Reviewer's report

Title: Clinical and radiological outcomes after management of traumatic knee dislocation by open single stage complete reconstruction

Version: 3 Date: 3 February 2010

Reviewer: Rainer Ludtke

Reviewer's report:

This is only a short statistical review assessing the study methodology and presentation of statistical results.

Study design
The authors compared patients from 1980 to those from 2006. I doubt that these patients indeed form a homogeneous group (which is the premise to apply statistical methods). Diagnoses, operation techniques and concomitant medications/interventions might have changed.
Moreover, it uncertain whether the outcomes are comparable across patients. Most outcomes change over time (it is e.g. well-known that quality of life decreases with age), as do predictors like smoking status, weight, or additional injuries.
A total number of 74 patients is rather small to reliably assess which predictors affect outcome.

Statistics
The statistical model (repeated measurement ANCOVA) is insufficiently described. What were the outcome parameters, which factor determined repeated measurements (presumably time), how many time points were considered?
Moreover, it is unclear, how the stepwise variable selection was done. Was is a forward or backward selection? What were the criteria to drop or leave a variable?
No details are giving whether missing values occurred and how they were dealt with (which is especially important for the stepwise variable selection).
No efforts were made to adjust the results for multiple statistical errors. In consequence, most of the reported predictors are probably false positive results.

Results
From my point of view, presentation of results is not acceptable. Predictors are not adequately defined (what e.g. does “higher degree of secondary education”, or “greater age at injury” exactly mean?). Moreover, for each predictor and outcome an effect estimate, supplemented by an 95% confidence interval, should be reported, on how much this predictor affects the outcome. Simple “+” and “-“
notation does give sufficient information.

**Level of interest:** An article whose findings are important to those with closely related research interests

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

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests