

Prevention of inflammatory complications following mandibular third molar surgery using three different endoalveolartopical agents

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Purpose: To verify the efficiency of intra alveolar administration of chlorexidine gel, alvogyl paste and surgical sponge soaked in tetracycline in prevention of inflammatory complications after mandibular third molar surgery.

Material and Methods: Data were collected prospectively for one hundred and eight mandibular extracted third molars among 51 female and 45 male patients, age range 17-38, were divided proportionally in four groups, 27 each in: chlorexidine gel (Group A), alvogyl paste (Group B), surgical sponge soaked in tetracycline solution (Group C) and control group which didn't receive any topical agent (Group D). Degree of impaction and was documented using Pell and Gregory classification, meanwhile, difficulty of surgery was evaluated utilizing Parant scale. After surgical removal topical agents were placed into the extraction socket except at the control group. Standard post-operative instructions are explained (cryotherapy and administration of analgesics). Facial swelling, inflammation, trismus and pain level were evaluated in all four groups after twelve, twenty four, forty eight hours after surgery and seven days post-extraction. In order to assess the impact of treatment on the Oral Health Related Quality of Life (OHRQoL) of the patients at 24 hours and 7 days post-extraction.

Results: Chlorexidine 0.2% gel (Group A) and sponge soaked in tetracycline (Group C) showed a significant reduction of postoperative swelling, pain and trismus ($p < 0.05$), compare to alvogyl paste (Group B) and control group (Group D). The complication rate according to degree of impaction and degree of surgery was 1.9 times greater among females than among males ($\chi^2 = 2.85$, $p = 0.044$). At the control group (Group D) alveolar osteitis was noted at five subjects (four female and one male) and this was statistically significant ($P = 0.017$). Using the Wilcoxon test for paired samples OHRQoL of the patients at 24 hour and 7 days post-extraction gave statistically significant differences between chlorexidine and tetracycline sponge groups in comparison to alvogyl and control group.

Conclusion: Post-extraction endoalveolar application of chlorexidine 0.2% gel and sponge soaked in tetracycline were effective in reducing frequency of inflammatory complications following mandibular third molar surgery.

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