Laparoscopic nephrectomy: initial experience and cost implications
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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 nephrectomy

Type of intervention
Treatment

Economic study type
Cost-effectiveness analysis

Study population
Patients were men and women requiring surgery for nephrectomy because of persistent pain, recurrent infections or malignancy (1 case). The mean age of patients undergoing surgery was 48 (ranging from 15 to 76).

Setting
A hospital in the UK

Dates to which data relate
No dates are given on effectiveness, resources or prices.

Source of effectiveness data
Single study

Link between effectiveness and cost data
The link is not very clear. It appears that an estimate of the resources used by a "typical" case was derived.

Study sample
The analysis was performed on ten patients. There are no details on the method of sample selection. No sample size calculations were performed.

Study design
Case series, single centre study. Duration of follow-up is not specified. No patients were reported as lost to follow-up.

Analysis of effectiveness
The analysis was not based on intention to treat; those not successfully managed by this technique were reported.
Effectiveness results
8 out of the 10 were "successful" cases. 2 of the patients required conversion to an open procedure. There was no mortality among the group.

Clinical conclusions
8 out of 10 patients were reported to be successfully treated using this method.

Measure of benefits used in the economic analysis
Mortality.

Direct costs
The costs reported were those to the hospital including disposable equipment, theatre and hospital cost per day. Quantities and costs were analysed separately although it is not clear how these were derived. The costs are said to be "typical of most United Kingdom hospitals". The dates of any resources or prices used are not given.

Indirect Costs
Time to return to normal activity was reported.

Currency
UK pounds sterling (£).

Sensitivity analysis
None performed

Estimated benefits used in the economic analysis
No mortality was observed in the intervention group.

Cost results
The approximate total cost of performing a laparoscopic nephrectomy was around 2900. If reusable equipment rather than disposable is used, the cost could be 2000. The cost of an open nephrectomy was said to be 2300. Median time to return to normal activity was 4 weeks (ranging from 3 weeks to 6 weeks). Those that converted to an open procedure took 2.5 months and 4 months to return to normal activity.

Synthesis of costs and benefits
No synthesis was performed.

Authors’ conclusions
The authors conclude that laparoscopic surgery is associated with lower analgesic requirements, shorter hospital stay and shorter time to return to normal activity than open nephrectomy. When re-usable instruments are used the cost is comparable with that of open surgery.
CRD Commentary
This paper suffers from the problem that no reliable comparative data on the alternative procedure are given so we cannot assess the relative cost-effectiveness of one procedure over another. The authors use the two people that converted from the laparoscopic procedure to the open procedure as the data for the alternative but obviously these are in fact failed laparoscopic cases and cannot be considered to represent the effectiveness of the open procedure. The case series followed is very small. We do not know how the time taken to resumption of normal activity was measured and what in fact it means. In terms of the cost data, there is no information on how the typical resource use data was derived nor the source of the typical UK hospital prices.

Implications of the study
A more rigorous study is needed to assess cost effectiveness of laparoscopic nephrectomy.

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