

## 論 文 要 旨

**Evaluation of the wound healing process in rat skin using a hexanoyl group-modified alkaline-treated gelatin porous film**

〔 多孔膜状疎水化ゼラチン接着膜がラット背部創傷治癒過程に  
与える影響の評価 〕

氏 名 古閑 崇

The present study investigated the wound healing process in a rat skin wound model dressed with a hexanoyl group-modified alkaline-treated gelatin porous (HxAlGln) film with angiogenesis-inducing and strong bioadhesive properties or a collagen sponge (CS). A circular 10-mm full-thickness skin defect was created on the backs of 8-week-old rats and then dressed with a HxAlGln film (HxAlGln group), collagen sponge (CS group), and no dressing (control group). Wound distances and areas were assessed macroscopically at specific time points after surgery, the lengths and thicknesses of the neo-epithelium histologically, and  $\alpha$ -smooth muscle actin ( $\alpha$ -SMA), collagen type I, and fibronectin immunohistochemically. Wound distances and areas were significantly smaller in the HxAlGln group than in the CS and control groups. The expression of  $\alpha$ -SMA in myofibroblasts was significantly weaker in the HxAlGln group than in the other groups on day 7. Furthermore, angiogenesis was prominent on days 4 and 7 in the HxAlGln group. No significant differences were observed in the length of the neo-epithelium between all groups, whereas the thickness of the neo-epithelium was greater in the HxAlGln group than in the CS group. The present results suggest the potential of the HxAlGln film as a dressing material in the wound healing process of full-thickness skin defects because it reduces scar contraction and promotes angiogenesis more than CS.