

Union Rates Using Autologous Platelet Concentrate Alone and With Bone Graft in High-Risk Foot and Ankle Surgery Patients

Christopher Bibbo, DO,¹ Christopher M. Bono, MD,² and Sheldon S. Lin, MD³

Adjuvant use of autologous platelet concentrate (APC) to assist bone healing in foot and ankle surgery has not been reported. This study examined the clinical results and complications after the adjuvant use of APC in high-risk patients undergoing elective foot and ankle surgery. Patients at risk for bone-healing complications were prospectively enrolled over a 6-month period for the intraoperative application of APC. Patients were followed every 2 weeks for radiographic union and complications. Sixty-two high-risk patients were enrolled, totaling 123 procedures. Mean patient age was 51 years (range, 16–76), there were 36 females and 26 males, and 24 patients were smokers. Overall, a 94% union rate was achieved at a mean of 41 days. For APC alone, the mean time to union was 40 days; when APC was used with autograft, the mean time to union was 45 days ($p = .173$, two-tailed t test). These data suggest that adjuvant APC results in an acceptable time to union and may be a useful adjunct to promote osseous healing in high-risk patients undergoing elective foot and ankle surgery. (Journal of Surgical Orthopaedic Advances 14(1):17–22, 2005)

Key words: autologous platelet concentrate, bone healing, complications, fusion, high-risk patients, nonunion, platelet-rich plasma