Reviewer's report

Title: Radiographic outcome of surgical treatment of adolescent idiopathic scoliosis in males versus females

Version: 2 Date: 2 August 2008

Reviewer: Toru Maruyama

Reviewer's report:

This is an interesting study regarding gender differences in the response to the surgical correction.

The authors’ conclusion is, more rigid male curve could be corrected to the same extent as more flexible female curve, which is same to Marks’s conclusion.

This conclusion sounds somewhat peculiar for me.

Can the authors specify the reason why rigid male curve has the same correctability as flexible female curve has.

Major Compulsory Revisions

I would like to clarify some points before accepting the authors’ conclusion.

1) Flexibility demonstrated on the side-bending radiographs may not precisely reflect the correctability of the curve. Obviously, correction maneuver at the time of surgery is different from pure side-bending.

Please indicate the detailed information about the method by which side-bending radiographs were taken
   . Were they taken in supine position?
   Side-bending was conducted actively by the patient?

2) Are matched pairs truly matched except flexibility?

The prevalence of the cases treated anterior and posterior was different between all males and all females (71% and 48%).

How was the difference between the matched males and females?

Please clarify the prevalence of anterior and posterior procedure in the matched pair.

As an anterior procedure, was only anterior release performed?

3) Are the statistical analyses properly conducted?

Correction rate of males are lower than that of females, although the difference was not statistically significant. The authors seem to conduct only Mann-Whitney test to analyze the difference of the correctability between genders.

Two-sample t test can be used for the analysis when the variances of the two
samples are not significantly different. In such a case, I would recommend to exclude the patients treated with Harrington instrument (HI) and to analyze only who were treated with segmental instrumentation.

If the HI may have much lower correctability than the segmental instrumentation, the variance of the correctability becomes larger, and in consequence, gender differences become more obscure.

Minor Essential Revisions

Page 2, line 3: is ---- are
Page 2, line 8: consecutive
Page 2, line 15: 30.06 --- 30.1
Page 2, line 17: 30.06 --- 30.1
Page 3, line 13, 14: Riser 5, Risser 4 --- Risser V, Risser IV
Page 4 Line 8: How many cases are there for CD, Diapason, or USS?
Page 4, line 9: where --- were?
Page 4, line 21: anterior --- anterior release?
Page 5, line 18: whit --- with?
Page 6, line 12: Although; --- Although,?
Page 7, line 9: Mark M --- Marks et al.?
Page 7, line 20: Helenius I --- Helenius

Table 2, Table 3, preoperative flexibility of the males: 30 ---30.1

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

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

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.