Promotive effects of autologous fibrin glue "cryoseal" on wound healing - Comparison of the effects with commercially available fibrin glues. [Japanese]

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Abstract:

Objective: Promotive effects of autologous fibrin glue (CryoSeal) produced by CryoSeal FS System (ThermoGenesis, USA) were compared with those of commercially available fibrin glues. Methods: Fibrin glues were embedded at the base of incised wound of abdominal skin of rats. Adhesive strength of the glues was measured using a tensile strength tester at 30 min, 24hrs and 7 days after embedding. Histopathological examination was undertaken on the skin samples collected at 7 days post embedding. Incised abdominal skins without fibrin glue embedding were served as control. Results: Tensile strength gradually increased on time in all groups and they were consistently higher in the skins treated with fibrin glues in comparison with control. Among the fibrin glues, autologous fibrin glue showed a significantly higher adhesive effect comparing with other commercially available fibrin glues. Histopathologically, fibrin glues promoted wound healing by producing more amount of and matured granulation tissue under the regenerated epidermis covering the surface of wound. The autologous fibrin glue was absorbed and induced the proliferation of granulation tissue more promptly than commercially available fibrin glues. Conclusion: Autologous fibrin glue promoted a rapid wound healing and contributed to higher tensile strength of incised wound of the skin in comparison with commercially available fibrin glues. The autologous fibrin glue was considered safe regarding the risks of contaminant infection/anaphylaxis and more effective tissue adhesive than commercially available fibrin glues.