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Abstract

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A histological study was conducted of the alveolar bone healing process following tooth extraction of dehydrated rats after the implantation of fibrin adhesive (TISSUCOL™) associated to previous irrigation of the wound with a 5% epsilon aminocaproic acid solution (EACA). Seventy two rats were used, divided into three groups receiving different treatments after the surgical procedure. In group I, the gingival mucosa was sutured after extraction of the right upper incisor. In groups II and III, chronic dehydration was produced by water deprivation for 9 days (3 days in the preoperative period and 6 days in the postoperative period). In the animals of Group II, after tooth extraction, the gingival mucosa was sutured in the same way as performed in group I. In group III, after extraction, the dental socket was irrigated with 5% EACA, followed by implantation of the fibrin adhesive (TISSUCOL™). The mucosa was sutured in the same way as performed in the other groups. At 3, 7, 15 and 21 postoperative days, the animals were sacrificed in number of 6 for each group. Specimens containing the dental socket were removed and fixed in 10% formalin and decalcified in an equal part formic acid and sodium citrate solution. After routine processing, the specimens were embedded in paraffin for microtomy. We obtained 6 µm semi-serial slices that were stained with hematoxylin and eosin for histological evaluation. The results showed that the water deprivation in the pre- and postoperative periods caused a delay in the alveolar bone healing process. The use of the fibrin adhesive (TISSUCOL™) produced an improvement in the fibrinolytic picture caused by dehydration.

Keywords : Tooth socket; Dehydration; Fibrin tissue adhesive.

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