Stapled hemorrhoidopexy, an innovative surgical procedure for hemorrhoidal prolapse: cost-utility analysis

Ribaric G, Kofler J, Jayne DG

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.

CRD summary
This study examined the cost-effectiveness of stapled haemorrhoidopexy, as an initial surgical treatment for women with severe (grade three or four) haemorrhoidal prolapse. The authors concluded that stapled haemorrhoidopexy was cost-effective compared with conventional haemorrhoidectomy. Generally, the methods were good and the results were well reported. Some methods were not reported, making it difficult to fully assess the authors’ conclusions.

Type of economic evaluation
Cost-effectiveness analysis, cost-utility analysis

Study objective
The aim was to examine the cost-effectiveness of stapled haemorrhoidopexy, as an initial surgical treatment for women with severe (grade three or four) haemorrhoidal prolapse.

Interventions
Stapled haemorrhoidopexy, using a circular stapling device to reduce the prolapse, was compared with conventional Milligan-Morgan haemorrhoidectomy.

Location/setting
UK/secondary care.

Methods
Analytical approach:
A decision-analytic cohort model was used to synthesise the evidence from a selection of relevant published studies. The time horizon was one year. The authors stated that the perspective was that of the UK NHS.

Effectiveness data:
The effectiveness data were from a published systematic review of randomised controlled trials comparing the two techniques (Laughlan, et al. 2009, see ‘Other Publications of Related Interest’ below for bibliographic details). This review found 29 trials and the data were combined using fixed-effect and random-effects models. Some trials were excluded because they were not in English or were of low quality. The main clinical effectiveness estimates were the recurrent prolapse rate, the operation time, and the length of hospital stay.

Monetary benefit and utility valuations:
The utility data were from a cost-effectiveness analysis published by the National Institute for Health and Clinical Excellence (NICE).

Measure of benefit:
The measure of benefit was quality-adjusted life-years (QALYs).

Cost data:
The direct medical costs included the operating theatre time, the haemorrhoidal circular stapling device, re-operations, and hospitalisations. The 2009 retail price was used for the stapler device. The other costs were NHS reference costs for 2007 to 2008, or from the NICE cost-effectiveness analysis. They were presented in UK pounds sterling (£), Euros.
(EUR), and US dollars ($). The exchange rates were £1 equals EUR 1.12 or $1.60.

Analysis of uncertainty:
One-way sensitivity analyses were performed on the key parameters, such as the theatre and bed-day costs, the relapse rate, and the re-operation rate. The results were presented in line graphs for some parameters.

Results
The mean costs over one year were £1,062 for stapled haemorrhoidopexy, compared with £1,029 for conventional haemorrhoidectomy. The QALYs were 0.77 for stapled haemorrhoidopexy, and 0.76 for conventional haemorrhoidectomy.

The incremental cost-utility ratio was £4,316 ($6,890 or EUR 4,878) per QALY gained for stapled haemorrhoidopexy.

The findings remained relatively robust to wide variations in the key parameters. For example, if the hospital costs were reduced by 30%, stapled haemorrhoidopexy had an incremental cost per QALY gained of £21,551 ($34,406 or EUR 24,355).

Authors' conclusions
The authors concluded that stapled haemorrhoidopexy was cost-effective, compared with conventional haemorrhoidectomy.

CRD commentary
Interventions:
The two strategies were well described and appear to have been appropriate comparators.

Effectiveness/benefits:
The effectiveness data were from a systematic review of randomised controlled trials, which should ensure that all the best available evidence was included. The studies included in the systematic review were not described, the search strategy was not presented, and few inclusion criteria were reported. This makes it difficult to assess the quality of the estimates and the meta-analysis. The publication (Laughlan, et al. 2009) should be consulted to assess the internal validity and applicability of the estimates. The benefit measure appears to have been appropriate as it incorporated both morbidity and mortality.

Costs:
The unit costs were clearly presented and were from publicly available sources, which should ensure their quality. The resource quantities were not reported, making it difficult to assess if they were accurate. The costs of surgical training and education, and follow-up consultations were omitted and it is uncertain what impact these could have had on the cost-effectiveness. The price year was not stated and it is unclear if the costs were appropriately adjusted for inflation.

Analysis and results:
The analytic approach appears to have been appropriate and was adequately described. The results were sufficiently presented. The sensitivity analysis was a good assessment of the uncertainty in each parameter, but a probabilistic sensitivity analysis could have assessed the overall uncertainty. The authors discussed their findings in relation to those of other studies and noted some limitations to this study.

Concluding remarks:
Generally, the methods were good and the results were well reported. Some methods were not reported, making it difficult to fully assess the authors’ conclusions.

Funding
Support received from Ethicon Endo-Surgery (Europe), and Johnson & Johnson, Germany.

Bibliographic details
Ribaric G, Kofler J, Jayne DG. Stapled hemorrhoidopexy, an innovative surgical procedure for hemorrhoidal prolapse:

**PubMedID**
21853544

**Original Paper URL**

**Other publications of related interest**

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Cost-Benefit Analysis; Great Britain; Hemorrhoids /economics /surgery; Humans; Length of Stay /economics; Prolapse; Quality-Adjusted Life Years; Surgical Stapling /economics

**AccessionNumber**
22011001829

**Date bibliographic record published**
07/12/2011

**Date abstract record published**
24/02/2012