



How effective is collagen resorbable membrane placement after partially impacted mandibular third molar surgery on postoperative morbidity? A prospective randomized comparative study

ABSTRACT

This was a prospective, randomized controlled study on the two methods (primary closure and secondary closure) proposed for wound closure in case of mandibular third molar (3 M) surgery. The study sample included patients with no history of medical illness or medication that could influence wound healing. They were randomly assigned to three groups: the secondary closure group (SC), with partial closure of the extraction site to allow secondary healing; the primary closure group (PC), involving total closure of the extraction site for primary healing; and the membrane based primary closure group (MBPC), involving total closure of the extraction site by sliding the flap and using a collagen membrane positioned to extend 3–4 mm beyond the margin of the bone defect. The aim of the study was to evaluate the incidence of postoperative complications and analyze swelling, mouth opening, and pain. With reference to pain, its scores were generally slightly better in the SC group than in the PC and MBPC groups, but with no statistically significant difference between the 3 groups ($p > 0.05$) except between SC and MBPC on the second day ($p = 0.014$). The swelling recorded on postoperative days 2 and 7 was lower in the SC group than in the PC ($p = 0.046$ and 0.000) and in MBPC ($p = 0.005$ and 0.002) groups, respectively, with no significant differences between the PC and MBPC groups ($p > 0.05$). Even if mouth opening showed a statistically significant difference between the three groups at day 2 ($p = 0.000$), at day 7 there were no statistically significant differences between the three groups ($p = 0.093$) and the same was registered also for trismus scores.

CONCLUSIONS

According to the results of the present study, swelling and mouth opening seem to be better in case of a secondary closure. Primary closure and primary closure using the collagen membrane are relatively similar in terms of immediate postoperative discomfort. Anyway, the use of resorbable collagen membrane showed clinically satisfactory results and the absence of alveolitis and the minimal wound dehiscence in the primary closure using the collagen membrane suggests that membranes can support primary healing in terms of wound healing.

ALVEOLAR REGENERATION

126

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