Reviewer's report

Title: Residive disc herniation after first lumbar disc herniation surgery; a 5-year follow-up

Version: 1 Date: 12 September 2006

Reviewer: Sohail K Mirza

Reviewer's report:

General
The manuscript describes useful research related to the risk of repeat surgery following lumbar disc surgery. The investigators sought to clarify the risk related to recurrent herniation at the same lumbar segment as the initial surgery; this information is lacking in larger studies based on administrative data.

I think the study provides useful information on the cumulative risk of repeat surgery at 5-year follow-up. However, some aspects of the paper need clarification.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Please clarify whether this study is a prospective study or whether it is a case series from a retrospective chart review. The methods section states that patients completed pain and function questionnaires before surgery and also states that data for the study were collected from patient files. Was this a retrospective review of all data in the chart, including pre-operative questionnaires?

Were data collected for outcomes other than re-operation (e.g. pain, disability)? It seems to be so in the abstract, but it is not presented in the rest of the paper.

Were questionnaires also completed at the end of follow-up?
What can be said of the possibility of repeat surgery among the 37 patients who did not "return for a post-operative check in the hospital's outpatient clinic"? If these patients had the option of seeking treatment elsewhere, then it may be difficult to interpret the observed re-operation rate.

I find the second paragraph of the methods section confusing. It seems to describe a general treatment approach rather than specific methods for this study. If this section describes protocol for a prospective study, than specific information should be provided for the study patients (i.e. percentages).

In the statistical analysis description, it would be helpful to clarify what the investigators mean by "bias-corrected bootstrap" and "bootstrap estimate of variance."

I am also not clear about the label "residive lumbar disc herniation"; is this the same as recurrent? Or do the investigators suggest persistent herniation not excised at discectomy?

The investigators are attempting to examine the association between re-operation and several pre-operative characteristics. With re-operation in only 17 patients, I am not sure how many factors can be analyzed in a multivariate model. I think some discussion of sample size and power is appropriate. The study likely does not have a sufficiently large sample size to assess many of the potential risk factors currently being analyzed.

The Oswestry disability index is mentioned in the abstract but nowhere else, and no data for it are presented.

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
Discretionary Revisions (which the author can choose to ignore)

The study does not consider imaging findings or motor deficit; perhaps they could mention in the discussion the potential impact of this constraint.

**What next?:** Accept after minor essential revisions

**Level of interest:** An article of importance in its field

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes

**Declaration of competing interests:**

I declare that I have no competing interests.