

## Peer Review File

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### Reviewer A

Excellent material, bringing important topics to be discussed by the scientific community of great relevance

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### Reviewer B

This is a well written paper which I enjoyed reading. It is a combination of a retrospective institutional case cohort review, and a database literature review.

Although it does not present new findings, it does add to the overall amount of data available on TMJ replacement for TMJ ankylosis. Given that national TMJ replacement databases are in short supply, this is then helpful.

Line 49: please give examples of other interpositional materials, not just temporalis flap. The section on literature review has a number of missing brackets - please correct.

The section on case series uses % for small case numbers - is this justified? An example is 2/10 male (20%). Also the text seems to swap between % before or after the actual number.

Line 174: choose should be chose. I am happy with the references and Figures.

Finally I think that a little more discussion on long term facial nerve injury would be useful. The authors note that their own such case had had multiple prior TMJ surgeries, and this is a known risk factor for this complication. Perhaps a few relevant references could be given to assist the interested reader on this topic?

We added two more examples of interpositional materials as requested.

For the literature review section, our purpose in not repeatedly citing groups of papers included in the first citation (“a total of 30 studies...”) was to cite the studies initially and refer to Table 1, where the reader may look over which studies included which studies reported different adverse events, used which type of prosthesis, etc. There is a possibility we may have misunderstood the comment from the reviewer regarding missing brackets.

Regarding the use of percentages, we just reported the statistics as they are laid out in Table 2, regardless of the total number. We have corrected the formatting as requested. Corrected to “chose” in line 174.

We added to the discussion more points about facial nerve weakness, including probably the best study on outcomes in TJR patients as well as results of facial nerve injury (lines 141-147).

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### Reviewer C

This paper reviews articles related to TMJ total joint prosthesis (TJP) reconstruction of patients with TMJ ankylosis as well as reviews a series of patients from the authors’

institution. In the title, the authors may want to remove the word “scoping” and just state “... a case series and review of the literature.”

Abstract, line 18 and throughout the paper, eliminate the use of self-describing pronouns. For instance under Methods, it would be better to state as follows “A comprehensive search was conducted of several databases ...”

Line 19, “Only human studies were included. Evaluations included the type of study, outcomes relative to function, and surgical complications. In addition, the authors conducted a retrospective review of Mayo Clinic patients that received alloplastic TMJ total joint prostheses (TJP) for ankylosis to determine outcomes compared to the published literature.”

Line 27, “The authors’ case series ...”

Under Conclusions, line 31, the authors may prefer to say “Alloplastic TMJ TJP reconstruction with FDA approved devices is a safe and predictable treatment for patients with TMJ ankylosis, with a low risk of re-ankylosis.” Eliminate the second sentence.

Introduction. This is reasonably well written. Again, throughout the paper try to eliminate the self-describing pronouns such as we, I, our, etc. Line 40, it would be better to state “TMJ ankylosis is usually referred to as either bony or fibrous.”

Instead of stating “total joint replacement” or “total joint prosthesis,” in the beginning of the introduction, define the total joint prostheses as TJP or TJR or some designation instead of writing the words out every time in the body of the paper.

Minimize use of transitional verbiage that is used in this paper sometimes in several sentences in a row.

Line 52, you can use “TMJ” as the definition has already been stated. Throughout the paper use the abbreviations of these types of common terms.

Line 56, the authors may want to state “The primary purpose of this article ...” Line 58, state “This article is presented in accordance with the PRISMA-ScR reporting checklist.” The authors can then add this sentence “The secondary purpose was to evaluate the outcomes for patients with TMJ ankylosis treated with TJP at the authors’ institution (Mayo Clinic). The hypothesis of this study is; the treatment of TMJ ankylosis with TJP is an effective means for eliminating the ankylosis and improving function.”

Lines 63 and 64, provide the approval number for the IRB if available.

Methods and Materials. This is clearly presented.

Results. Literature Review is fairly well described. Line 104, the punctuation required "... congenital, prior TMJ surgeries, radiation, ..."

Line 120, the authors may prefer to say "Review of the Mayo Clinic patient records ..."  
How many of these studies presented, including the authors' study, included fat grafts around the prostheses at the time of implantation? References 5 and 27 indicate the advantages of using autogenous fat grafts around the TMJ total joint prostheses to preventing re-ankylosis. Did the Mayo Clinic study include an assessment relative to pain? If so, include data.

Discussion. Line 133, the authors may want to state "... the safety and efficacy of this treatment in the Mayo Clinic patient population. The authors hypothesized ..."  
This hypothesis verbiage should be placed at the end of the introduction where I have already made a suggestion to include it there.

Line 145, the authors may want to state "In the Mayo Clinic case series, ..."

Line 150, "There are previous literature reviews regarding TMJ ankylosis treatment."

Line 155, better wording would be "This is not comparable to the type of arthroplasty presented in this paper."

Line 158, it may be better to say "It seems unfair to conclude that total joint prostheses are not justified in their use ..."  
Line 159, "... FDA approved alloplastic TJP currently recommended for patients."

Lines 163 through 165, there are three sentences in a row that use transitional wording (unfortunately, interestingly, in addition) that could be eliminated.

Line 165, the authors may want to say "The Saeed et.al. study used Christensen TJP that have since been removed from the market by the FDA related to prosthetic failures and complications."

Line 167, the authors may want to say "... but also FDA approved TJP such as Biomet and TMJ Concepts devices."  
Line 167, "... different from this study across multiple papers and the Mayo Clinic experience, ..."  
In this same paragraph, there is over-utilization of transitional words (however, overall).

Line 183, the authors may want to state "As noted in Table 1, some of the studies appear to contain overlapping patient populations and data so the reader must be aware that all patients reported are not unique in all studies."

Line 193, "... in comparison and presentation, this data was not analyzed. The discerning and interested reader is encouraged to review these publications ..."

Line 196, the authors may want to state “Although MIO and complications are important outcomes to measure, many studies do not report outcomes related to jaw function, pain and impact on social, occupational and recreational activities. This is a general weakness ...”

Line 199, “The authors do not feel that missing this data ...” At least one of the references #5 does address jaw function, pain, diet, disability, and improvement in treating patients with TMJ ankylosis using TMJ Concepts and fat grafts. The authors may want to mention those outcomes and any other studies that may have presented similar data, for completeness.

Conclusion. The authors may want to state “The authors’ case series as well as the published literature support the use of FDA approved TJP that consistently provide improved range of motion and function with a low rate of adverse events, including reankylosis.” The last sentence could be eliminated.

References appear appropriate.

Figure 3 could be eliminated since it really does not add anything significant to the article.

Table 1 appears to be appropriately put together. Just one comment under the Wolford et al 2/16 article, if you read the article, it states that the re-ankylosis is not associated with the TMJ TJP, but occurred from heterotopic bone that developed around the coronoid process and did not involve the TMJ TJP, treated with removal of the coronoid and heterotopic bone with a fat graft placed. Therefore, if you are looking at just the TMJ TJP, there was no re-ankylosis.

Table 2, this should be labeled as the “Mayo Clinic Study” or some other descriptive terminology so it is identified as the authors’ study and not confused with any of the previous publications mentioned in Table 1. Table 2 needs to describe a few more of the abbreviations used that are not included at the end of that table such as N=number; mm=millimeters; VS=versus.

Overall, this is a nicely done paper reviewing the literature available on TMJ ankylosis treated with TJP. Some of the suggestions made in this review are more editorial in nature but should strengthen this paper. If the authors can address these suggestions, it will make this a stronger paper for publication consideration.

We thank you for your thorough review and multiple suggestions to improve clarity and improve this manuscript.

The use of “scoping” in the title refers to the type of review this is, with specific

requirements that are involved in a scoping review. Thus, it is important to specify the type of review performed in the title.

Line 18 (and through the paper): Select areas of active vs passive voice were evaluated and changed based on clarity, brevity, and desired emphasis.

Line 19: modified according to requests.

Line 27: modified as requested

Line 31: modified as requested

Line 40: modified as requested

We minimized “temporomandibular joint” by abbreviating to TMJ and using TJR throughout the manuscript.

Many transition words/phrases were removed or modified, ensuring clarity and benefit for flow if retained per the authors’ style preferences.

Secondary purpose and hypothesis relocated and described as suggested.

IRB number added as requested

Line 108: added a comma

Line 125: changed wording as described.

Line 129: Added that we used fat grafting. Also added some discussion of fat grafting to the discussion section.

While we do have pain-related data available, the majority of our ankylosis patients have minimal pain on presentation, and this was not specified as one of the study outcomes of interest, so we chose not to include this data for our case series.

Discussion items addressed according to suggestions.

We felt like figure 3 shows clinical/surgical correlation to the radiographic images in figure 2, and would be of interest to readers who are not commonly performing this procedure or encountering this pathology. We are hopeful to retain the image if possible.

The reankylosis described in the Wolford 2/16 paper was addressed in a clarifying footnote in Table 1.

For Table 2, although this is addressed in the body of the manuscript, we labeled it the Mayo Clinic Cohort. We did not feel “n” required any definition. We changed VS to “or,” and addressed millimeters in the MIO definition.