

# Platelet-Rich Plasma Combined With Skin Substitute for Chronic Wound Healing: A Case Report

Rebecca L. Knox, CCP; Allen R. Hunt, CCP; John C. Collins, CCP; Marie DeSmet, RN; Sara Barnes, DO

Trinity Center for Wound Care and Hyperbaric Medicine, Bettendorf, Iowa

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**Abstract:** Contemporary management of chronic wounds focuses on improving natural healing and individualization of treatment. Incorporating multiple therapies has become increasingly common. Of interest are autologous growth factors, which are especially important in chronic wound healing and may contribute to tissue formation and epithelialization. Autologous platelet concentrate or platelet-rich plasma (PRP) is a concentration of at least five autologous growth factors and has been shown to accelerate wound healing and may have infection-fighting properties. Chronic wound healing is complicated by both decreased growth factor availability and infection, making PRP use valuable in these types of wounds. In this report, the use of PRP therapy alone and in combination with a bioengineered skin substitute as a platelet-rich tissue graft in a chronic, non-healing

wound is detailed. Over 27 weeks, the patient received multiple therapies in attempts to heal a severe decubitus ulcer of the sacrum. The introduction of PRP therapy at Week 14 led to a 26% reduction in wound depth over 4 weeks. At Week 19, PRP therapy was combined with a powdered skin substitute to create a platelet-rich tissue graft. The combination brought dramatic results, eliminating wound tunneling and reducing the wound dimensions from 6.2 cm long  $\times$  6.7 cm wide  $\times$  2.7 cm deep to 5.0 cm long  $\times$  6.0 cm wide  $\times$  1.4 cm deep. The promising observations from this case report indicate that further study on the combining of PRP therapy and skin substitutes is necessary. **Key-words:** platelet-rich plasma, chronic wounds, growth factors, skin substitutes, infection. *JECT. 2006;38:260-264*

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