Intraoral defect coverage with prelaminated epigastric fat flaps with human amniotic membrane in rats.

Background: The aim of this study was to investigate whether or not wound healing after the use of microvascular anastomosed fat flaps prelaminated with human amniotic membrane, for intraoral defect coverage, is improved when compared with wound healing of pure fat flaps. Methods: Microsurgical transplantation of the superficial epigastric fat flap prelaminated with HAM was evaluated using 47 Sprague-Dawley rats. Standardized oral mucosa defects were created and covered by HAM or polyglactin910/polydioxanon patches only, prelaminated and bare flaps, uncovered or by HAM after flap insertion. After 7, 15, and 35 days, postoperatively, the flaps were reassessed. Results: The mean value of the defect size after 7 days was 47.73 ± 2.63 mm(2) in the control, 48.63 ± 2.23 mm(2) in the bare flaps covered by HAM after insertion, and 36.85 ± 2.79 mm(2) in the prelaminated HAM group. The mean value of the wound closure time in all rats was 13.74 ± 2.05 days (range 11-18). Intraoral defects were covered with mucosa after 15.67 ± 1.66 days in the pure flap group and 11.89 ± 0.78 days in the HAM group (p< 0.0001). Conclusions: Prelaminated flaps with HAM used in the repair of large mucosa defects complete epithelialization from the surrounding margins faster than bare flaps. Wound healing can be enhanced by using HAM as a prelaminated epithelial

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