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Literature Abstract

Defective wound healing in aging gingival tissue

The physiologic process of aging can affect cell function negatively; senescence is known to be associated with a reduction in regenerative ability and collagen synthesis in periodontal tissues. This study aimed to investigate the differences in cellular responses between young and old human gingival fibroblastic tissue cultures and also the differences in gingival wound healing between young and old rats. Human gingival fibroblasts were harvested from five younger (15 to 25 years old) and five older (50 to 70 years old) healthy patients at third molar or crown lengthening sites and cultured for cell analysis. The younger human gingival fibroblasts showed increased cell proliferation and viability, faster migration times, and better collagen gel remodeling capacity. The older human gingival fibroblasts stimulated with rat TGF- β 1 showed altered myofibroblastic differentiation. With regard to gingival wound healing in rats, there was significant delay in wound healing in older rats (18 months old) compared to younger rats (2 months old) at the seventh day of wound healing. This article provides some insight into the differences in healing processes between younger and older periodontal tissue, and results are consistent with the current understanding of the physiologic effects of senescence.

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