Reviewer’s report

Title: Can Body Mass Index influence the fracture zone in the fifth metatarsal base? A retrospective review

Version: 0 Date: 15 Oct 2019

Reviewer: Tom Walsh

Reviewer's report:

Thank you for the opportunity to review this manuscript. I have a few points I think the authors should consider. In particular some of the reporting could be improved, but I like the field of inquiry and I think there is merit in the manuscript.

Title: The relationship between Body Mass Index and the localization of fifth metatarsal base fracture: an epidemiological study

Major

* I'm not sure this really is classed as an epidemiological study. Do you consider this necessary in the title?

* Could Table 1 include the statistical test and result used to compare between groups?

* The analysis involves only univariable analyses - did you consider a regression to adjust for BMI, age and gender in the one model. This would make the results more robust, despite there being non-significant relationships with the sex and age variables in the chi-squared and the ANOVA.

* I have some reservations about one of your inclusion criteria - the twisting-type injury. In a retrospective review, you are highly dependent on the clinical notes, and indeed on the patient recalling what happened. Stress fractures do not necessary have a defining incident, so it is possible that you missed a number of stress fracture? Or were you only wanting fractures that involve an injury?

* Another challenge with this type of design is the note taking regarding height and weight. Given this is one of your primary outcomes, are you confident that these data were collected in a standardized manner? Is it self-report or is there a protocol used at your hospital?
I'd suggest removing the word 'experimental' as this may inadvertently mislead the reader that this was an experiment.

Suggest change 'incidence' to 'prevalence'.

I found Figure 2 confusing. It appears that zone 2 makes up 65-70% of people who are underweight - this doesn't match the under the graph. Can these data be checked?

Minor

The dates used in the abstract and the methods are not the same - can you please look into this? Which is correct?

Suggest P values to 3 decimal places, and use a period rather than a comma.

It would be clearer to use mean (SD) in the abstract and throughout, or alternatively mean +/- SD, but you have a mixture of both. Can this be made consistent?

Some of the formatting in the abstract needs correcting, there are large gaps between the parentheses, and the kg/m² should have the '2' in superscript.

I would suggest moving the URL for R into the reference list.

Line 57: Lawrence and Botte needs a citation

Line 61: Kane et al. needs a citation

I would suggest you reconsider the use of 'causative' from the manuscript. Given the study type, a low level of evidence, the suggestion of any causative mechanisms may need to be tempered.

Discretionary

Suggest you consider changing 'have been' which appears through the abstract and across the paper to, 'were'.

Suggest remove any initialisms from the abstract where they are not used more than once.
**Level of interest**
Please indicate how interesting you found the manuscript:

An article whose findings are important to those with closely related research interests

**Quality of written English**
Please indicate the quality of language in the manuscript:

Acceptable

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