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Letter to the editor regarding “effect of buttress plate in herscovici type D vertical medial malleolar fractures and peripheral fractures: a retrospective comparative cohort study”

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Abstract

In this letter to the editor, we highlight several concerns that may affect the validity of the study results by Luo et al. entitled “Effect of Buttress plate in Herscovici type D vertical medial malleolar fractures and peripheral fractures: a retrospective comparative cohort study.” First, we point out a methodological flaw in the selection of treatment groups, as insufficient standardization of criteria potentially led to selection bias. Second, we note that the angle of the screws in vertical fractures differed from the standard recommended in the literature, which may affect the effectiveness of fixation. Studies in the literature have increased the validity of their comparisons by using more reliable screw alignment techniques. They also recommend plate fixation instead of screws for vertical fractures, supporting the idea that plates provide more stable fixation in these cases. The inappropriate placement of screws in the Luo et al. study may therefore bias the results in favor of plate fixation and reduce the validity of the comparison between treatment modalities.

Dear Editor;

We read with great interest the meta-analysis by Luo et al. [1]. Entitled “**Effect of buttress plate in Herscovici type D vertical medial malleolar fractures and peripheral fractures: a retrospective comparative cohort study**” We congratulate the authors for publishing their study in “*Journal of Orthopaedic Surgery and Research*”. However, after reviewing this article, several issues may impact the study conclusions.

First, we would like to point out a methodological flaw in the selection of treatment groups. The criteria for assigning patients to specific treatment groups appear to lack sufficient standardization, which may have introduced selection bias. Without a clear and consistent protocol for treatment allocation, the comparability of the groups is potentially compromised, thus affecting the reliability of the outcomes.

Second, while screw fixation is presented as one of the treatment options for vertical fractures, the angulation of the screws relative to the fracture line differs from what is commonly recommended in the literature [2, 3].

In cases treated with buttress plates, both the buttress effect and the perpendicular positioning of screws relative to the fracture line are expected to provide superior

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fixation. Conversely, in patients treated with screw fixation alone, the fractures appear to lack adequate stabilization, as the screws are not optimally aligned with the fracture. This discrepancy between treatment methods inherently biases the results in favor of plate fixation, potentially skewing the study's conclusions.

In contrast, Wagner et al. [4]. compared plate and screw fixation and adapted cortical screws to align perpendicular to the fracture line, differing from the methodology in Luo et al.'s study. This adaptation provided a more reliable comparison of fixation methods, emphasizing the importance of proper screw alignment in achieving stable fixation. Luo et al.'s lack of consideration for screw orientation may have significantly influenced the outcomes, favoring plate fixation over screws.

Furthermore, Ebrahim et al. [5], as cited in the article, specifically recommend plate fixation for vertical fractures and advise against the use of screws in such cases. This aligns with the general understanding that vertical fractures require a fixation method that provides sufficient stability, which is more reliably achieved with plates due to their buttress effect and ability to maintain proper alignment. The inclusion of screw fixation as a treatment option in the current study without adapting their placement to the specific requirements of vertical fractures may have limited the validity of the comparisons drawn.

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Data availability

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Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

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