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## Enhancement of gingival wound healing by local application of silver nanoparticles periodontal dressing following surgery: A histological assessment in animal model

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**Background:** The value of periodontal dressing and its effects on periodontal wound healing have been questioned. Besides, the early healing of the gingival and periodontal wounds in oral cavity should be emphasized to promote the treatment outcome. Several studies pointed out a potential positive effect of silver nanoparticles (NPs) on the healing process of skin wounds.

**Aim:** The present work aimed to design silver NPs periodontal dressing and then, evaluated its effects on gingival wound healing following operation.

**Methods:** Thirty healthy adolescent female rabbits were used in this study. They had intact teeth and the clinical and radiographic examination revealed no periodontal disease. Silver NPs were added to carbonate methyl cellulose as base with 2 different concentrations of 25% v/v (Group A) and 50% v/v (Group B). On the basis of simple randomized allocation, gingivectomy was performed at the buccal gingiva of the left and right mandibular incisors and subsequently, untreated wounds in the control area were covered with periodontal pack and periodontal dressings A and B were applied in the test regions. Histological changes were monitored in day 4 and 7 post operation to evaluate the inflammatory and repair stage of healing process.

**Results:** We observed significant difference in the inflammatory and repair parameters of the healing process between surgical sites treated with this periodontal dressing and control group. Besides, wounds treated with silver NPs dressing in general terms had all the hallmarks of relatively complete healing one week post operatively.

**Conclusion:** The results indicated positive potential therapeutic effects for this new formulation of periodontal dressing on acceleration of surgical wound healing that led to the improvement of periodontal treatment consequences following operation.

### Biography

Majid Zakeri has completed his DDS from Mashhad University of Medical Sciences, Iran and Fellowship in Aesthetic Dentistry from Università degli Studi di Genova, Italy DISC (2014). He is the Technical Director of Novin Dentistry Clinic affiliated to Red Crescent of Khorasan Razavi Province, Iran. He has 3 inventions in dentistry field: Dentistry Mouth Opener; Nanopack Dressing for Oral Surgery and; Nano Silver Stitch for Oral Operation. He has won silver prize from Seoul International Invention Fair 2009 (SIIF 2009) and special award from Association of Russian House for International Scientific and Technological Cooperation in Seoul International Invention Fair 2009 (SIIF 2009). He serves as a peer reviewer for the *British Journal of Medicine and Medical Research* and member of International Federation of Inventors Associations (IFIA) Agent in Iran.

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