July 06, 2021

Dear Reviewers,

On behalf on my co-authors and myself, thank you for your thoughtful and constructive comments. In this cover letter, we have addressed each of the issues raised and have highlighted the relevant revisions in the manuscript itself (underlined). Below, please find item-by-item responses to the Reviewers’ comments.

Please note: Editor’s and Reviewers’ comments are in italicized red font; Authors’ answers are in regular black font; paragraphs from the manuscript are highlighted in light grey.

Sincerely yours,

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Reviewer #1:
The results given with excellent statistics come with no surprise. They reflect the experiences in treating these fractures. Nevertheless, the study design is missing a conservative pathway. This is extremely disappointing, as conservative treatment in these fracture-types has shown similar results without relevant complication rates. The authors are encouraged to add a conservative / surgical pathway to enhance the relevance of the paper.

We thank the reviewer for the suggestions. We introduced a control group (Group C), made up of patients with the same characteristics of the study groups, but treated conservatively. Consequently, we changed the following parts in the manuscript:

Method in abstract: A conservative treatment group, as control, was finally introduced.

Results in abstract: A better clinical and psychological outcome emerged in control group at T2 comparing with surgical group (DASH score $^{1}P=0.014$, Constant score $^{m}P<0.001$, GAD-7 $^{n}P=0.002$ and CSS $^{o}P=0.001$).

Introduction in main text: In the remaining 20% of cases, the surgical strategy probably is the first option, although conservative treatment is chosen by some surgeons [9].

Material and methods in main text: We introduced a control group (Group C), made up of patients with the same characteristics of the study groups, but treated conservatively.

Results in main text: For the group C, the mean values are reported separately (TABLE 10). A second univariable analysis (TABLE 12) between conservative and surgical treatment (using values of the two treatments) was made to enhance the relevance of the study. We reported no statistical difference at T0 regarding clinical and psychological outcomes. On the contrary, conservative treatment has shown to have better clinical and psychological outcomes, although not statistically significant at T1 and statistically significant at T2.

Discussion in main text: Moreover, the comparison between the surgical (group A and B) and the conservative group (group C) revealed better clinical and functional results at 12 months for the group C. In fact, with mean values of 3.1 and 3.0 for the GAD-7 and CSS scales respectively, the group C showed less anxiety and fear at T2 notwithstanding at 12 months no statistically differences were found. These results are consistent with a previous study that underlined the importance of conservative treatment which remains a valid option mainly in the three-part proximal humeral fractures in selected cases with good functional results and low complications [9].

Conclusion in main text: For this reason, we suggest to evaluate before surgical choice not only anatomical parameters but also patient psychological profile, always evaluating the possibility of a hypothetical conservative treatment.

We have also introduced tables 10 and 12. See file 65833-Tables.

Even more important is the bias deducing from the study design chosen, as it remains completely unclear, which patients were anxious about surgical treatment itself. It could be a possible result, that patients undergoing surgical treatment under reserve turn out to extremely anxious about losing their own humeral head, while patients open for surgery prefer a definitive solution with an arthroplasty.
We revised the discussion and conclusion according to the suggestion: We revealed a residual fear during shoulder movement in patients underwent primary reverse shoulder arthroplasty, unlike the group of patients which have done osteosynthesis, who seemed more confident and secure in shoulder movements. The Authors linked these results for group B to the anxiety about loosening of humeral head. In fact, the patients underwent osteosynthesis, showed better results in terms of anxiety due to the idea to preserve their humeral head. The perception of own humeral head could play a role in the genesis of anxiety. Moreover, the comparison between the surgical (group A and B) and the conservative group (group C) revealed better clinical and functional results at 12 months for the group C. In fact, with mean values of 3.1 and 3.0 for the GAD-7 and CSS scales respectively, the group C showed less anxiety and fear at T2 notwithstanding at 12 months no statistically differences were found. These results are consistent with a previous study that underlined the importance of conservative treatment which remains a valid option mainly in the three-part proximal humeral fractures in selected cases with good functional results and low complications [9].

This study has some limitations: the number of participants is limited to 63; the maximum follow-up achieved was 12 months; the device for open reduction and internal fixation used was a single type of angle stable plate with specific surgical technique.

Science editor:
1 Scientific quality: The manuscript describes a prospective study of the angle stable plate versus reverse shoulder arthroplasty for proximal humeral fractures. The topic is within the scope of the WJO. (1) Classification: Grade C; (2) Summary of the Peer-Review Report: The results given with excellent statistics come with no surprise. They reflect the experiences in treating these fractures. The questions raised by the reviewers should be answered; (3) Format: There are 10 tables; (4) References: A total of 33 references are cited, including 1 reference published in the last 3 years; (5) Self-cited references: There is no self-cited reference; and (6) References recommendations: The authors have the right to refuse to cite improper references recommended by the peer reviewer(s), especially references published by the peer reviewer(s) him/herself (themselves). If the authors find the peer reviewer(s) request for the authors to cite improper references published by him/herself (themselves), please send the peer reviewer’s ID number to editorialoffice@wjgnet.com. The Editorial Office will close and remove the peer reviewer from the F6Publishing system immediately. 2 Language evaluation: Classification: Grade B. 3 Academic norms and rules: The authors provided the Biostatistics Review Certificate, the Institutional Review Board Approval Form, and the written informed consent. No academic misconduct was found in the Bing search. 4 Supplementary comments: This is an invited manuscript. No financial support was obtained for the study. The topic has not previously been published in the WJO. 5 Issues raised: (1) The title is too long, and it should be no more than 18 words;

We thank the science editor. We modified title: Plate versus reverse shoulder arthroplasty for proximal humeral fractures: the psychological health influence the choice of device?

(2) PMID and DOI numbers are missing in the reference list. Please provide the PubMed numbers and DOI citation numbers to the reference list and list all authors of the references. Please revise throughout.
We followed the advice of the science editor and we have added PMID and DOI in the reference list:

References


We have added the “Article Highlights” section at the end of the main text.

**Article Highlights**

**Research background**
Patient affected by fractures is evaluated only from a surgical point of view. Psychological aspect is very often underestimated.

**Research motivation**
More studies are needed in literature, to evaluate before surgical choice not only anatomical parameters but also patient psychological profile.

**Research objectives**
The aim of our study was to compare open reduction and internal fixation with joint replacement in terms of clinical and psychological outcomes of three- and four- part proximal humeral fractures in patients older than 65 years evaluating whether postoperative psychological symptoms may influence the clinical results after surgery.

**Research methods**
An observational prospective single-center study with 12 months follow-up was performed with a sequential recruitment of subjects affected by proximal humeral fractures treated with open reduction and internal fixation and joint replacement. A conservative treatment group, as control, was introduced.

**Research results**
Patients underwent primary reverse shoulder arthroplasty showed in each postoperative follow-ups a generalized anxiety disorder and a greater irritability then patients underwent osteosynthesis.

**Research conclusions**
Patient psychological profile should be evaluated by the surgeon before surgery for the choice of surgical devices.

**Research perspectives**
Future investigations are needed to confirm the role of the psychological profile in the field of orthopedic surgical treatment. In addition, long-term analysis needs to clarify if differences in outcomes are really related to the patient's mental state.
Company editor-in-chief:
I have reviewed the Peer-Review Report, the full text of the manuscript, and the relevant ethics documents, all of which have met the basic publishing requirements of the World Journal of Orthopedics, and the manuscript is conditionally accepted. I have sent the manuscript to the author(s) for its revision according to the Peer-Review Report, Editorial Office’s comments and the Criteria for Manuscript Revision by Authors. Before final acceptance, the author(s) must add a figure to the manuscript.

We prepared and arranged the figures using PowerPoint program in file 65833-Figure.ppt.

9) Tables: Please verify the abbreviations used in tables and define them (separated by semicolons) at the end of the figure legend or table; for example, BMI: Body mass index; CT: Computed tomography.

We modified abbreviations, see file 65833-Tables.

We thank you for giving us this opportunity. We hope to continue a collaboration with your Journal.