

Peer review file

Article information: <https://dx.doi.org/10.21037/jss-21-43>

Reviewer A

Comment 1: All empires fall, you just have to know where to push - inappropriate title.

Reply 1: We appreciate the advice and have modified the title. It was certainly not our intention to be overly ambitious with the title, and we have modified to a more appropriate title reflecting the preliminary nature of our small case series.

Changes in the text: Title changed.

Comment 2: Well written.

Reply 2: Thank you – we appreciate the complimentary words.

Changes in the text: No changes.

Comment 3: Small size- too small to infer conclusions.

Reply 3: We appreciate the Reviewer's advice and agree that this is a very small sample. It is certainly not our intention to over-conclude from this small case series, and we have further mentioned the limitation of our small sample size throughout the discussion and limitations.

Changes in the text: Changes to discussion/limitations: lines 238-247, 309-312.

Comment 4: The authors note in-depth analysis to counteract this however, ability to walk around the course was not included. Walking distance is an easy and applicable outcome measure.

Reply 4: We appreciate the helpful insight by the Reviewer. Although walking distance would have been an easily quantifiable outcome, we unfortunately did not ask this question on our surveys. In future studies, we certainly will ask about walking versus driving the course, which is an important marker of surgical recovery and function. We attempted to quantify amount of golf played, which we thought would be most important to allow patients to enjoy this hobby. That said, walking the course is a great surrogate of physical fitness, pain levels, and overall recovery from spine

surgery. We have added this to the discussion/limitations section.

Changes in the text: Changes to discussion/limitations – lines 318-322.

Reviewer B

Comment 1: The authors investigated detailed information regarding return to golf after adult degenerative and deformity spine surgery.

Reply 1: Thank you for the concise summary.

Changes in the text: No changes.

Comment 2: Major comments: 1. Preoperative diagnoses (and surgeries) of the 6 patients they treated are heterogeneous. While investigation on return to golf in patients undergoing big deformity surgery is a very interesting topic, that in degenerative diseases with short fusion surgery are already well documented in literatures. I suggest that the authors focus on their 3 patients who underwent deformity surgery. The title would be " Return to golf after adult spinal deformity surgery: an in-depth review of how surgery impacts golf play and performance".

Reply 2: We appreciate the helpful suggestion, and we have attempted to provide in-depth data on the deformity patients. That said, we would respectfully disagree with the assertion that return to golf is well studied in degenerative populations. We found very few studies that addressed postoperative golf habits specifically, especially primary data of postoperative patient outcomes. Many of the “expert survey” studies are helpful, but they are hypothetical. We only found one dedicated golf study, and the other study that had primary data on golfers included tennis players and swimmers, and only addressed cervical spine operations. Due to the relative dearth of information regarding return to golf after spine surgery, we think it is beneficial to surgeons and patients to include the three degenerative patients, although the sample is admittedly small.

Changes in the text: No changes.

Comment 3: A literature review with an additional Table that listing previous reports regarding return to golf in long instrumentation surgery (if applicable)

would be helpful for readers.

Reply 3: Thank you for the helpful suggestion. We have included all relevant papers in the discussion section, and in reality, there are not many prior studies that focus on golf after spine surgery. The survey studies that exist are helpful, but we found only two studies that contained primary data on return to golf after spine surgery, and this was for degenerative operations: one study by Shifflett et al.² and one study by Richards et al.¹ Moreover, we found no studies discussing return to golf after major spinal deformity surgery. Though a table would be helpful, for two studies, we hope they are adequately addressed in the discussion section.

Changes in the text: No changes.

Comment 4: What is the postoperative therapeutic protocol for the patients undergoing deformity surgery? How do the authors educate them with regard to their lifestyle, exercise, and sport activity (particularly golf)? Any insights on movements they shouldn't do (e.g., full swing at immediate postoperative stage)? This information would be helpful for readers who treat spinal deformity.

Reply 4: We greatly appreciate the suggestion by the Reviewer. Postoperative practices after major spinal deformity surgery are an important part of management, and we have included this in the method section specific to cervical, lumbar, and deformity surgery.

Changes in the text: Method section – lines 156-167.

Comment 5: Minor comments: 1. Table 2 needs captions for abbreviation used

Reply 5: Thank you for your comment. We've revised Table 2 to include captions for abbreviation used.

Changes in the text: Table 2 updated.

Comment 6: An additional Figure for Patient #4 would be beneficial. View this excellent paper.

Reply 6: We have included a new figure for patient #4.

Changes in the text: Figure 4 added, and figures 4-6 renumbered appropriately.

Reviewer C

Comment 1: In this study, although the sample size is small, the authors investigate the return to play golf of patients who have undergone various spine surgeries ranging from degenerative to deformity surgeries, which is an interesting study for both patients with spine diseases who enjoy golf and spine surgeons. I believe that this study is useful and deserves to be accepted for publication in this journal. The authors may wish to consider the following comments.

Reply 1: Thank you for the thorough review.

Changes in the text: No changes.

Comment 2: General Comment: It would be more interesting if specific golfing behaviors that were perceived as disadvantageous postoperatively in patients who underwent surgery for deformity were investigated. (For example, setting a golf ball on a tee, picking up a golf ball from a cup, etc.)

Reply 2: This is an excellent recommendation brought forth by the Reviewer. We have added some qualitative information on postoperative return to golf in Table 2, specifically the hardest part about returning. That said, we could have done so in a more systematic way. We have added this excellent suggestion to the limitations section, as an area of future study.

Changes in the text: Discussion/limitations – lines 321-325.

Reviewer D

Comment 1: The authors conducted an interesting study on returning to golf after spine surgery. There has been information about AIS and other conditions, but not about spinal deformities in the elderly. It is surprising that patients who have been fused from the pelvis to the upper thoracic spine are able to return to golf. Although there are some problems such as the small number of cases and the short follow-up period, this study provides useful information for the authors.

Reply 1: We appreciate the complimentary review.

Changes in the text: No changes.

Reviewer E

Comment 1: Sample size is indeed very small. Article addresses RTP well, but sample size may be a limiting factor. With that said, nice job detailing RTP in golf population with interesting demographic information and standardized golf evaluation.

Reply 1: Thank you for your time and consideration in reviewing our manuscript. We have addressed the small sample size throughout the manuscript, and have reframed this study as an early, pilot study with preliminary results.

Changes in the text: Changes to discussion/limitations: lines 239-247, 313-326.