Author’s response to reviews

Title: Comparison of functional metacarpal splint and ulnar gutter splint in the treatment of fifth metacarpal neck fractures: A prospective comparative study

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Author’s response to reviews:

Reviewer 1:
* Explain the allocation process (lines 112-115.) Was this quasi-randomisation? Why not simply randomize.
A more detailed explanation was added to the Method section at Line 113-117. The added sentences are:

“The treatment plan was applied to patients in a consecutive manner based on referral time (quasi-randomisation). The orthopedist making the intervention at the E.R. checked the last treatment performed and applied the other choice of treatment. The first patient included for the study was applied UGS and the next patient was applied FMS. The inclusion of the patients continued with this sequence until the end of the study period.”

-Yes, it was quasi-randomisation (explanation added to Line 114). That is true that it was one of the limitations in our study as we mentioned in the limitations section. In the literature, there are lots of retrospective studies about metacarpal fractures, but prospective or randomized studies are few. So the prospective evidence is also lacking. In addition, some studies in the literature also pointed out that
non-randomized prospective controlled studies might provide more valuable results compared to low quality randomized controlled studies which are mostly inconclusive (1). In the beginning of this study, we decided to choose a prospective non-randomized design, like some similar studies (2, 3, 4).


* Remove figure 5 which is superfluous
-Figure 5 was removed according to reviewer’s suggestion.

Reviewer 2:
Line 118. Please consider to explain how you decide the necessary case number of this study.
-We made a power analysis before the study. But we continued the study even after reaching necessary number of the patients, due to probable withdrawals and losses to follow-up. This explanation is added to the Method section at Line 112-113:
“The power analysis revealed that at least 14 subjects were needed in both groups for a power of 0.8 at a significance level of 0.05.”

Line 112 "The treatment plan was applied to patients in a consecutive manner based on referral time. "
In limitation section (Line 295), it was mentioned that this was not a randomized study, if so, could you please consider describing how to decide which procedure was applied for each patient more clearly.
-It was quasi-randomisation. A more detailed explanation was added to the Method section at Line 113-117. The added sentences are:
“The treatment plan was applied to patients in a consecutive manner based on referral time (quasi-randomisation). The orthopedist making the intervention at the E.R. checked the last treatment performed and applied the other choice of treatment. The first patient included for the study was applied UGS and the next patient was applied FMS. The inclusion of the patients continued with this sequence until the end of the study period.”

Line 175. This study included much less than 100 cases, therefore, please consider rounding off results with the percentage to the nearest whole number.
-The percentages were added to the results according to reviewer’s suggestion, both at Line 176 and Table 1.

Line 195 "c Post Hoc: Bonferroni testi"
It seems to be a typo. could you please correct it?
What was the level of significance for the post hoc test using Bonferroni test in this study?
-The typo was corrected.
Since 6 comparisons were made, the p values were multiplied by 6, instead of dividing the p value.
This explanation was added to Method section at Line 172: “\textit{P} values were multiplied by six for Bonferroni correction.”

Table 2, Table 3. For these analysis, not "Repeated Measures Test, but "\textit{two-way ANOVA} seems to be appropriate to avoid multiple comparisons.
-Statistical analysis was made again with \textit{two-way ANOVA} instead of Repeated measures test. The method section and tables were corrected. The significant values were also found significant by two-way ANOVA test.

Line 275-276. "Section 2 pertaining to athletes and Section 3 to performing artists"
-The original DASH comprises section 2 of work module, and section 3 of sports/performing arts module in accordance with The DASH and QuickDASH outcome measure user's manual, third edition. (Kennedy CA, Beaton DE, Solway S, McConnell S, Bombardier C. Toronto, Ontario: Institute for Work & Health, 2011). Which version of DASH did you use? Please consider to mention more in detail. Moreover, "Quick" should be accurately described in italic characters.
-You are right, that was a misquotation by us from a paper which also misquoted this explanation (1). The related sentence was corrected at Line 277-279 like this:
\begin{quote}
As a validated hand outcome measurement, \textit{QuickDASH} has been used to discern disabilities from musculoskeletal disorders of the upper limb and consists of three subscales including disability/symptom, and work and sports/performing arts(14,25,26).
\end{quote}

1. Hofmeister EP, Kim J, Shin AY. Comparison of 2 Methods of Immobilization of Fifth Metacarpal Neck Fractures: A Prospective Randomized Study. J Hand Surg Am. 2008;33(8):1362–8. We used the validated Turkish version of QuickDASH, this explanation was added to the text at Line 151-152;
“The validated Turkish version of the \textit{QuickDASH} questionnaire was used(15).”
Quick was changed as an italic word throughout the text.

Line 295. Maximum age included this study was 58 years old, so this study results cannot simply apply to elderly people. Please consider to include this point in the limitation section.
-This limitation was added to the text at Line 302-303 according to reviewer’s suggestion. Added sentence is;
“The study group didn’t include patients older than 58 years old, so it is not possible to generalize our results to elder population.”

Line 296. "Due to the great healing and functional capacity of 5th metacarpal neck fractures especially in the young population, 18 patients did not return for routine evaluations and were lost to follow-up." I think that sometimes patient tend to drop out from the study due to a bad result or a dissatisfaction.
-We agree that in some studies a bad result or a dissatisfaction is an important reason to drop out from the study. But in our patient group, all patients continued their 1st month follow-up and we didn’t detect any dissatisfaction with the treatment at 1st month follow-up. The excluded patients were mostly the ones who didn’t continue their 6th month follow-up. Therefore, we think dissatisfaction or a bad result was not a major factor caused the patients to discontinue their follow-ups in our study group. But we also revised our sentence according to reviewer’s suggestion. In the revised sentence; great healing and functional capacity was pointed out as “the most probable reason” rather than “the only reason”.
The revised sentence at Line 298-300 is;
“18 patients (31%) did not return for routine evaluations and were lost to follow-up. We think the most probable reason behind this high rate is the great healing and functional capacity of 5th metacarpal neck fractures especially in younger population.”