Fibrin glue in the management of anal fistulae
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CRD summary
This review assessed the efficacy of fibrin glue in the management of anal fistulae. The authors concluded that fibrin glue is theoretically attractive as a first-line treatment of some types of anal fistula, but that further randomised controlled trials are required. The authors’ tentative conclusion is supported by the evidence presented, however, additional relevant studies might have been missed.

Authors’ objectives
To assess the efficacy of fibrin glue in the management of anal fistulae, in terms of recurrence rates, continence disturbance and other complications.

Searching
The authors searched MEDLINE and EMBASE from inception to February 2004, and the Cochrane Library (Issue 1, 2004); the search terms were reported. In addition, the reference lists of included studies and articles from the authors' personal files were screened for additional relevant studies. The searches were limited to peer-reviewed, English language articles.

Study selection
Study designs of evaluations included in the review
The authors did not state any inclusion criteria in relation to the study design. The included studies were randomised controlled trials (RCTs), non-randomised controlled trials and retrospective studies. The duration of follow-up ranged from 1 to 57 months.

Specific interventions included in the review
Studies investigating the role of fibrin glue were eligible for inclusion. Some studies performed pre-operative bowel preparation and gave liquid diets for 24 to 48 hours post-operatively to avoid early bowel movement, some only performed pre-operative bowel preparation, and some employed neither protocol. The majority of the studies described blunt curettage or abrasion with a gauze strip to ensure adequate removal of the granulation tissue and/or epithelial lining of the fistula tract. All studies performed mechanical cleansing of the tract; some also performed chemical cleansing. The methods used to close the internal opening included digital compression whilst instilling the glue, covering the opening with Vaseline gauze, simple stitch closure and formation of a transanal full thickness rectal advancement flap. The use of antibiotic therapy varied between studies.

Participants included in the review
Studies of participants with specific or non-specific anal fistulae were eligible for inclusion. The aetiologies of anal fistulae were cryptoglandular, Crohn's disease, human immunodeficiency virus disease, anastomosis, post ileal pouch-anal anastomosis, and post obstetric or other operation. Some studies excluded patients in whom secondary tracts or collections were present, or described a two-stage procedure, whilst others included such patients but did not perform a two-stage procedure.

Outcomes assessed in the review
The outcomes of interest were recurrence rates, continence disturbance and other complications.

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

Assessment of study quality
The authors did not state that they assessed validity.

**Data extraction**
The authors stated that the data were independently extracted, but they did not state how many reviewers performed the data extraction or how any disagreements were resolved. The data were analysed on an intention-to-treat basis. Data on the numbers of complications, recurrences, cases of continence disturbance and other complications were collected.

**Methods of synthesis**

How were the studies combined?
A narrative synthesis was presented.

How were differences between studies investigated?
The potential reasons for variation in the results were discussed.

**Results of the review**
Sixteen studies were included in the review: 2 prospective RCTs (n=64), 11 prospective non-randomised trials (n=301) and 3 retrospective studies (n=106).

There was great variation in the success rates of fibrin glue for the treatment of anal fistulae: the overall recurrence rates ranged from 0 to 100%. This variation may stem from differences in patient and fistula selection, treatment protocols and follow-up duration. Where reported, other complications included intersphincteric abscess (1 patient), acute perianal abscess (1 patient), post-laser pain at defaecation lasting 1 to 4 weeks, and development of secondary tract (1 patient).

One study compared autologous fibrin adhesive with commercial fibrin adhesives and found no significant difference in the recurrence rates, 46% and 36%, respectively.

**Authors' conclusions**
Fibrin glue is theoretically attractive as a first-line treatment in the management of the types of anal fistula in which it has been shown to work: it is simple to use, has a minimal morbidity, and should not affect later treatment options in the event of its failure. However, further research is required, in the form of RCTs.

**CRD commentary**
The review question was clear in terms of the intervention, participants and outcomes of interest. Three appropriate electronic databases were searched but only peer-reviewed English language studies were included, thus increasing the potential for publication bias and language bias. The authors stated that the data were independently extracted for the review, but they did not state how many reviewers performed the data extraction or how any disagreements were resolved. The authors also did not state how studies were selected for the review, therefore the potential for reviewer bias and error cannot be assessed for this stage of the review process. The validity of the included studies was not assessed. Adequate details of the included studies were presented, and the narrative synthesis was appropriate in view of the differences between the studies. Most of the included studies had very small sample sizes, ranging from 6 to 79. The authors' tentative conclusion is supported by the evidence presented, however, additional relevant studies might have been missed.

**Implications of the review for practice and research**
Practice: The authors stated that fistulotomy remains the surest way of dealing with fistulae, but it is only appropriate in patients in whom such a strategy is associated with minimal risk to sphincteric function. For other patients, the use of fibrin glue is another addition to the surgical armamentarium.
Research: The authors state that appropriately designed trials are needed to assess whether the refined use of fibrin glue in the treatment of anal fistulae is justified.

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