Reviewer's report

Title: Rate of Intraoperative Problems during Sacroiliac Screw Removal: Expect the Unexpected

Version: 0 Date: 10 Dec 2018

Reviewer: Jonathan Sembrano

Reviewer's report:

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This is a case control series where authors selected 19 patients who had both sacroiliac joint (SIJ) screw fixation for pelvic trauma and subsequent screw removal. They compared the 1st (fixation) and 2nd (removal) surgeries in terms of technical difficulties, postoperative complications, radiation exposure time, total OR time and time per screw. They found that they encountered significantly more technical difficulties during removal than during screw placement; also that time per screw was significantly higher for removal compared to placement. The authors conclude that routine SI screw removal is not recommended in light of their results.

This is a very well-written manuscript that merits publication, and the authors readily acknowledge their study's limitations in the Discussion. The authors are correct in that there still is some debate on whether routine removal of iliosacral screws placed for pelvic trauma should be routinely removed or not; thus, the topic they address is quite relevant and worth pursuing. Although they have small numbers, their use of patients who had both procedures done help strengthen their study because the patients somehow serve as their own controls.

I just have a few questions/comments:

- "CM" combined mechanism. I had to go to the Abbreviations page at the end just to learn what this means. Please include definition of CM in the body of the manuscript.

- Five of their patients had "SIJ pain" as the indication for removal. How was SIJ pain diagnosed? And did their pain get better after removal?

- They had 7 intraop technical difficulties. 4/7 were due to difficulty removing the washer. Most surgeons would perhaps just leave the washer alone, if they don't come out easily enough. The authors also acknowledge this in the Discussion; however, they also said
that "most patient prefer complete implant removal". My experience has been different, which is that most patients are ok with leaving something like a washer inside if it is explained to them that trying to retrieve it might cause more harm by lengthening the incision, more muscle dissection, increased bleeding and possible nerve injury. My question is, if we discount the washer-related problems, would there still be a difference between screw placement vs screw removal in terms of technical difficulties?

- The authors mentioned several proposals on how to decrease the technical problems (e.g., using a larger tap to engage the washer; using a push screw from the other side for broken screws; designing a washer that is mounted to the screw head, etc.). Did the authors employ any of these techniques in their series (i.e., using a larger tap)?

- Were there any broken screws in their series? If so, did the authors remove the broken tips?

- In all 19 patients, did the patients undergo 'complete' removal of all implants (all washers, broken screw tips, etc.)? For those who had anterior plate fixation, were these removed as well, or just the SI screws?

**Are the methods appropriate and well described?**  
If not, please specify what is required in your comments to the authors.

Yes

**Does the work include the necessary controls?**  
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**  
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**  
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