Reviewer's report

Title: Treatment of scoliosis in patients affected with Prader-Willi syndrome using various different techniques

Version: 2 Date: 8 April 2010

Reviewer: Lawrence Lenke

Reviewer's report:

This is a re-review of an article that has already been revised following comments from other reviewers. I was asked to provide additional information regarding this manuscript.

This is a small review of six patients who underwent scoliosis surgery for Prader-Willi syndrome at a single center. It is acknowledged that scoliosis surgery for these patients is both infrequent and challenging.

Specific Comments:

Abstract

Methods, last sentence: “…treated with titanium pedicle screw constructs.”

Results, line 4: “Resolved” may be a better word to use than “regressed”.

Results, line 9: What do the authors mean by detachment of a distally located bar? Do they mean rod?

Conclusions, the first sentence states that pedicle screws alone allow surgeons to obtain immediately solid correction of the deformity and may also reduce risks and perioperative complications. This really was not shown in this small series as the one patient who required revision for implant related complications was the last patient in the series who had a screw construct, which had to be extended from L3 to L5 postoperatively. In addition, they discuss a growing rod technique although they really never performed a “growing rod technique” as the patient who they inserted growing rods in never had a formal lengthening. This patient was just definitively fused 18 months post procedure so there really is no information in the article at all about the use of growing rod techniques for these patients. Therefore, these two portions of the Conclusions should be revised/removed. I think what the paper proves is that these patient’s surgical care is rare, complicated, and is probably best suited for posterior multilevel pedicle screw constructs with still a risk of complications even with expert techniques.

Page 5, Methods: How can the authors be certain that two of the patients who did not have karyotype confirmation of Prader-Willi syndrome actually had the syndrome? How can the authors be absolutely sure of the diagnosis of these two patients?

Page 8, line 5: “…two couples of pedicle screws…” I wonder if they mean to say two pairs of pedicle screws or two levels of pedicle screws. The word “couples” is
not typical utilized in this context.

Page 8, line 8: The word “resolved” may be better than “regressed” for the neurologic deficit.

End of the first paragraph: Why was this patient not followed up with further surgery to halt progression of his kyphoscoliosis? Obviously, he still had some neurologic deficits but to allow his deformity to continue to progress does not seem to be a very wise treatment modality.

Page 11, 5 lines from the bottom: I assume that the term “screw mobilization” means screw pullout or back out, correct? Why was this patient revised to L5 and not L4?

Overall, I think this article is worth publishing as it is important to alert scoliosis surgeons of the complexity when surgically treating the Prader-Willi population. After these minor edits are completed the manuscript will be acceptable for publication from my perspective.

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

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

Medtronic: Consultant (ended January 2009); Royalties (significant); Research support for certain studies (ended July 2009)
I hold 9 patents as a co-developer of Medtronic instrumentation/devices
DePuy: Research support
Axial Biotech: Research support
Quality Medical Publishing: Royalties