Biological wound tissue glue systems in wound healing. [German]

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Abstract:

Tissue engineering relies on in vitro cell culture, biocompatible matrix materials and genetic engineering with growth and differentiation factors for guided tissue regeneration. Biogenic or semisynthetic biomaterials are an alternative as cell carriers: To circumvent the disadvantages of conventional keratinocyte sheet grafts, a keratinocyte fibrin glue suspension KFGS (H. W. Kaiser et al., Burns 20: 23, 1994), which mainly consists of epidermal stem cells, has been tested experimentally in nude mice and clinically in extensive burns and chronic wounds. In the "in vivo culture" on the wound, the non-confluent keratinocytes form a differentiated epithelium within days. Current research aims at guided dermal regeneration by a combination with allodermis or biomaterials (collagen sponges like TissueFaszie, Microspheres etc.). Fibrin glue (Tissuecol) has also been tested successfully as matrix for other cells like chondrocytes and fibroblasts transfected with growth factor genes (EGF/KGF).