Laparoscopic Burch colposuspension

Authors' objectives
To review the available information on laparoscopic colposuspension for the correction of anatomic stress incontinence.

Searching
MEDLINE was searched between January 1991 and January 1997 for trials published in the English language. The reference lists of the retrieved articles were examined for additional studies, and the proceedings from the International Incontinence Society (1991 to 1996) were checked. Only original publications in a peer-reviewed journal were included in the review.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs), non-randomised controlled trials, and open observational clinical series were included. To be included, there had to be sufficient information to compare the outcome measures between the treated and controlled groups in the RCTs, and an estimate of the change from baseline in the uncontrolled series.

Specific interventions included in the review
Laparoscopic Burch colposuspension using either the transperineal approach or the extraperitoneal approach. Some studies used suturing technique for the 'suspension', whilst others used hernia mesh and surgical staples or bone anchors. Laparoscopic bladder neck suspension in the form of the Marshall-Marchette-Krantz procedure was not included, and neither were other modifications of the Burch procedure. The follow-up ranged from 3 to 50 months (median: 35.6). The comparison operation was open colposuspension.

Participants included in the review
Women with a confirmed diagnosis of urinary incontinence, based on either clinical information (symptoms, physical examination) or urodynamic evaluation. The patient populations in the studies differed in the following: the way stress incontinence was diagnosed; the severity of the cases; and whether or not women who also had detrusor instability or previous surgery for stress incontinence were included. Women with intrinsic sphincter insufficiency were generally excluded.

Outcomes assessed in the review
The outcome measures were continence and complications following surgery. Continence was defined by most studies as the proportion of women who reported to be subjectively cured (continent or dry) or improved. The cough test was also used, but there were few studies that used objective measures. The complications included bladder injury, post-operative retention, haematuria, urinary tract infection and detrusor instability. Hospital stay, blood loss, post-operative catheterisation and analgesic requirements, were also assessed in some studies.

How were decisions on the relevance of primary studies made?
The author does not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
No formal validity assessment was carried out. The papers were categorised into RCTs, non-randomised comparative trials, and open observational clinical series.

Data extraction
The author does not state how the data were extracted for the review, or how many of the reviewers performed the data
Methods of synthesis
How were the studies combined?
The studies were combined narratively. Continence and complications were calculated and expressed as a percentage. The exact 95% confidence intervals were calculated using a binomial distribution.

How were differences between studies investigated?
Differences between the studies were investigated narratively. The studies were grouped by their study design.

Results of the review
Fifteen studies with a total of 764 participants were included: 1 RCT, 4 non-randomised controlled trials, and 10 open observational series.

1. Cure rate.
Only one RCT had been published. This study showed that open colposuspension was significantly more effective than the laparoscopic approach: 97% versus 73%, respectively (p=0.03). The non-randomised comparative studies found no difference in cure rates between the two approaches. In the open observational series, the cure rate varied between 68.6 and 100% (95% confidence interval: 47, 100). One 'long term' follow-up study reported a considerable drop in cure rate, from 89% initially to 68.6% after an average follow-up of 30 months.

2. Complications (adverse effects).
The most frequently reported complication was bladder injury (6 studies). The adverse effects included post-operative retention, haematuria, urinary tract infections, detrusor instability, transmural bladder sutures, Richter's hernia, injury to the inferior epigastric artery, and vesicocutaneous fistula.

3. Length of hospital stay.
The length of hospitalisation was reported to be significantly shorter following the laparoscopic procedure (4 studies). However, the results were not based on RCTs.

Authors’ conclusions
Laparoscopic colposuspension has been shown to be technically feasible. However, it remains unproven that this technique implies the same effectiveness as the open procedure, or adds the advantages of minimally invasive surgery. Thus, the therapeutic usability of the procedure is still unclear.

CRD commentary
This was a well-written review with a focused research question and clear inclusion criteria. The literature search, however, was limited to published trials, primarily from only one database. More relevant studies may have been identified if other databases had been searched and unpublished trials included. The validity and design of the included studies were not assessed. Details of the included studies were provided, but more information about the study populations would have been useful. The author correctly concludes that there is a need for further evaluation of the procedure before its effectiveness can be ascertained.

Implications of the review for practice and research
Evaluation of the laparoscopic colposuspension still needs rigorous scientific assessment, in the form of appropriate RCTs conducted in the hands of experienced urogynaecologists.
Bibliographic details

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Subject indexing assigned by NLM

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.