

عنوان مقاله:

Effects of Honey and Hydroxyapatite on Bone Healing in Rats

محل انتشار:

مجله تروما، دوره 23، شماره 4 (سال: 1397)

تعداد صفحات اصل مقاله: 0

نویسندگان:

Amin Bigham-Sadegh

Iraj Karimi

Farzaneh Hoseini

Ahmad Oryan

Siavash Sharifi

Afshin Pakzad

خلاصه مقاله:

Background: Bone defect healing in orthopedic surgery is a huge challenge. Nowadays, scaffolds are frequently used for tissue regeneration and engineering. One of these scaffolds, hydroxyapatite, is the most important inorganic material in bone, and a good option for promoting healing of bone defects. Honey has long been used for various wound healing with beneficial outcomes in the healing process. However, limited studies have addressed its use in repairing hard tissue lesions. **Objectives:** The aim of this study was to evaluate the effects of honey and hydroxyapatite on the restoration of bone defect in rats. **Methods:** In this study, ۱۵ adult male rats weighing ۲۰۰ to ۳۰۰ grams were used. Rats were randomly assigned to three groups. A segment of the radius bone twice the size of the radius bone width was removed. In the first group ($N = ۵$), the induced defect in the right hand was replaced with autograft bone using the same piece of bone, while the left hand remained empty without any implantation. In the second group ($N = ۵$), defect in the right hand was filled with ۰.۵ g of honey and in the left hand with honey and autograft bone. In the third group ($N = ۵$), defects in the right hand were filled with granules of hydroxyapatite and those in the left hand with ۰.۵ g combination of granules and honey. Radiographs in rats were taken at weeks two, four, six, and eight after surgery and bone biopsy for histopathological study was performed at week eight. **Results:** Radiographs and tissue samples were statistically analyzed in terms of bone formation, union and remodeling. Analyses showed that in the second week, honey-autograft was significantly better than the other groups ($P < ۰.۰۵$). The honey-alone treated group at all times was weaker than others. Histopathological investigations revealed that the hydroxyapatite-alone group was significantly different from hydroxyapatite-honey, autograft, honey, and negative control counterparts in terms of bone marrow formation ($P < ۰.۰۵$). **Conclusions:** Overall, this study showed that honey and hydroxyapatite alone is not effective in repairing bone defect yet in combination they function more effectively.

کلمات کلیدی:

Bone, Hydroxyapatite, honey, Autograft

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1809645>



