UNIVERSITAS
GADJAH MADA
PERBANDINGAN REGENERASI PAPILA INTERDENTAL PASCAINJEKSI PLATELET-RICH FIBRIN DAN ASAM HIALURONAT
PADA TIKUS MODEL OPEN GINGIVAL EMBRASURE
Rezmelia Sari, Prof. drg. Suryono, S.H., M.M., Ph.D; Dr. dr. Usi Sukorini M.Kes., Sp.P.K(K); Prof. drg. Heni Susilowat
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Abad, C.E., Sanz-Sanchez, I., Serrano, V., Sanz Esporrin, J., Sanz-Martin, I., Sanz , M. 2023. Efficacy of the Application of Leukocyte and Platelet-Rich Fibrin (L-PRF) On Alveolar Ridge Preservation. A Randomized Controlled Clinical Trial. *Clin Implant Dent Relat Res*. 25(3):592-604.

Abirami, T., Subramanian, S., Prakash, P.S.G., Victor, D.J., Devapriya, A.M. 2019. Comparison of Connective Tissue Graft and Platelet Rich Fibrin as Matrices in A Novel Papillary Augmentation Access: A Randomized Controlled Clinical Trial. *Eur J Dent*.13:607-12.

Ahila, E., Jannani, M., Vineela, K.R., Saravanakumar, R. 2015. Papilla Augmentation Using Platelet Rich Fibrin – A Case Report. *JSD.*15(5):60-4.

Ahila, E., Saravana, K.R., Reddy V., Pratebha, B., Jananni, M., Priyadharshini, V. 2018. Augmentation of Interdental Papilla with Platelet-Rich Fibrin. *Contemp Clin Dent*. 9(2):213.

AlAhmari, F. 2018. Reconstruction of Lost Interdental Papilla: A Review of Nonsurgical Approaches. *IOSR-JDMS*. 17(2): 59 – 65.

Almeida, R.C., Soares, R., dan Granja, P.L. 2017. Fibroblast as Maestros Orchestrating Tissue Regeneration. *J Tissue Eng Regen Med*. 12(1):240-251.

Alsharif S.B., Aljahdali, B. 2024. The Use of Hyaluronic Acid Injection for Treatment of Black Triangle and Reconstruction of Lost Interdental Papilla in Anterior Teeth: A Systematic Review. *Acta Odontol Scand*. 83:371-391.

Andrea, P., Lorenzo, M., Gagliano, N., Elena, C., D MedeirosAna, C., Laura, C., Ezio, C., Mariana, A., Rojas. 2023. Clinical, Histological, Immunohistochemical and Biomolecular Analysis of Hyaluronic Acid in Early Wound Healing of Human Gingival Tissues: A Randomized, Split-Mouth Trial. *J Periodontol*. 94(7):868-881.

Anitua, E., Andia,. I, Ardanza, B., Nurden, P., Nurden, A.T. 2004. Autologous Platelets as A Source of Proteins for Healing and Tissue Regeneration. *Thromb Haemost*. 91(1):4-15.

Aspalli, S., Nagappa, G., Jain, A. 2015. Platelet-Rich Fibrin: A Panacea for Lost Interdental Papilla. *J Dent Specialities.* 3(3):1-3.

Awartani, F.A., Tatakis, D.N. 2015. Interdental Papilla Loss: Treatment By Hyaluronic Acid Gel Injection: A Case Series. *Clin Oral Invest*. 20(7):1775-1780.

UNIVERSITAS
GADJAH MADA
**PERBANDINGAN REGENERASI PAPILA INTERDENTAL PASCAINJEKSI PLATELET-RICH FIBRIN DAN ASAM HIALURONAT
PADA TIKUS MODEL OPEN GINGIVAL EMBRASURE**
Rezmelia Sari, Prof. drg. Suryono, S.H., M.M., Ph.D; Dr. dr. Usi Sukorini M.Kes., Sp.P.K(K); Prof. drg. Heni Susilowat
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Barakat, S.O., Tawfik, O.K., Kholy, S.E., El Nahass, H. 2024. Evaluation of Advanced Platelet-Rich Fibrin Compared to Subepithelial Connective Tissue Graft in The Surgical Management of Interdental Papilla Recession: A Randomized Controlled Trial. *Clin Oral Investig.* 28:87

Bathla, S. 2011. Periodontics Revisited. Jaypee Brothers Medical Publisher. India

Bertl, K., Gotfredsen, K., Jensen, S.S., Bruckmann, C., Stavropoulos, A. 2017. Adverse Reaction After Hyaluronan Injection For Minimally Invasive Papilla Volume Augmentation. A Report on Two Cases. *Clin Oral Implants Res*. 28(7):871-876.

Botelho, J., Machado, V., Hussain, S., Zehra, S., Proença, L., Orlandi, M., D'Aiuto, F. 2021. Periodontitis And Circulating Blood Cell Profiles: A Systematic Review and Meta-analysis. *Exp. Hematol*. 93: 1-13.

Boras, E., Mark S., William S.G., Lawrence A., Potempa Sabine Matou-Nasri. 2017. Common Angiogenic Signalling Pathways Induced by Monomeric C - Reactive Protein And FGF-2 Through MAPK And PI3K. *Eur J of Exp Biol* .7:18.

Castro, A.B., Cortellini, S., Temmerman, A., Li, X., Pinto, N., Teughels, W., Quirynen M. 2019. Characterization of The Leukocyte- and Platelet-Rich Fibrin Block: Release of Growth Factors, Cellular Content, And Structure. *Int J Oral Maxillofac Implants*. 34(4):855-864.

Chakrabarti, P., Ghosh, S. 2014. A Comparative Study of The Histology and Microanatomy of The Stomach in Mystus Vittatus (Bloch), Liza Parsia (Hamilton) and Oreochromis Mossambicus (Peters). *JMAU*. 2(4):245.

Chandran, P., Sivadas, A. 2014. Platelet-Rich Fibrin: Its Role In Periodontal Regeneration. *Saudi J Dent Res*. 5:117-22

Chang, J., Blanchard, S.B., Windsor, L.J., Gregory, R.L., Hamada, Y. 2020. Levels of Growth Factors From Platelet-Rich Fibrin From Chronic Periodontitis Versus Periodontally Healthy Subjects: A Pilot Study. *Clin Oral Investig*. 24(2):823-832.

Chen, X.J., Shen, Y.S., He, M.C. 2019. Polydatin Promotes the Osteogenetic Differentiation of Human Bone Mesenchymal Stem Cells by Activating BMP2-Wnt/Catenin Signalling Pathway. *Biomed Pharmacother*. 112:108746.

UNIVERSITAS
GADJAH MADA
**PERBANDINGAN REGENERASI PAPILA INTERDENTAL PASCAINJEKSI PLATELET-RICH FIBRIN DAN ASAM HIALURONAT
PADA TIKUS MODEL OPEN GINGIVAL EMBRASURE**
Rezmelia Sari, Prof. drg. Suryono, S.H., M.M., Ph.D; Dr. dr. Usi Sukorini M.Kes., Sp.P.K(K); Prof. drg. Heni Susilowat
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Chen, M., Liao, Y., Chan, C., Ku, Y., Pan, W., Tu, Y. 2010. Factors Influencing the Presence of Interproximal Dental Papillae Between Maxillary Anterior Teeth. *J Periodontol*. 81(2):318-324.

Chen, P.O., Chuang, Y., Huang, C., Lu, H. 2023. Expression of Epithelial-Mesenchymal Transition-Associated Proteins and Proliferating Cell Nuclear Antigen in Dihy-Dropyridine-Induced Gingival Overgrowth Fibroblast: A Preliminary Study. *JDS*.18(2):551-559.

Choukron, J., Diss, A., Simonperi, A., Girard, M.O., Schoeffler, Dohan, S.L., Dohan, A.J., Mouhyi, J., Dohan, D.M. 2006. *Platelet-rich fibrin* (PRF): A Second-Generation Platelet Concentrate. Part V: Histologic Evaluation of PRF Effects on Bone Allograft Maturation in Sinus Lift. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod*. 101(3):299 – 303.

Choukroun, J., Ghanaati, S. 2017. Reduction Of Relative Centrifugation Force Within Injectable Platelet-Rich-Fibrin (PRF) Concentrates Advances Patients' Own Inflammatory Cells, Platelets, and Growth Factors: The First Introduction to The Low-Speed Centrifugation Concept. *Eur. J. Trauma Emerg. Surg.* 44(1): 87-95.

Cialdai, F., Risaliti, C., Monici, M. 2022. Role Of Fibroblast in Wound Healing and Tissue *Remodelling* on Earth and In Space. *Front Bioeng Biotechnol*. 4(10):958381.

Ciccone, V., Zazzetta, M., Morbidelli, L. 2019. Comparison of The Effect of Two Hyaluronic Acid Preparations on Fibroblast and Endothelial Cell Functions Related to Angiogenesis. *Cells*. 8(12):1479.

Colangelo, M.T., Belletti, S., Govoni, P., Guizzardi, S., Galli, C. 2021. A Biomimetic Polynucleotides–Hyaluronic Acid Hydrogel Promotes Wound Healing in a Primary Gingival Fibroblast Model. *Appl Sci*. 11(10):4405.

Cortese, A., Pantaleo, G., Borri, A., Caggiano, M., Amato, M. 2016. Platelet-rich Fibrin (PRF) in Implant Dentistry in Combination with New Bone Regenerative Technique in Elderly Patients. *IJSCR. 28*:52 - 56.

Creager, M.D., Choi, J., Huctheson, J.D., dan Aikawa, E. 2017. Comprehensive Biomaterials II. 2nd ed. Elsevier. Boston. 97 - 401.

Crisci, A., Manfredi, S., Crisci, M. 2019. Fibrin Rich in Leukocyte-Platelets (L-PRF) and Injectable Fibrin Rich Platelets (I-PRF) Two Opportunity in Regenerative Surgery: Review of The Sciences and Literature. *IOSR J Dent Med Sci*. 18(4):66-79.

UNIVERSITAS
GADJAH MADA
**PERBANDINGAN REGENERASI PAPILA INTERDENTAL PASCAINJEKSI PLATELET-RICH FIBRIN DAN ASAM HIALURONAT
PADA TIKUS MODEL OPEN GINGIVAL EMBRASURE**
Rezmelia Sari, Prof. drg. Suryono, S.H., M.M., Ph.D; Dr. dr. Usi Sukorini M.Kes., Sp.P.K(K); Prof. drg. Heni Susilowat
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Dashore, S., Chouhan, K., Nanda, S., Sharma, A. 2021. Platelet-Rich Fibrin, Preparation and Use in Dermatology. *Indian Dermatol Online J*. 12(7): S55–S65.

de Almeida Malzoni, C.M., Pichotano, E.C., Freitas de Paula, L.G. 2023. Combination of Leukocyte and Platelet-Rich Fibrin and Demineralized Bovine Bone Graft Enhanced Bone Formation and Healing After Maxillary Sinus Augmentation: A Randomized Clinical Trial. *Clin Oral Investig*. 27(9):5485-5498.

Dohan, E.D.M., de Peppo, G.M., Doglioli, P., Sammartino, G. 2009. Slow Release of Growth Factors and Thrombospondin-1 In Choukroun's Platelet-Rich Fibrin (PRF): A Gold Standard to Achieve for All Surgical Platelet Concentrates Technologies. *Growth Factors*. Feb 27(1):63-9.

D Nafi'isah, B.C., Rosyida, N., Alhasyimi, A. 2019. Development Of Eggshell Membrane as An Alternative for Black Triangle Reconstruction Following Orthodontic Tooth Movement. *JPCS*. 1170. 012077

Dragonas, P., Katsaros, T., Avila-Ortiz, G., Chambrone, L., Schiavo, J. H., dan Palaiologou, A. 2019. Effects Of Leukocyte–Platelet-Rich Fibrin (L-PRF) In Different Intraoral Bone Grafting Procedures: A Systematic Review. *Inter J Oral and Maxillofac Surg*. 48(2):250–262.

Ejeil, A. L., Gaultier, F., Igondjo-Tchen, S., Senni, K., Pellat, B., Godeau, G. 2021. Age-Related Changes in Gingival Connective Tissue: A Comparative Study. *J Periodontal Res.* 56(3):487–496.

Engström, P.E., Shi, X.Q., Tronje, G., Larsson, A., Welander, U., Frithiof, L. 2001. The Effect of Hyaluronan on Bone and Soft Tissue and Immune Response in Wound Healing. *J Periodontol*. 72:1192200.

Feuillet, D., Keller, J.F., Agossa, K. 2018. Interproximal Tunneling with A Customized Connective Tissue Graft: A Microsurgical Technique for Interdental Papilla Reconstruction. *Int J Periodontics Restorative Dent*. 38:833-9i

Festing, M., Baumans, V., Combes R. 1998. Reducing The Use Of Laboratory Animals In Biomedical Research: Problems And Possible Solutions. *Altern Lab Anim*. 28(3):283-301.

Ficho, A. C., de Souza Faloni, A. P., Pennisi, P. R. C., Borges, L. G. F., de Macedo Bernadino, Í., Paranhos, L. R., Queiroz, T. P., dan Santos, P. L. 2021. Is Interdental Papilla Filling Using Hyaluronic Acid a Stable Approach to

UNIVERSITAS
GADJAH MADA
**PERBANDINGAN REGENERASI PAPILA INTERDENTAL PASCAINJEKSI PLATELET-RICH FIBRIN DAN ASAM HIALURONAT
PADA TIKUS MODEL OPEN GINGIVAL EMBRASURE**
Rezmelia Sari, Prof. drg. Suryono, S.H., M.M., Ph.D; Dr. dr. Usi Sukorini M.Kes., Sp.P.K(K); Prof. drg. Heni Susilowat
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Treat Black Triangles? A systematic review. *J Esthet Restor Dent*. 33(3): 458–465.

Fidyawati, D. dan Kemal, Y. 2015. Regenerasi Papila Interdental pada Penatalaksanaan Kasus Black Triangle. *Makassar Dent J*. 4(4):127–134.

Fujioka-Kobayashi, M., Katagiri, H., Kono, M. 2020. Improved Growth Factor Delivery And Cellular Activity Using Concentrated Platelet-Rich Fibrin (C-PRF) When Compared With Traditional Injectable (I-PRF) Protocols. *Clin Oral Investig*. 24(12):4373-4383.

Fujita, T., Yoshimoto, T., Kajiya, M. 2018. Regulation of Defensive Function On Gingival Epithelial Cells Can Prevent Periodontal Disease. *Jpn Dent Sci Rev*. 54(2):66-75.

Ghanaati, S., Al-Maawi, S., Schaffner, Y., Sader, R., Choukron, J., Nacopoulus, C. 2018. Application Of Liquid Platelet-Rich Fibrin for Treating Hyaluronic Acid-Related Complication: A Case Report With 2 Years of Follow-Up. *Int J Growth Factors Stem Cells*. 1:74 – 7.

Giannobile, W. V. 2008. Host-Response Therapeutics for Periodontal Diseases. *J Periodontol. 79*(8S):1592–1600.

Goel, A., Windsor, L.J., Gregory, R.L., Blanchard, S.B., Hamada, Y. 2021. Effects Of Platelet-Rich Fibrin on Human Gingival and Periodontal Ligament Fibroblast Proliferation from Chronic Periodontitis Versus Periodontally Healthy Subjects. *Clin Exp Dent Res.*7(4):435-442.

Graves, D. T., Fine, D., Teng, Y. T. 2019. The Biology of Periodontal Disease: Host Interactions with Pathogenic Bacteria. *Current Opinion in Infectious Diseases.* 32(3):290–295.

Han, T.J., Takei, H.H. Progress in Gingival Papilla Reconstruction. 1996. Periodontol 2000. 11:65-8.

Henriques, P.G., Okajima, L.S., Siqueira, S. Jr. 2018. Surgical Reconstruction of The Interdental Papilla: 2 Case Reports. *Gen Dent*. 8:66: e1-4.

Jamwal, D., Kanade, K., Tanwar, V.S., Waghmare, P., Landge, N. 2019. Treatment of Interdental Papilla: A Review. *GIJHSR*. 4(2):1-12.

Jiang, M., Li, H., Zhang, Y., Yang, Y., Lu, R., Liu, K., Que, J. 2017. Transitional Basal Cells at The Squamous–Columnar Junction Generate Barrett's Oesophagus. *Nature*. 550(7677):529-533.

PERBANDINGAN REGENERASI PAPILA INTERDENTAL PASCAINJEKSI PLATELET-RICH FIBRIN DAN ASAM HIALURONAT
PADA TIKUS MODEL OPEN GINGIVAL EMBRASURE
Rezmelia Sari, Prof. drg. Suryono, S.H., M.M., Ph.D; Dr. dr. Usi Sukorini M.Kes., Sp.P.K(K); Prof. drg. Heni Susilowat
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Jue, S.S., Kim, J.Y., Na, S.H., Jeon, K.D., Bang, H.J., Park, J., Shin, J.W. 2014. Localization Of ODAM, PCNA, And CK14 In Regenerating Junctional Epithelium During Orthodontic Tooth Movement in Rats. *Angle Orthod*. 84(3):534-40.

Jing Bi, Intriago, M.F.B., Koivisto, L., Jiang, G., Häkkinen, L., Larjava, H. 2020. Leucocyte- And Platelet-Rich Fibrin Regulates Expression of Genes Related to Early Wound Healing in Human Gingival Fibroblast. *J Clin Periodontol*. Jul;47(7):851-862.

Jurikova, M., Danihel, L., Polak, S., Varga, I. 2016. Ki67, PCNA, and MCM Protein: Markers of Proliferation in The Diagnosis of Breast Cancer. *Acta Histochemical*. 118:544-552.

Jyostna, P., Reddy, M.S., Ravikanth, Narendra, M., Dwarakanath, C.D. 2013. Expression Of PCNA In Papilla Gingival Epithelium of Aggressive and Chronic Periodontitis—A Pilot Study. *OJST*. 3:112 – 117.

Kornsuthisopon, C., Pirarat, N., Osathanon, T., Kalpravidh, C. 2020. Autologous Platelet-Rich Fibrin Stimulates Canine Periodontal Regeneration. *Sci Rep.* 10(1):1850.

Karam, J., Singer, B.J, Miwa, H., Chen, L.H., Maran, K., Hasani, M., Garza, S., Onyekwere, B., Yeh, H.C., Li, S., Carlo, D.D., Seidlits, S.K. 2023. Molecular Weight of Hyaluronic Acid Crosslinked into Biomaterial Scaffolds Affects Angiogenic Potential. *Acta Biomater*. Oct 1(69):228-242.

Kargapour, Z., Nasirzade, J., Panahipour, L., Mitulovic, G., Miron, R.J., Gruber, R. 2021. Platelet-Rich Fibrin Increases BMP2 Expression in Oral Fibroblast via Activation of TGF-β Signaling. *Int J Mol Sci.* 22(15):7935.

Kasnak, G., Fteita, D., Jaatinen, O., Könönen, E., Tunalı, M., Gürsoy, M., Gürsoy, U. 2019. Regulatory Effects of Prf and Titanium Surfaces on Cellular Adhesion, Spread, And Cytokine Expressions of Gingival Keratinocytes. *Histochem Cell Biol.* 152(1):63-73.

Kim, S., Cho, J., Jue, S., Park, J., Kim, J. 2020. Effect Of Hyaluronic Acid *Filler* Injection on The Interdental Papilla in Mouse Model of Open Gingival Embrasure. *Int J Environ Res Public Health.* 17: 4956.

Kilic, D., Alkan, B., Kilic, K. 2012. Use of a Surgical Guide in A Crown-Lengthening Procedure to Improve the Aesthetics of The Interdental Papillae: A Case Report. *Int Dent Research.* 2(3):75.

Kook, Y. A., Park, J. H., & Bayome, M. 2011. Orthodontic Considerations in Periodontal Therapy. *Seminars in Orthodontics, 17*(3):172–184.

UNIVERSITAS
GADJAH MADA
PERBANDINGAN REGENERASI PAPILA INTERDENTAL PASCAINJEKSI PLATELET-RICH FIBRIN DAN ASAM HIALURONAT PADA TIKUS MODEL OPEN GINGIVAL EMBRASURE
Rezmelia Sari, Prof. drg. Suryono, S.H., M.M., Ph.D; Dr. dr. Usi Sukorini M.Kes., Sp.P.K(K); Prof. drg. Heni Susilowat
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Kornman, K. S., & Page, R. C. 2002. Host Response in Periodontal Diseases. *Periodontol 2000.* 28(1):96–112.

Kornsuthisopon, C., Pirarat, N., Osathanon, T. 2020. Autologous Platelet-Rich Fibrin Stimulates Canine Periodontal Regeneration. *Sci Rep*. 10:1850.

Kumar, A.H., Clover, A.J. 2015. Intraperitoneal Co-Administration of Low Does Urethane with Xylazine and Ketamine for Extended Duration of Surgical Anesthesia in Rats. *Lab Anim Res*. 31(4):174-179.

Kumaran, H., Arjunkumar, R., Abilasha, R. 2020. Advanced Platelet- Rich Fibrin (A-Prf): A Gender-Based Study on Cell Population. *J. Pharm. Res. Int*.1-7.

Kumari, C.B.N., Arumugam, S., Rajaram, V. 2020. Augmentation of The Interdental Papilla with Advanced Platelet-Rich Fibrin: A Case Report. *Med Legal Update*. 20:2371-4.

Lanni, F., Merli, E., Burtini, F., Conti, V., Pelizzone, I., Lecce, R., Grolli, S. 2015. Preparation And Application of An Innovative Thrombocyte/Leukocyte-Enriched Plasma to Promote Tissue Repair in Chelonians. *Plos One*. 10(4): e0122595.

Lee, W., Seo, Y., Kim, H., Yu, S., Kim, B. 2016. The Association Between Radiographic Embrasure Morphology and Interdental Papilla Reconstruction Using Injectable Hyaluronic Acid Gel. *JIPS*. 46(4):277.

Lei, D., Deng, X., Zhao, H., Zhang, F., Liu, R. 2018. Inhibition of Tumor Growth and Angiogenesis By 2-(4-Aminophenyl) Benzothiazole in Orthotopic glioma C6 Rat Model. *Saudi J. Biol. Sci.* 25: 1483 – 1487.

Lenka, B., Mohanty, R., Satpathy, A., Nayak, R., Das, A.C., Panda, S., dan Mohanty, G. 2020. Anterior Interdental Papillary Loss Among Young Adults of Bhubaneswar: A Cross-Sectional Survey. *Indian J Forensic Med Toxicol*. 14(4):8542-8546.

Li, Y., Du, Z., Xie, X., Zhang, Y., Liu, H., Zhou, Z., Zhao, J., Lee, R.S., Xiao, Y., Ivanoviski, S., Yan, F. 2021. Epigenetic Changes Caused by Diabetes and Their Potential Role in The Development of Periodontitis. *J Diabetes Investig.* 12(8):1326-1335.

Lim, H., Kim, C., Lee, H., Jeon, G., Herr, Y., Chung, J. 2023. Effect of Polydeoxyribonucleotide with Xenogeneic Collagen Matrix on Gingival Phenotype Modification: A Pilot Preclinical Study. *JPIS*. 53(6):417.

UNIVERSITAS
GADJAH MADA
**PERBANDINGAN REGENERASI PAPILA INTERDENTAL PASCAINJEKSI PLATELET-RICH FIBRIN DAN ASAM HIALURONAT
PADA TIKUS MODEL OPEN GINGIVAL EMBRASURE**
Rezmelia Sari, Prof. drg. Suryono, S.H., M.M., Ph.D; Dr. dr. Usi Sukorini M.Kes., Sp.P.K(K); Prof. drg. Heni Susilowat
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Makdisi, J., Akbari, S., Zayeri, F., Aslroosta, H., Yaghobee, S. 2023. Application of Hyaluronic Acid for Treatment of Interdental Papillary Deficiency: A Systematic Review and Meta-Analysis. Front Dent. 20:19.

Mansouri, S.S., Ghasemi, M., Salmani, Z., Shams, N. 2013. Clinical Application of Hyaluronic Acid Gel for Reconstruction of Interdental Papilla at the Esthetic Zone. *JIDAI*. 25(3):208 – 213.

Margraf, A., Zarbock, A. 2019. Platelets in Inflammation and Resolution. *J Immunol.* 203:2357-2367.

Martinez-Herrera, M., López-Domènech, S., Donat, F., Silvestre-Rangil, J., Bañuls, C., Víctor, V., Rocha, M. 2018. Chronic Periodontitis Impairs Polymorphonuclear Leucocyte–Endothelium Cell Interactions and Oxidative Stress in Humans. *J Clin Periodontol.* 45(12):1429-1439.

McCrea, S. 2011. Management Of Multiple Inter-Implant Papillae – A Report of Two Cases With 18–36-Month Follow-Up. *Oral Surgery*. 4(4):179-189.

Mehta, M., Rai, P., Shetty, D. 2020. Concentrated Growth Factor: A Review. *Int J Dentistry Oral Sci.* 7(8):799-803.

Meidyawati, R., Suprastiwi, E. 2018. The Ability of Lysate-PRF Induces Proliferation of Fibroblast Cells in Endodontic Regenerative Therapy. *Open J Stomatol*. 8:182-187.

Mekaj, Y.H. 2016. The Roles of Platelets Inf Inflammation, Immunity, Wound Healing and Malignancy. *Int J Clin Exp Med*. 9:5347-58.

Mhaske, N., Fernandes, C., Rajhans, N., Fernandes, G. 2018. The Role of Leucocyte-And Platelet Rich Fibrin (L-PRF) In Periodontal Regeneration: A Review Article. *Mouth and Teeth*.1-5.

Miron, R. J., Choukroun, J., 2017, Platelet Rich Fibrin in Regenerative Dentistry: Biological Background and Clinical Indications, John Wiley & Sons, Hoboken.

Miron, R. J., Zucchelli, G., Pikos, M. A., Salama, M., Lee, S., Guillemette, V., Fujioka-Kobayashi, M., Bishara, M., Zhang, Y., Wang, H.L., Chandad, F., Nacopoulos, C., Simonpieri, A., Aalam, A. A., Felice, P., Sammartino, G., Ghanaati, S., Hernandez, M. A., dan Choukroun, J. 2017. Use of Platelet Rich Fibrin in Regenerative Dentistry: A Systematic Review. *Clin Oral Investig*. 21(6):1913–1927.

Miron, R.J., Chai, J., Zheng, S., Feng, M., Sculen, A., Zhang, Y. 2019. A Novel Method for Evaluating and Quantifying Cell Types in Platelet Rich Fibrin

UNIVERSITAS
GADJAH MADA
**PERBANDINGAN REGENERASI PAPILA INTERDENTAL PASCAINJEKSI PLATELET-RICH FIBRIN DAN ASAM HIALURONAT
PADA TIKUS MODEL OPEN GINGIVAL EMBRASURE**
Rezmelia Sari, Prof. drg. Suryono, S.H., M.M., Ph.D; Dr. dr. Usi Sukorini M.Kes., Sp.P.K(K); Prof. drg. Heni Susilowat
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

and An Introduction to Horizontal Centrifugation. *J Biomed Mater Res*. 1-15.

Miron RJ, Chai J, Zhang P, et al. 2020. A Novel Method for Harvesting Concentrated Platelet-Rich Fibrin (C-PRF) With A 10-Fold Increase in Platelet and Leukocyte Yields. *Clin Oral Investig*. 24(8):2819-2828.

Mourão, C.F., Valiense, H., Melo, E.R., Mourão, N.B., Maia, M.D. 2015. Obtention Of Injectable Platelets Rich-Fibrin (I-PRF) and Its Polymerization with Bone Graft: Technical Note. *Rev Col Bras Cir*. 42:421–423.

Muthukumar, S., Rangarao, S. 2015**.** Surgical Augmentation of Interdental Papila—A Case Series. *Contemp Clin Dent*. *6*: S294.

Naik, B., Karunakar, P., Jayadev, M., Marshal, V.R. 2013. Role of Platelet Rich Fibrin in Wound Healing: A Critical Review. *J Conserv Dent*. 16(4):248–293.

Nair, S., Ebenezer, S., Jalaluddin, D., Faizuddin, M., D, J. 2014. Leucocyte Count: A Window to Periodontal Disease? A Pilot Study. *IOSR-JDMS*. 13(8): 54-57.

Newman, M.G., Takei, H.H., Klokkevold, P.R., and Carranza, F.A., 2019. In Carranza's Clinical Periodontology.

Nordland, W.P., Tarnow, D. 1998. A Classification System for Loss of Papillary Height. *J Periodontol.* 69(10):1124-1126.

Oliveira, J.D., Storrer, C.M., Sousa, A.M., Lopes, T.R., Viera, J.S., Deliberador, T.M. 2021. Papillary Regeneration: Anatomical Aspects and Treatment Approach. *RSBO*. 9(4):448-56.

Park, D., Kim, Y., Kim, H., et al. 2012. Hyaluronic Acid Promotes Angiogenesis by Inducing RHAMM-TGF-β Receptor Interaction Via CD44-Pkcδ. *Mol Cells*. 33(6):563-574.

Patel, P., Thakkar, K., Kikani, A., Patel, V., Kiran, N.K., Ahmed, S. 2017. Minimally Invasive Treatment for Reconstruction of Deficit Interdental Papillae: A Pilot Study. *J Dent Spec*. 5(1):27 – 30.

Patel, M., Guni, A., Nibali, L., & García-Sánchez, R. 2024. Interdental Papilla Reconstruction: A Systematic Review. *Clin Oral Invest*. 28(1):101

Patra, L., Raj, S.C., Katti, N., et al. 2022. Comparative Evaluation Of Effect Of Injectable Platelet-Rich Fibrin With Collagen Membrane Compared With

UNIVERSITAS
GADJAH MADA
PERBANDINGAN REGENERASI PAPILA INTERDENTAL PASCAINJEKSI PLATELET-RICH FIBRIN DAN ASAM HIALURONAT PADA TIKUS MODEL OPEN GINGIVAL EMBRASURE
Rezmelia Sari, Prof. drg. Suryono, S.H., M.M., Ph.D; Dr. dr. Usi Sukorini M.Kes., Sp.P.K(K); Prof. drg. Heni Susilowat
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Collagen Membrane Alone for Gingival Recession Coverage. *World J Exp Med*. 12(4):68-91.

Pavlovic, V., Ciric, M., Jovanovic, V., Trandafilovic, M., Stojanovic, P. 2021. Platelet-Rich Fibrin: Basics of Biological Actions and Protocol Modifications. *Open Med*. 16(1):446-454.

Petrescu, B..N, Mirica, I.C., Miron, R., Campian, RS., Lucaciu, O. 2021. Platelet-Rich Fibrin As A Gingival Tissue Regeneration Enhancer. *J Dent Sci*. Jan;16(1):536-539.

Pi, S., Choi, Y.J., Hwang, S., Lee, D., Yook, J.I., Kim, K., Chung, C.J. 2017. Local Injection of Hyaluronic Acid Filler Improves *Open Gingival Embrasure*: Validation Through a Rat Model. *J Periodontol*. 88(11):1221-1230.

Pilloni, A., Marini, L., Gagliano, N., et al. 2023. Clinical, Histological, Immunohistochemical, And Biomolecular Analysis of Hyaluronic Acid In Early Wound Healing of Human Gingival Tissues: A Randomized, Split-Mouth Trial. *J Periodontol.* 94(7):868-881.

Pinal, P., Thakkar, K., Kikani, A., Patel, V., Kiran, R., Ahmed, S. 2017. Minimally Invasive Treatment for Reconstruction of Deficit Interdental Papillae: A Pilot Study. *JDS*. 5(1):27-30.

Pitale U, Pal PC, Thakare G, Verma M, Dhakad S, Pandey R. 2021. Minimally Invasive Therapy for Reconstruction of Lost Interdental Papilla by Using Injectable Hyaluronic Acid Filler. *J Indian Soc Periodontol*. 25(1):22-28.

Preeja, C., Arun, S. 2014. Platelet-rich Fibrin: Its Role in Periodontal Regeneration. *SJODR*. 5(2):117–122.

Primadina, N., Basori, A., Perdanakusuma, D.S. 2019. Proses Penyembuhan Luka Ditinjau dari Aspek Mekanisme Seluler dan Molekuler. *Qanun Medika*. 3(1):31-43.

Puri, K., Khatri, M., Bansal, M., Kumar, A., Rehan, M., Gupta, A. 2022. A Novel Injectable Platelet-Rich Fibrin Reinforced Papilla Reconstruction Technique. *J Indian Soc Periodontol*. 26(4):412-417

Qi, L., Liu, L., Hue, Y., Li, J., Cao, N., Zhu, F., Shi, C., Zhang, L. 2020. Concentrated Growth Factor Promotes Gingival Regeneration Through The AKT/Wnt/Catenin and YAP Signalling Pathways. *Artificial Cells, Nanomedicine, and Biotechnology.* 48(1):920-923.

UNIVERSITAS
GADJAH MADA
**PERBANDINGAN REGENERASI PAPILA INTERDENTAL PASCAINJEKSI PLATELET-RICH FIBRIN DAN ASAM HIALURONAT
PADA TIKUS MODEL OPEN GINGIVAL EMBRASURE**
Rezmelia Sari, Prof. drg. Suryono, S.H., M.M., Ph.D; Dr. dr. Usi Sukorini M.Kes., Sp.P.K(K); Prof. drg. Heni Susilowat
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Ramesh, A., Varghese, S., Doraiswamy, J., Malaiappan, S. 2016. Herbs As an Antioxidant Arsenal for Periodontal Diseases. *J Intercultural Ethnopharmacology.* 5(1):92.

Rashid, Z. J., Gul, S. S., Shaikh, M. S., Abdulkareem, A.A., Zafar, M.S. 2022. Incidence of Gingival Black Triangles Following Treatment with Fixed Orthodontic Appliance: A Systematic Review. *Healthcare (Basel).* 10(8):1–12.

Raval, Y.H., Shah, M.A., Dave, R.D., Debnath, A.V. 2021. Evaluation Of Efficacy of Platelet Rich Fibrin for Papilla Reconstruction. *Adv Hum Biol*. 11: S106-10.

Reyhani, V., Tsioumpekou, M., van Wieringen, T. 2017. PDGF-BB Enhances Collagen Gel Contraction Through A PI3K-Plcγ-PKC-Cofilin Pathway. *Sci Rep.* 7: 8924.

Riskesdas. 2018. Laporan Nasional 2018. Badan Penelitian dan Pengembangan. Kesehatan Departemen Kesehatan.

Rodas, M.A.R., Paula, B.L., Pazmiño, V.F.C., Lot Vieira, F.F.D.S., Junior, J.F.S., Silveira, E.M.V. 2020. Platelet-Rich Fibrin in Coverage of Gingival Recession: A Systematic Review and Meta-Analysis. *Eur J Dent*. Mar;14(2):315-326.

Roy, A., Kashyap, B., & Nakra, P. 2019. Black Triangles and Its Management-A Review. *SSR Inst. Int. J. Life Sci*. 5(3): 2278-2283.

Sanghani, N., Apine, A., Shivaprasad, B., Ritesh, K., Nalini, M. 2014. Conquering The "Dreaded" Black Triangles: A Case Series. *J. Evol. Med. Dent. Sci.* 3(17): 4636-4642.

Savi, F.M., Brierly, G.I., Baldwin, J., Theodoropoulos, C., Woodruff, M.A. 2017. Comparison of Different Decalcification Methods Using Rat Mandibles as a Model. *J Histochem Cytochem*. Dec;65(12):705-722.

Sculean, A., Chapple, I. L. C., Jepsen, S. 2015. Biomarkers In the Prevention, Diagnosis, And Management of Periodontal Diseases. *Periodontology 2000,* 69(1):163–199.

Sharma, A.A., Park, J.H. 2010. Esthetic Considerations in Interdental Papilla: Remediation and Regeneration. *J Esthet Restor Dent*. 22(1):18-28.

Shum, I., Leung, P., Kwok, A., Corbet, E., Orwoll, E., Phipps, K., Jin, L. 2010. Periodontal Conditions in Elderly Men with And Without Osteoporosis Or Osteopenia. *J Periodontol.* 81(10):1396-1402.

UNIVERSITAS
GADJAH MADA
PERBANDINGAN REGENERASI PAPILA INTERDENTAL PASCAINJEKSI PLATELET-RICH FIBRIN DAN ASAM HIALURONAT PADA TIKUS MODEL OPEN GINGIVAL EMBRASURE
Rezmelia Sari, Prof. drg. Suryono, S.H., M.M., Ph.D; Dr. dr. Usi Sukorini M.Kes., Sp.P.K(K); Prof. drg. Heni Susilowat
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Singh, V.P., Uppoor, A.S., Nayak, D.G., Shah, D. 2013. Black Triangle Dilemma and It Management in Esthetic Dentistry. *Dent Res J.* 10: 296–301.

Silva, T., Margonar, R., Faeda, R., Oliveira, A., Souza, I., Santos, P., Queiroz, T. 2019. Hyaluronic Acid for Repairing Interdental Papilla in Esthetic Area: Case Report. *Revista Clínica De Periodoncia Implantología Y Rehabilitación Oral.* 12(3):157-158.

Slevin, M., Krupinski, J., Gaffney, J. 2007. Hyaluronan-Mediated Angiogenesis in Vascular Disease: Uncovering RHAMM And CD44 Receptor Signaling Pathways. *Matrix Biol*. 26(1):58-68.

Song, Y., Kim, S., Waller, T., Kook, J., Cho, S., Jung, U., Thoma, D. 2018. Soft Tissue Substitutes to Increase Gingival Thickness: Histologic and Volumetric Analyses in Dogs. *J Clin Periodontol*. 46(1):96-104.

Sorsa, T., Tjäderhane, L., Salo, T. 2020. Matrix Metalloproteinases in Oral Diseases. *J Dent Res. 99*(3):281–291.

Spano, S., Ghilzon, R., Lam, D., Goldberg, M., Tenenbaum, H. 2019. Subperiosteal Papilla Augmentation with A Non–Animal-Derived Hyaluronic Acid Overlay Technique. *Clin Adv Periodontol.* 10(1):4-9.

Steinfort, S., Röcken, M., Vogelsberg, J., Failing, K., Staszyk, C. 2019. The Equine Gingiva: A Histological Evaluation. *Front Vet Sci*. 6:435.

Sudhakar, U., Arunachalam, L.T., D Melba, B., Keertana, S., Jenisha, P.S. 2020. Interdental Papilla and Various Preservation Techniques. *IJADS*. 6(4):161-166.

Tarnow, D. P., Magner, A. W., & Fletcher, P. 1992. The Effect of The Distance from The Contact Point to The Crest of Bone on The Presence or Absence of The Interproximal Dental Papilla. *J Periodontol. 63*(12): 995–996.

Thanasrisuebwong, P., Kiattavorncharoen, S., Surarit, R., Phruksaniyom, C., Ruangsawasdi, N. 2020. Red and Yellow Injectable Platelet-Rich Fibrin Demonstrated Differential Effects on Periodontal Ligament Stem Cell Proliferation, Migration, and Osteogenic Differentiation. *IJMS*. 21. 5153.

Thiruvoth, F. M., Mohapatra, D. P., Sivakumar, D. K., Chittoria, R. K., Nandhagopal, V. 2015. Current Concepts in the Physiology of Adult Wound Healing. *Plast Aesthet Res*. 2(5):250–256

Thulabandu, V., Chen, D., Atit, R.P. 2018. Dermal Fibroblast in Cutaneous Development and Healing. *Wiley Interdiscip Rev Dev* Biol. 7(2):10.

UNIVERSITAS
GADJAH MADA
**PERBANDINGAN REGENERASI PAPILA INTERDENTAL PASCAINJEKSI PLATELET-RICH FIBRIN DAN ASAM HIALURONAT
PADA TIKUS MODEL OPEN GINGIVAL EMBRASURE**
Rezmelia Sari, Prof. drg. Suryono, S.H., M.M., Ph.D; Dr. dr. Usi Sukorini M.Kes., Sp.P.K(K); Prof. drg. Heni Susilowat
Universitas Gadjah Mada, 2025 | Diunduh dari http://etd.repository.ugm.ac.id/

Tian, X., Azpurua, J., Hine, C., Vaidya, A., Myakishev-Rempel, M., Ablaeva, J., Mau, Z., Nevo, E., Gorbunova, V., Seluanov, A. 2013. High-Molecular-Mass Hyaluronan Mediates The Cancer Resistance of The Naked Mole Rat. *Nature.* 499:346–349.

Tomar, N., Singal, V., Dureja, D., Wadhawan, A. 2016. Reconstruction Of Interdental Papilla with Platelet-Rich Fibrin Membrane. *J Curr Res Sci Med.* 2:112-5

Tran, C., Carraux, P., Micheels, P., Kaya, G., Salomon, D. 2014. In vivo Bio-Integration of Three Hyaluronic Acid Fillers in Human Skin: A Histological Study. *Dermatology*. 228(1):47-54.

Uzieliene, I., Bironaite, D., Bernotas, P., Sobolev, A., Bernotiene, E. 2021. Mechanotransducive Biomimetic Systems for Chondrogenic Differentiation in Vitro. *Int J Mol Sci*. 22(18):9690.

Vijayalakshmi, R., Sathyapriya, R., Prashanthi, P., Burnice, C. 2020. Advanced-Platelet Rich Fibrin-Assisted Papilla Reconstruction by Modified Beagle's Technique - A Novel Approach. *JCDR*. 14: ZD07-9

Wang, X., Zhang, Y., Choukroun, J., Ghanaati, S., Miron, R.J. 2017. Behavior of Gingival Fibroblast on Titanium Implant Surfaces in Combination with Either Injectable-PRF Or PRP. *Int J Mol Sci*.18(2):331.

Wang, X., Fok, M.R., Pelekos, G., Jin, L., Tonetti, M.S. 2022. In Vitro and Ex Vivo Kinetic Release Profile of Growth Factors and Cytokines from Leucocyte-and Platelet-Rich Fibrin (L-PRF) Preparations. *Cells*. 11(3):2089.

Zahra, K., Jila, N., Layla, P., Goran, M., Richard, J. M., Reinhard, G., Reinhard, G. 2021.Platelet-Rich Fibrin Increases BMP2 Expression in Oral Fibroblast via Activation of TGF-β Signaling. *Int J Mol Sci*. Jul 25;22(15):7935.

Zetu, L., Wang, H. L. 2005. Management of Inter-Dental/Inter-Implant Papilla. *J Clin Periodontol. 32*(7):831–839.

Zhan, Y., Lu, R., Meng, H., Hou, J., Huang, W., Wang, X., Hu, W. 2020. Platelets As Inflammatory Mediators in A Murine Model of Periodontitis. *J Clin Periodontol*. 47(5):572-582.

Zhang, Y., Hong, G., Zhang, Y., Sasaki, K., dan Wu, H. 2020. Minimally invasive procedures for deficient interdental papillae: A review. *J Esthet Restor Dent*. 32(5):463–471.