Refinement in treatment of surgical wounds – Reso-Pac® periodontal bandage

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Most periodontal bandages are based on zinc oxide eugenol (ZOE) and/or methacrylate polymers, which is the basic feature of such preparations mechanical retention in the area of application. Classic preparations become curative after mixing the individual ingredients prior applications or in contact with saliva. The biggest disadvantage of these fixed gingival or periodontal bandage is the difficulty in removing. This is the reason it creates discomfort for the patient as well as potential pain and the possibility of re-injury.

Physiological bleeding stops after about 5 minutes, while it requires up to 90 minutes for the formation of solid cloth, which effectively closes and protects the wound. Unfortunately, this rule is not to apply in the oral environment, where saliva washes and rinses the wound area. Adequate periodontal bandage must feature several conditions to ensure wound healing of oral tissue:

1. Feature self absorbing, dissolving to eliminate the need of mechanical removal of the bandage
2. Persistence through at least 24 hours
3. Adhesion, non mechanical retention as only the strong adherence of the material provides insulation from unwanted oral milieu and food particles
4. Elasticity and softness of the material during the handling and application, as well as modelling of the bandage
5. Comfort for the patient, neutrality of flavour and smell of material, thus neither odour nor taste of the material effect the patient’s daily routine.

Significant distance and a kind of revolution in the world of periodontal bandage started with a new mixture concept. Reso-Pac is completely different from conventional periodontal preparations. The reason for this is the hydrophilic material has excellent adhesion properties to the oral tissue. The base material consists of cellulose and contains extracts of myrrh, an aromatic resins derived from wood Commiphora myrrha, and has antiseptic, astringent and haemostatic properties. Allergic reactions are not known. Ready to use and easy in handling, it requires no mixing of the ingredients, which makes this material so unique. With the help of wet gloves or a spatula a ball needs to be modelled from the material, which is to be pressed onto the wound area. After about 3 minutes the material becomes gelatinous in consistence. The bandage is completely elastic and doesn’t change its consistency even after the application to the oral tissue, which prevents the occurrence of mechanical injury or ulceration and prevents and inadequate blood supply of marginal gingiva and papilla due to mechanical pressure. It adheres to the oral tissues, even on wet and bloody surfaces and remains on the surface for more than 30 hours, ensuring complete protection of the area. The healing process is accelerated because it is not impeded by the movement of the tongue and food residues. It adheres well to the teeth, bone surfaces, prosthetic restorations and sutures. There is no need to remove it, it resolves within three days, depending on exposure, without leaving any residue on the tissue (it doesn’t stick to the sutures). In clinical practice usually one single application of the material is sufficient to cover the wound with a fibrin. In complicated cases, where the period of the healing is too short, it is necessary to repeat the application with a new bandage. Reso-Pac can be used as a carrier for the medication (antiseptic, antibiotic), haemostatic preparations and fluoride, thus it is essential to aid in implant dentistry, prosthetic dentistry and periodontology.

Wounds in the oral cavity are characterised by an extremely well-healing property and self-recovering (self-healing). Aside from that, some circumstances require the isolation of intraoral wounds from the environment of the oral cavity and the presence of microbial colonisation. The range of these clinical indications is wide, ranging from simple tooth extraction, to the open flap surgery, and covering and stabilisation of the sutures. The same requirements are applied for the treatment of ulcerative gingivitis and peri-implantitis, using medical preparations on periodontal bandage as a carrier.

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The wide spectrum of indications of Reso-Pac periodontal bandage:

1. Extraction wounds in cases of heavy smokers, hemorrhagic diathesis and the necessity of isolation postextraction socket
2. Additional protection of intraoral wounds by patients with hemorrhagic diathesis
3. Protection of sutures (e.g. in case of closure of oro-antral communication or after surgical closure of oro-antral fistula)
4. Protection of the marginal periodontium after marginal gingivectomy
5. Adaptation of the gingiva after raising the flaps
6. Sealing the deep periodontal cutretage
7. Therapy of gingivitis, gingival pockets and peri-implantitis in combination with appropriate medication
8. Therapy of hypersensitivity of cervical part of the tooth in combination with fluoride
9. Protection of the cervical part of the tooth after fluoridation
10. Covering the sides of intraoral soft tissue grafts
11. Immediate temporary relining of dentures
12. Covering the corticotomy surgical area
13. Protection of exposed autologous bone tissue grafts, the bone substitutes or membrane after sutures dehiscence.

Case Study
A 25 year-old patient after a vertical root fracture of the upper left central incisor. A dental implant was placed immediately. Three months later the patient was unsatisfied with the function and aesthetic appearance. A bone defect remained, which corresponded to class V according to Schärer’s and Fehér’s classification from 1999. The indication for taking intraoral autologous bone graft from the retromolar area was set. The gaps around were filled with autologous bone chips and xenogenic bone substitute. The augmented area was covered with a resorbable collagen membrane. On the third postoperative day initial dehiscence of the soft tissue was observed on the palatal side, and the vestibular projection marginal third of the bone graft. On the seventh postoperative day the sutures were removed. During the next day’s clinical follow-up, postoperative dehiscence area was found to be significantly higher and therapy with oxygen was performed. The next 7 days the oxygen therapy was applied daily, but there was no healing of the exposed area. On the fourteenth postoperative day the Reso-Pac periodontal bandage was applied for the first time, and it was repeated every 2 days through the next ten days, followed by complete closure and epithelisation of the postoperative area, after setting the temporary restoration without functional load.
Figure 7: The appearance of the wound during the first postoperative day.

Figure 8: Third postoperative day.

Figure 9: Extensive areas of postoperative dehiscence after removal of the sutures.

Figure 10: Application of the Reso-Pac periodontal bandage, 14th postoperative day.

Figure 11 and 12: Epithelisation and closure of the postoperative area.

Figure 13: The appearance of the area on the eighth postoperative day after the application of the Reso-Pac periodontal bandage.

Figure 14: On the tenth day after setting the bandage, a temporary restoration.

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