Article type: Perspective
Home Page URL: https://www.alliedacademies.org/trauma-and-critical-care/

Efficacy of Platelet-Rich Fibrin in Enhancing Postoperative Healing in Impacted Mandibular Third Molar Surgery.

Michael R. Sandoval *

Department of Oral and Maxillofacial Surgery, Faculty of Dental Sciences, University of Granada, Spain

***Correspondence to:** Michael R. Sandoval, Department of Oral and Maxillofacial Surgery, Faculty of Dental Sciences, University of Granada, Spain. Email: m.sandoval@dentalsciences.uni

Received: *27-May-2025, Manuscript No. AAOMT-25-169563;* ***Editor assigned:*** *01-Jun-2025, PreQC No. AAOMT-25-169563 (PQ);* ***Reviewed:*** *15- Jun-2025, QC No. AAOMT-25-169563;* ***Revised:*** *22- Jun-2025, Manuscript No. AAOMT-25-169563 (R);* ***Published:*** *29- Jun-2025, DOI:10.35841/AAOMT-8.1.183*

Introduction

Impacted mandibular third molar surgery is one of the most frequently performed oral surgical procedures, often associated with postoperative complications such as pain, swelling, and delayed wound healing. Traditional management strategies have aimed to minimize these effects through pharmacological intervention and surgical technique refinement. In recent years, autologous platelet concentrates, particularly Platelet-Rich Fibrin (PRF), have emerged as promising adjuncts for enhancing postoperative recovery. PRF is a second-generation platelet concentrate that contains a high concentration of platelets, growth factors, and cytokines embedded within a fibrin matrix. Its preparation is simple, cost-effective, and does not require anticoagulants, making it a convenient choice for clinical use [1, 2, 3, 4, 5].

The biological mechanism of PRF involves sustained release of growth factors such as platelet-derived growth factor (PDGF), transforming growth factor-beta (TGF-β), and vascular endothelial growth factor (VEGF), which promote angiogenesis, tissue regeneration, and inflammatory modulation. By applying PRF directly into the extraction socket, clinicians aim to accelerate soft tissue healing, enhance bone regeneration, and reduce postoperative discomfort. Studies have reported encouraging outcomes, yet some variability in results highlights the need for further research. Understanding the efficacy of PRF in impacted mandibular third molar surgery could contribute significantly to refining postoperative care protocols and improving patient quality of life.

Conclusion

Platelet-Rich Fibrin represents a promising biological adjunct for enhancing postoperative healing following impacted mandibular third molar extraction. Its autologous nature, growth factor release profile, and ease of preparation make it a viable option for routine clinical application. While existing literature generally supports its effectiveness in reducing postoperative pain and swelling and promoting faster wound closure, variability in preparation protocols and patient-specific factors may influence outcomes. Large-scale, standardized clinical trials are necessary to establish definitive guidelines for PRF usage in oral surgery. Integrating PRF into surgical practice, with evidence-based protocols, could represent a significant advancement in oral and maxillofacial surgical care.

References

1. Choukroun, J., Adda, F., Schoeffler, C., & Vervelle, A. (2001). Une opportunité en paro-implantologie: le PRF. *Implantodontie*, 42(5), 55–62.
2. Dohan Ehrenfest, D. M., Rasmusson, L., & Albrektsson, T. (2009). Classification of platelet concentrates: From pure platelet-rich plasma (P-PRP) to leucocyte- and platelet-rich fibrin (L-PRF). *Trends in Biotechnology*, 27(3), 158–167.
3. Ozgul, O., Senses, F., Er, N., Tekin, U., & Ercan, E. (2015). Evaluation of the effect

Citation: Sandoval M R. Efficacy of Platelet-Rich Fibrin in Enhancing Postoperative Healing in Impacted Mandibular Third Molar Surgery. *J Oral Med Surg*. 2025; 8(1):183

of platelet-rich fibrin on postextraction healing of impacted mandibular third molars. *Journal of Oral and Maxillofacial Surgery*, 73(6), 1121–1126.

4. Simonpieri, A., Del Corso, M., Sammartino, G., & Dohan Ehrenfest, D. M. (2009). The relevance of Choukroun's platelet-rich fibrin and metronidazole during complex maxillary rehabilitations using bone allograft. Part I: A new grafting protocol. *Implant Dentistry*, 18(2), 102–111.
5. Toffler, M. (2012). Guided bone regeneration (GBR) using cortical bone pins in combination with platelet-rich fibrin (PRF). *Implant Dentistry*, 21(3), 213–220.

Citation: Sandoval M R. Efficacy of Platelet-Rich Fibrin in Enhancing Postoperative Healing in Impacted Mandibular Third Molar Surgery. *J Oral Med Surg*. 2025; 8(1):183