



Platelet-rich fibrin in facial rejuvenation: a clinical case report and dermal biostimulation perspective

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ARTICLE INFO

Received 07 July 2026
Accepted 08 August 2026

Keywords:

platelet-rich fibrin
skin rejuvenation
biostimulation
regenerative medicine
orofacial harmonization

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DOI: 10.62741/ahrj.v3iSuppl.3.261

ABSTRACT

Introduction: Skin aging is a multifactorial process characterized by structural and functional alterations within the extracellular matrix of the skin. Changes such as reduced fibroblast activity, collagen and elastin degradation, and decreased dermal vascularization contribute to clinical manifestations including loss of elasticity, skin laxity, increased roughness, and overall deterioration in skin quality. Regenerative medicine has increasingly explored therapeutic approaches based on autologous biomaterials capable of stimulating tissue repair. Among these, platelet concentrates have attracted significant interest. Platelet-rich fibrin is an autologous biomaterial obtained from blood without the use of anticoagulants, forming a three-dimensional fibrin matrix containing platelets, leukocytes, and bioactive cytokines. This matrix gradually releases growth factors involved in cellular proliferation, angiogenesis, and collagen synthesis, thereby promoting tissue regeneration and improving skin quality.

Objective: To present a clinical case of facial rejuvenation using platelet-rich fibrin and discuss the potential biological mechanisms and benefits of this approach in the context of skin aging.

Methods: A therapeutic protocol based on the preparation of platelet-rich fibrin through low-speed centrifugation of autologous blood, without the addition of anticoagulants, was implemented. The resulting concentrate was subsequently administered via intradermal injections at multiple facial sites to stimulate dermal regenerative processes. The treatment protocol consisted of two sessions performed five weeks apart. Clinical evaluation was based on the objective assessment of skin texture, elasticity, and firmness, as well as the monitoring of potential adverse events.

Clinical Case Description: A 38-year-old female patient, Fitzpatrick skin phototype III, presented with concerns regarding reduced skin firmness, fine skin roughness, and diminished overall

Contributions: Conceptualization: FS; Data curation: Not applicable; Formal Analysis: JS; Funding acquisition: Not applicable; Investigation: JS and AS; Methodology: FS and SD; Project administration: AS; Resources: Not applicable; Software: Not applicable; Supervision: AS; Validation: JS; Visualization: IAC; Writing original draft: IAC and FS; Writing – review: AO and SD.

Please cite this article as: Silva F, Santos J, Silveira A, Dieb S, Oliveira A, Castro IA. Platelet-rich fibrin in facial rejuvenation: a clinical case report and dermal biostimulation perspective. *Athena Health & Research Journal*. 2026; 3(Suppl. 3). doi: 10.62741/ahrj.v3iSuppl.3.261

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skin quality. Clinical examination revealed decreased skin elasticity and early signs of dermal aging. Following blood collection and centrifugation processing, platelet-rich fibrin was administered intradermally at multiple facial injection sites. The treatment was well tolerated, and no significant complications were observed during or after the procedures. Three-month follow-up demonstrated improvement in skin texture, increased firmness upon palpation, and reduction of fine roughness, reflecting an overall enhancement in skin quality.

Conclusion: Platelet-rich fibrin demonstrates significant potential as a dermal biostimulation strategy for facial rejuvenation, promoting tissue regeneration and improving skin quality. Its autologous nature, combined with a minimally invasive and favorable safety profile, makes this approach particularly relevant within the field of regenerative aesthetic medicine. However, controlled clinical studies with larger sample sizes are required to standardize therapeutic protocols and validate long-term efficacy.
