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Titel des Beitrags:
Refixation of the supraspinatus tendon in a rat model--influence of continuous growth factor application on tendon structure.

Abstract:
The purpose was to evaluate histological changes of the supraspinatus tendon (SSP) after refixation under continuous growth factor application over 20 days in comparison to the native healing process. In a chronic rat tendon tear model (15 rats/group), a transosseous SSP refixation was performed and growth factors (control, G-CSF, b-FGF, combination) were continuously released into the subacromial space by an osmotic pump. Tendon healing was evaluated histologically by a modified MOVIN-Score, and Collagen I/III content was determined by immunohistology at 6 weeks. A modified MOVIN sum score showed significant lower counts for G-CSF and b-FGF in comparison to the control group (p = 0.050/p = 0.027) and the combined group (p = 0.050/p = 0.043). Collagen III was significantly reduced in the combined group compared to the control group (p = 0.028). Collagen I showed no significant differences. The Collagen I/III ratio was nearly doubled for b-FGF and the combined group compared to the control. At the study endpoint, 33% of pump dislocations were detected. The continuous application of both isolated growth factors (G-CSF/b-FGF) achieved improved tendon-remodeling. However, the continuous application via an osmotic
pump showed a relative high dislocation rate when applied in the rat model.