Percutaneous lysis of epidural adhesions: evidence for safety and efficacy

Racz GB, Heavner JE, Trescot A

CRD summary
This review concluded that there was strong evidence that percutaneous adhesiolysis treatment for chronic low back pain was effective in the short term and moderate evidence it was effective in the long term. Complications occurred, but evidence was limited. Given the small number of studies and poor reporting in the review, the authors' conclusions should be interpreted with some caution.

Authors' objectives
To assess the safety and efficacy of percutaneous lysis of epidural adhesions for the treatment of chronic low back pain.

Searching
A previous search undertaken by the authors included a search of EMBASE, PubMed, Web of Science and MD Consult databases and Google between December 2004 and December 2006 for articles. There was an updated search to January 2008. Search terms were reported. Reviews, published trials and case reports identified by the search were examined.

Study selection
Randomised controlled trials (RCTs), non-randomised studies and observational studies that evaluated the efficacy or complications of adhesiolysis to treat chronic low back and leg pain were eligible for inclusion if they were published within the previous two years. Eligible studies were required to include patients who had undergone non-interventional treatment (physical therapy, oral medications) or prior fluoroscopically guided epidural steroid injections and to have epidural scarring as confirmed by a filling defect on epidurography. The primary outcome of interest was short-term (≤3 months) and long-term (≥3 months) pain relief. Secondary outcomes were functional or psychological improvements, improvement in work status and complications.

Where reported, included studies were of patients with chronic low back pain and sciatic nerve root compromise and patients with monosegmental or lumbar radiculopathy, some of whom had a history of previous treatment failure. Where prior treatment in patients was not specifically addressed, it was assumed that patients with pain for long periods of time (greater than 12 months) had received previous conservative treatment. Where studies included controls, patients received physiotherapy, catheterisation without adhesiolysis or physical therapy with or without medication (not specified). Various outcome measures were used; these included visual analogue scale, Oswestry disability score, Gerbershagen score, analgesic score and subjective pain score (McNab score). Other outcomes reported included comparison of adhesiolysis to epidural steroid injections or standard therapy, effects of adding hypertonic sodium chloride solution or hyaluronidase and the safety of percutaneous adhesiolysis.

The authors did not state how many reviewers screened the studies for inclusion.

Assessment of study quality
The authors stated that they used methodological quality criteria from the Cochrane Musculoskeletal Review Groups for RCTs and AHRQ criteria to assess the strength of evidence of RCTs and non-randomised trials. Studies were eligible only if their methodological quality met predefined criteria. Qualitative analysis was conducted using five levels of evidence for effectiveness of adhesiolysis. Any differences in opinion in conclusions were resolved by modifying the conclusion with appropriate explanation.

Data extraction
The authors stated that modified versions of standard data sheets were used to extract data. No further details were provided and they did not state how many authors performed data extraction.

Methods of synthesis
Data were combined as a narrative synthesis.

**Results of the review**

Four RCTs, two prospective studies and two retrospective studies were included in the review (n=553, range 25 to 129 patients). All four RCTs reported adequate randomisation, but only two were adequately blinded. Three RCTs had comparable baseline patient characteristics. Follow-up data was collected at one, three, six and 12 months.

All four RCTs reported improvements in pain relief with adhesiolysis in both short and long terms, as compared with controls (patients as their own controls or compared with other patients). Both prospective studies showed improvements in the short and long term. Both retrospective studies reported improvements in the short term, but showed mixed results in the long term.

All eight studies showed improvement in pain relief with adhesiolysis compared with either epidural steroid injections or after failed treatment with epidural steroid injections.

Six studies reported some evidence of subarachnoid block or puncture, infection or abscess, catheter complications and other minor complications such as rash and itching. Findings were reported in the review. Other outcomes were reported in the review.

**Cost information**

The authors identified one cost-effectiveness study, but did not provide further details.

**Authors’ conclusions**

There was strong evidence to suggest that percutaneous adhesiolysis was effective in the short term (three months) and moderate evidence that it was effective in the long term (greater than three months). Complications occurred, but there was only limited available evidence.

**CRD commentary**

The review question was clear and supported by appropriate criteria for participants, intervention, outcomes and study design. The literature search was adequate, but it was unclear whether there were any language restrictions and it did not appear that attempts were made to locate unpublished data. Thus, potentially relevant papers may have been missed. The authors did not state the processes for study selection and data extraction and it was unclear how many reviewers performed validity assessment, so reviewer error and bias could not be ruled out. Although validity was assessed, it was somewhat limited. Given that few details were provided on patient characteristics and methodological procedures, and some of the included studies reported limited results, a narrative synthesis was appropriate. Only a small number of studies and patients were included in the review. The authors’ conclusions appeared to reflect the evidence, but given the small number of studies and poor reporting in the review, they should be interpreted with some caution.

**Implications of the review for practice and research**

The authors did not state any implications for practice and research.

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