

Letter to the Editor

Perioperative effects of leukocyte- and platelet-rich fibrin in third molar surgery

I read with great interest the study by Ritto et al.¹ on the efficacy of leukocyte- and platelet-rich fibrin (L-PRF) for bone healing after the surgical removal of impacted third molars. I thank and congratulate the authors who pointed out in their concise and well-detailed report the many issues with this adjuvant aimed at accelerating the healing process. As the topic analysed in their study is of importance, I would like to add some comments about certain missing points in their detailed analysis.

As mentioned by Ritto et al.¹, the surgical removal of third molars is one of the most common routine surgeries in dental practice. A number of postsurgical sequelae, including pain, swelling, reduced mouth opening, and postsurgical bleeding, are the main issues following the surgical removal of a third molar^{2,3}, and the management of these symptomatic sequelae, inflammatory mediators, and pain represents the basis of successful postoperative care.

As suggested by Ritto et al.¹, the most remarkable finding of their study is that treatment with L-PRF improved bone density following third molar surgery, while there was no statistically significant difference related to pain or the soft tissue compared to the control group.

These conclusions are very important and could help clinicians in their clinical practice. Regarding soft and hard tissue postsurgical healing, did the authors also evaluate postoperative adverse events such as infections or abscesses during follow-up? More specifically, did the authors evaluate the risk of postsurgical

bleeding and alveolar osteitis at each follow-up session? Was the 'subjective' Landry index evaluated by different clinicians and at longer follow-ups of much more than 7 days?

In this regard, it has previously been shown that L-PRF is a rich source of growth factors, such as platelet-derived growth factor and vascular endothelial growth factor⁴, with important properties for healing such as angiogenesis, immune control, and wound protection, which are most important in patients, particularly those with bleeding disorders⁵. The slow release of these biochemical components may have a synergistic effect on the healing process in the long term⁶.

Alveolar osteitis and associated postsurgical bleeding have been reported, such as "post-operative pain severely increasing after the extraction, accompanied by a disintegrated blood clot in the alveolar socket"⁷. I believe that when selecting L-PRF after dental surgery, all effects should be considered, especially in the long term, and these should be evaluated objectively using an appropriate index. Therefore, in my opinion, further multicentre investigations with larger samples are needed to better understand the role of L-PRF in order to provide more conclusive results.

For these reasons, I compliment the authors for conducting this important study that raises interesting questions to discuss and suggests these different and alternative adjuvants for third molar surgery. Nevertheless, a more comprehensive and detailed approach could also stimulate other clinicians and researchers to provide further methods, with the aim of opening up future directions for research into the role of L-PRF in the postsurgical management of third molar surgery.

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Competing interests

The author declares that he has no conflict of interest or other benefits in the manuscript.

Ethical approval

Not required.

Patient consent

Not required.

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Re: Randomized double-blind clinical trial evaluation of bone healing after third molar surgery with the use of leukocyte- and platelet-rich fibrin

The authors appreciate the comments concerning our study¹, which will help to clarify some important points. The combination of cone beam computed tomography and histomorphometric analysis is certainly the gold standard to measure the real effect of leukocyte- and platelet-rich fibrin (L-PRF) on bone healing, but this is not feasible after third molar extractions for ethical reasons.

We did look for adverse events, and no group presented signs of postoperative bleeding, infection, or abscesses. Furthermore, L-PRF appears to improve the healing of infected wounds and prevent the development of postoperative infections².

No extraction site developed alveolar osteitis. In accordance, a recent systematic review including only randomized clinical trials showed that L-PRF can reduce the incidence of alveolar osteitis by 62% when compared to regular clot formation³.

Soft tissue healing was evaluated by periodontal probing distal to the lower second molar, performed before surgery and at 3 months after the procedure. It was also measured using the Landry index at 7 days after surgery. Both parameters were assessed by a single clinician, who was blinded to which side was the control group and which was the test group; no statistically significant difference was found between the groups.

The small sample size of 17 patients is a limitation when determining statistical

differences, but after comparing our results with those of other studies^{3,4}, we believe that the use of L-PRF in the extraction socket is able to reduce the side-effects and accelerate the healing process after third molar surgery^{3,4}. Therefore, we agree with Isola that further multi-center investigations with larger sample sizes and standardization of evaluation methods are necessary, as we stated in our article.

Competing interests

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Statement to confirm

All authors have viewed and agreed to the submission

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