Comparison of laparoscopic and minilaparotomy pelvic lymphadenectomy for prostate cancer staging in a community practice

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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
Using Minilaparotomy (MINILAP) or laparoscopic pelvic lymphadenectomy (LAP) for prostate cancer-staging lymphadenectomy.

Type of intervention
Diagnosis.

Economic study type
Cost-effectiveness analysis.

Study population
Patients with prostate cancer.

Setting
Medical centre. The economic study was performed in California, USA.

Dates to which data relate
Effectiveness and resource use data were collected from January 1992 through April 1995. No date was mentioned for the prices used.

Source of effectiveness data
The evidence for the final outcomes was derived from a single retrospective study.

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

Study sample
Power calculations were not used to determine the sample size. The study sample consisted of 44 consecutive patients with prostate cancer who had staging pelvic lymphadenectomy. There were 22 men in the LAP group and 22 in the MINILAP group.

Study design
The study was a nonrandomised trial with concurrent control carried out in one centre.
Analysis of effectiveness
It was not specified whether the analysis of the clinical study was based on intention to treat or treatment completers only. The main health outcomes used in the analysis were effectiveness in detecting lymph node metastasis and complication rate. The study groups were shown to be comparable in terms of age, Gleason Score, prostate specific antigen level and clinical stage.

Effectiveness results
Lymph node metastasis was found in 45% of MINILAP patients and in 27% of LAP patients (the authors assumed that due to the fact that the patients were comparable in terms of clinical stage of the disease, Gleason rate and PSA value, the incidence of the lymph node metastasis should have been similar in the two groups). The difference between the groups in terms of lymph node metastasis identification rate was not statistically significant. The MINILAP had a complication rate of 9.1% versus 31.5% for the LAP group.

Clinical conclusions
MINILAP showed signs of superiority in terms of lymph node metastasis identification rate and complication rate when compared with LAP for prostate cancer-staging lymphadenectomy.

Measure of benefits used in the economic analysis
No summary benefit measure was identified in the economic study and only separate clinical outcomes were reported.

Direct costs
Some items of resource utilisation were reported separately, as were cost components. The average cost consisted of the mean expenses for operative time, disposable laparoscopy equipment, and hospital stay. The omitted costs consisted of the costs of complications (such as imaging, medication and intervention, except the hospital expenses resulting from the complications) and the cost of operating room set up and of cleanup time after lymphadenectomy. The cost analysis was performed from the point of view of the hospital. The source of cost data was the study hospital. Price dates were not given.

Indirect Costs
Not considered.

Currency
US dollars ($).

Sensitivity analysis
No sensitivity analysis was carried out.

Estimated benefits used in the economic analysis
No summary benefit measure was introduced in the economic analysis.

Cost results
The cost of MINILAP was at least $1900 less than that of LAP because of shorter total hospital stay, shorter operation time and lower equipment costs (the average total cost for each study group was not reported). The complication costs were not included in the economic study.
Synthesis of costs and benefits
A synthesis was not performed since MINILAP was treated as the dominant strategy.

Authors' conclusions
Compared to LAP, MINILAP was more cost-effective and produced less morbidity. Patient satisfaction with the procedures was similar. MINILAP is an excellent alternative to LAP for prostate cancer staging in general urology practice.

CRD COMMENTARY - Selection of comparators
The reason for the choice of the comparator (LAP) is clear; it was shown to be a cost-effective health technology in comparison with the standard modified pelvic lymphadenectomy. You, as a database user, should consider if this is a widely used health technology in your own setting.

Validity of estimate of measure of benefit
The absence of randomisation and the small size of the study groups renders the clinical results susceptible to bias, hence adversely affecting the internal validity of the estimate of effectiveness.

Validity of estimate of costs
The resource quantities were reported separately from the costs. Adequate details of the methods of cost estimation were given. The authors themselves admit that the omission of complications, operating room set up and cleanup costs prevented them from giving a complete picture of the cost relationship between the two health technologies.

Other issues
In view of the absence of randomisation, the small sample size, and the lack of sensitivity analysis and statistical analysis of the costs, the results need to be treated with some caution. The authors’, in their conclusion, talked about patient satisfaction, but this was not addressed in the study itself. The issue of generalisability to other settings and countries was not addressed.

Source of funding
None stated.

Bibliographic details
St Lezin M, Cherrie R, Cattolica E V. Comparison of laparoscopic and minilaparotomy pelvic lymphadenectomy for prostate cancer staging in a community practice. Urology 1997; 49(1): 60-63

PubMedID
9000187

DOI
10.1016/S0090-4295(96)00378-0

Indexing Status
Subject indexing assigned by NLM

MeSH
Aged; Cost-Benefit Analysis; Humans; Laparoscopy; Laparotomy; Lymph Node Excision /economics /methods; Lymphatic Metastasis; Male; Neoplasm Staging; Prostatic Neoplasms /pathology /surgery
AccessionNumber
21997000200

Date bibliographic record published
28/02/1999

Date abstract record published
28/02/1999