**Authors' conclusions**
The authors concluded that the integration of LAVH and endometrial ablation into an HMO's gynecologic practice improved quality of care by bringing about a marked reduction in surgical complications and a more rapid return to work. However operating costs were not reduced due to the high total charges for LAVH. Finally the authors stated that endometrial ablation should be employed as an alternative to hysterectomy only after careful consideration, and LAVH should never replace VH.

**CRD COMMENTARY - Selection of comparators**
A justification was given for the comparators used through reference to the published literature. The comparators chosen (TAH, VH, VHC) were all commonly used gynaecological procedures and you, as a user of this database, should consider whether these would represent appropriate comparators in your own setting.

**Validity of estimate of measure of benefit**
The study was based on a prospective case-series study. Observational studies can be susceptible to several types of biases.

**Validity of estimate of costs**
Adequate details of the sources of estimates, resource use, prices and the price date were given.

**Other issues**
The authors conducted a very comprehensive comparison of their findings with other published literature. Although it is unlikely that the cost data are generalisable to other settings or countries, the authors have attempted to explain where differences may exist between their setting and others.

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