Graft use in transvaginal pelvic organ prolapse repair: a systematic review


CRD summary
The review investigated the anatomic and symptomatic efficacy of graft use in transvaginal prolapse repair and the rates and diversity of adverse events associated with graft use. Despite limitations in the review, the authors' conclusion that further research is required follows from the results presented and is likely to be reliable.

Authors' objectives
To determine the anatomic and symptomatic efficacy of graft use in transvaginal prolapse repair, and to estimate the rates and diversity of adverse events associated with graft use.

Searching
MEDLINE was searched from 1950 to November 2007. Search terms were reported. References of included studies and selected reviews were also checked. Full text studies published in English, French, Hebrew and German were included.

Study selection
Randomised controlled trials (RCTs) and cohort studies that compared transvaginal pelvic organ prolapse (POP) repair using native tissue with repair using graft, or studies that compared one type of graft with another, were eligible for inclusion. For the estimation of adverse event rates, case series reporting on adverse events associated with graft use in at least 30 patients were also included. Any study describing an adverse event after use of transvaginally placed grafts was eligible to determine the spectrum of types of adverse events. Studies that reported anatomic, symptomatic or adverse events on any type of graft material in pelvic organ prolapse repair (as defined by Badeen-Walker or pelvic organ prolapse quantification classification methods for comparative studies only) were eligible for inclusion in the review. Studies of participants that received both pelvic organ prolapse graft repair and mesh sling were included. However, studies of abdominal or laparoscopic graft use were excluded. Outcomes of interest included anatomic failure as well as a variety of instruments measuring symptomatic and sexual function outcomes.

The included comparative studies examined graft use for posterior, anterior, or multiple compartments. A number of different graft types (fortagen, pelvicol, vicryl mesh, tutoplast, polypropylene, small intestinal submucosa, marlex and gynemesh) and comparators (traditional, site-specific, ultralateral or wide plication, vicryl and gynemesh-soft) were included. The degree of prolapse included in most studies was at or above stage two (pelvic organ prolapse quantification or Badeen-Walker). Mean follow-up ranged from six to 17.5 months.

The authors did not state how the papers were selected for the review, or how many reviewers performed the selection.

Assessment of study quality
Methodological quality was assessed based on a three-category grading system modified from the Agency for Healthcare Research and Quality grading system. Quality (good, fair, poor) was based on the likelihood of various biases and the completeness of reporting, and may vary for different outcomes within the same study.

The authors did not state how many reviewers performed the validity assessment.

Data extraction
Where reported, number of events or percentages and p-values for the outcomes of interest were extracted. For studies reporting outcomes at multiple time points, outcomes with the longest follow-up were taken. Attempts were made to contact the authors of the primary studies where additional information was required.

Data were extracted by one reviewer onto a standardised form and independently checked by a second reviewer. Any disagreements were resolved by discussion or referral to a third reviewer.
Methods of synthesis
There was insufficient data to perform meta-analyses. The authors had planned to perform meta-analyses for anatomic and symptomatic efficacy, when specific conditions were met, including a sufficient number of studies (three) with similar interventions, study designs and outcomes. A narrative description of the studies was presented.

Results of the review
Seventy-four studies were included in the review. Sixteen comparative studies (n=1,986), including six randomised controlled trials (RCTs), examined efficacy of graft use. Fifty-eight studies (including 37 non-comparative studies with at least 30 participants and 11 non-comparative studies with less than 30 participants) and ten case reports examined adverse events outcomes. The quality of the included comparative studies was variable; most studies were underpowered. Reported sample sizes ranged from 12 to 214 per arm.

One RCT and one cohort study reported a favourable effect of graft use (synthetic, non-absorbent) in the anterior compartment for anatomic and symptomatic outcomes. There was insufficient data to determine efficacy of graft use for posterior and apical compartments, or for biologic or synthetic-absorbable graft in the anterior compartment.

Bleeding complications ranged from 0 to 3%, visceral injury from 1 to 4%, urinary infection from 0 to 26%, graft erosion from 0 to 29%, and fistula from 0.4 to 2%. There were insufficient data regarding dyspareunia, sexual, voiding, or defecatory dysfunction.

Other results for non-comparative studies were also reported in the review.

Authors’ conclusions
The existing evidence was limited to guide decisions on the use of graft materials in transvaginal prolapse surgery. Further research is required.

CRD commentary
The review questions were supported by clear inclusion criteria. The literature search was limited to one medical database, thus it was possible that relevant studies may have been missed. Specific attempts were not made to locate unpublished studies, and the search was restricted by language, raising the possibility of language and publication bias. Appropriate steps were taken to minimise the likelihood of reviewer error and bias for data extraction, but it was not clear whether similar steps were taken for study selection or quality assessment.

A formal quality assessment was performed and summary results reported. The decision not to perform meta-analyses was appropriate, given the apparent differences between the included studies. However, limited synthesis of the data was presented.

Despite the limitations in the review, the authors’ conclusion, that further research is required, follows from the results presented and is likely to be reliable.

Implications of the review for practice and research
Practice: The authors stated that detailed recommendations for clinical practice were reported in their companion article (see Publications of Relation Interest field for bibliographic details).

Research: The authors stated that further research is required to evaluate anatomic or symptomatic efficacy of graft use in transvaginal pelvic organ prolapse repair for any compartment.

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**Other publications of related interest**

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