

Effects of fibrin pad hemostat on the wound healing process in vivo and in vitro.

Authors: Harmon A.M., Kong W., Buensuceso C.S., Gorman A.J., Muench T.R.

Publication Date: 2011

Abstract:

Fibrin Pad is a hemostatic pad designed to control surgical-related bleeding. It consists of a fully absorbable composite matrix scaffold coated with human-derived active biologics that immediately form a fibrin clot upon contact with targeted bleeding surfaces. Studies were conducted to investigate the effect of Fibrin Pad and its biologics-free composite matrix component (Matrix) on the wound healing process in in vitro and in vivo models. Fibrin Pad was evaluated in solid organ, soft tissue defects, and subcutaneous tissues. Immunocompromised rodents were used to avoid xeno-mediated responses. Extracts created from both materials were evaluated for biological activity using in vitro cell culture assays. Neither Fibrin Pad nor Matrix alone showed any inhibition of the wound healing of treated defect sites. An apparent accelerated healing was noted in the soft tissue and subcutaneous tissue defects with Fibrin Pad as compared to Matrix. Both materials showed desirable properties associated with tissue scaffolds. The in vitro study results show that Fibrin Pad extract can induce dose-dependent increases in fibroblast proliferation and migration. These studies confirm that the biologic components of Fibrin Pad can enhance wound healing processes in in vitro assays and fully support wound healing at the site of in vivo application. © 2011 Elsevier Ltd.