ACCELERATION OF WOUND HEALING AFTER TOPICAL APPLICATION OF HYALURONIC ACID-SOAKED COTTON TO HEMORRHOIDECTOMY WOUNDS IN A RAT MODEL

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UEG Week Copenhagen 2023 | Poster

Colorectal

October 15, 2023

A rat model study found that single-application topical hyaluronic acid-soaked cotton accelerated perianal wound healing after surgical injury, reducing complete healing time from 16.4 to 13.9 days compared to gauze dressing.

KEY POINTS

- Forty-eight Sprague-Dawley rats with biopsy-punch perianal wounds were randomized to hyaluronic acid-soaked cotton dressing or gauze control, with single postoperative application.
- Complete wound healing occurred significantly faster in the hyaluronic acid group (13.9 vs 16.4 days, p=0.031), with the largest difference on postoperative day 2 (51.6% vs 28.8% healed area, p<0.001).
- Hyaluronic acid-treated wounds showed fewer cases of residual granulation tissue (2 vs 5 cases) and redness (0 vs 3 cases) at complete healing.
- Histological analysis revealed accelerated re-epithelialization, rapid shift to lymphocyte-dominant inflammation, enhanced fibroblast proliferation, and greater collagen deposition in the hyaluronic acid group.
- The authors suggest these findings may support use of topical hyaluronic acid-soaked cotton for hemorrhoidectomy wounds in humans, though this was not tested in the study.

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