



## Why Need Periodontal Dressing (What All Options Available)

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### Abstract

Periodontal pack is a surgical dressing used to cover surgical site to prevent from any infections. Periodontal dressings, also known as periodontal packs, provide similar benefits when applied after periodontal surgical procedures. Still there are many controversies whether to pack or not pack. We have available pack in Eugenol, Non Eugenol, light cure and others. In this article we see why we need perio pack and all options available.

**Keywords:** Eugenol Pack; Noneugenol Pack; Periodontal Dressing; Periodontal Pack

### Introduction

Periodontal dressing is a surgical dressing used post operatively to cover and protect the surface of surgical wound created by periodontal therapy. The sequelae of periodontal surgery are commonly pain, swelling, inflammation and bleeding and thus, many periodontists advocate that some form of protection should be applied over the injured tissue so that the affected area is shielded from further insult [1]. Prior to introduction of the first periodontal pack by Dr. AW Ward in 1923, surgical eradication of periodontal disease was accompanied by the undesirable sequelae like pain, hemorrhage, unsatisfactory control of granulation tissue and sloughing.

In some cases, use of periodontal dressing is really beneficial. Protecting the wound from mechanical trauma and stability of the surgical site during the healing process are among the most important advantages of periodontal dressing application after surgery [2,3]. Other advantages include: patient comfort during tissue healing after surgery, good adaptation to underlying gingival and bone tissue, prevention of post-operative hemorrhage or infection, decreasing tooth hypersensitivity in the first hours after surgery, protecting the clot from the forces applied during speak-

ing or chewing, preventing gingival detachment from the root surface [4], prevention of coronal flap displacement in apically repositioned flaps, providing additional support in free gingival grafts, and the last but not the least protection of denuded bone during the healing process and splinting of mobile teeth after surgery. In non-surgical procedures, use of periodontal dressing can be helpful in aggressive periodontitis patients [5].

### Ideal requisites of periodontal dressings

- Soft, but still have enough plasticity and flexibility to facilitate its placement in the operated area and to allow proper adaptation.
- Set within a reasonable time.
- Sufficient rigidity to prevent fracture and dislocation.
- Smooth surface after setting to prevent irritation to the cheeks and lips.
- Bactericidal properties to prevent excessive plaque formation.
- Not interfere with healing.
- Dimensional stability to prevent salivary leakage.

- Not induce possible systemic detrimental effects and allergic reactions.
- Acceptable taste.
- Economical and easily available.

### Rationale for usage of periodontal dressings

- Protection of the wound area.
- Enhancement of patient comfort.
- Maintenance of a debris free area.
- Control of bleeding: from trauma.
- Periodontal dressings also protect newly exposed root surfaces from temperature changes and protect sutures.
- Protects surgical healing areas from irritants such as hot or spicy foods.

### Physical and mechanical properties

Only a limited number of studies have evaluated the physical and mechanical properties of periodontal dressings. These properties depend on the composition of periodontal dressing. To date, there is no exact and standardized reproducible technique to evaluate these properties. In addition, regarding new periodontal dressings, there is not sufficient research available. Periodontal dressing material should be slow setting to allow manipulation and to create a smooth surface causing no irritation, should be flexible enough to withstand distortion and displacement, should be adhesive and coherent without being bulky, and must have dimensional stability to prevent salivary leakage and plaque accumulation [6,7]. Evaluation of physical properties is valuable because these properties can affect the material's clinical behavior, including its adaptation to the underlying tissues, which is directly related to dimensional changes and its adhesion properties to gingiva and tooth [8]. Assessment of dimensional changes is also beneficial because improved adaptation (less dimensional changes) decreases the accumulation of plaque under the dressing.

Gjerdet evaluated the dimensional changes of three currently available periodontal dressings after setting (Coe-Pak, Ward's Wondrpak and Peripac).

All the dressings showed contraction during the first minutes after completion of their setting. This contraction culminated in Peripac at approximately 40 minutes and after about 2.5 hours the

dressing exhibited expansion; however, the contraction continued at a slower pace in other products. Thus, greater dimensional changes that occur in Peripac can be harmful, leading to the distortion of surgical area [8,9].

The dimensional changes of Coe-pak, Ward's Wondrpak and Coe-Pak Hard and Fast Set periodontal dressings were evaluated in another study. As expected, contraction occurred in three materials after mixing but it was more significant in Ward's Wondrpak than in other products and continued for 24 hours [10]. Another physical property evaluated in the study mentioned above was working and setting times. Working and setting times differ based on the composition of the dressing, and have been assessed in a limited number of studies. This study showed that Ward's Wondrpak had a significantly longer working time than the other two products, but no significant differences were found between the two CoePak products. Setting time of Ward's Wondrpak under oral conditions was 24 minutes which was shown to be less than its working time under room conditions because both heat and moisture accelerate the reaction of ZOE.

Another physical property evaluated in studies was the adhesive rate of periodontal dressing to both gingiva and tooth. This property is especially important considering its role in prevention of microbial penetration. Studies have used two methods to increase the retention of periodontal dressings [11,12]. The first method is by application of dressing into interdental spaces to physically increase retention.

By doing so, a rigid material is formed around the teeth after the completion of setting. Different means have also been described in studies to enhance retention such as wire, dental floss, acrylic compound, copper band, tin foil, etc. [12-14]. However, these tools have been shown to result in weaknesses, leading to the failure of the dressing instead of fortifying it. The retention by splint and stent is like the other devices used. Ideally, the dressing should be sufficiently retentive without the need for additional devices [15,16]. Different investigators have evaluated the adhesion properties of periodontal dressing by tensile and shear strength assessment.

Goldman and Cohen (1973) emphasized the need for a rigid and secure periodontal dressing with good adhesive properties [17]. They pointed out that this property would be achieved by adding polyacrylic acid and cyanoacrylate to the dressing material composition [18].

Some studies have introduced new periodontal dressings like quaternary aluminum borate cement, suggesting that this material is worthy of investigation as a potential dressing material after the assessment of its tensile and shear strengths [19]. Several researchers have used cyanoacrylate without suturing and have protected the wound from bacterial invasion [20].

In a comparative study, adhesive strength of various dressings to tissue (Coe-Pak Hard and Fast Set, Coe-Pak, and Ward's Wondrpak) was evaluated. In Ward's Wondrpak, shear and tensile adhesive bond strength to enamel was significantly less than the other product. In another study, adhesive properties of different dressings to enamel were evaluated (Coe-Pak, Peripac and Peripac Improved) and the three materials were found to have poor adhesive properties; however, Coe-Pak showed higher adhesive properties.

### Clinical studies

Surgical area is covered with periodontal dressing for 3 - 14 days following periodontal surgery whenever necessary. It has been reported that the dressing accelerates the healing process, but a general consensus has not been reached on the necessity of application of periodontal dressing on periodontal wounds. In a study, it was concluded that dressing per se can cause little damage to the normal periodontium, but in the long term, inflammation increases because of plaque accumulation under the dressing [21]. Assessment of plaque indexes after the application of dressing, apart from the surgical technique, revealed no significant differences between the test and the control groups [22,23].

Less plaque accumulation was observed when a light-cured periodontal dressing (Barricaid) was used, but no differences were found in clinical indexes [27]. Barricaid has been used in specific surgical and orthodontic procedures as well [24,25].

Another study evaluated clinical indexes after reversed bevel flap and found no significant differences in gingival fluid assessment among groups.

However, the situation was reversed for gingival index assessment. On day 7, the undressed area showed more bleeding and sensitivity.

It seems regarding the differences in the method of clinical studies evaluation of the definite effect of periodontal dressings on the clinical indexes is not possible. Overall, there were no statistically significant differences in clinical indexes.

The effect of periodontal dressing on pain and the amount of analgesics taken by the patient is another factor that has been evalu-

ated in the literature. In a study on the amount of analgesics taken by the patients, apart from the surgical technique, no statistically significant differences were detected in this respect between the dressing and non-dressing groups [26]; however, no other study has confirmed this result [27]. Haugan., *et al.* compared Peripac with another commercially available dressing and reported that patients in the Peripac group showed significantly more pain, swelling, and inflammation [28], but no significant differences were detected in this respect in some other studies.

In another study on pain severity after gingivectomy, two periodontal dressings (Coe-Pak, Ward's Wondrpak) and different local anesthetic agents were compared. They showed that the local anesthetic combination of lidocaine-adrenalin (1:80,000) results in a higher mean post-operative pain experience after gingivectomy. Eugenol present in Wondrpak is responsible for less pain experience reported in this group due to its analgesic properties.

Haugan., *et al.* (1973) evaluated three periodontal dressings (Coe-Pak, Peripac, Ward's Wondrpak) in terms of pain, swelling, bleeding and use of analgesics in patients. These criteria were higher in Peripac group, but no statistically significant differences were reported in another clinical study. Greater pain experience in the test group (with dressing) seems to be due to plaque accumulation under periodontal dressing and subsequent microbial invasion. As a result, reduction of microbial contamination can lead to wound healing and less pain [29].

In addition, better wound healing has been reported after using chlorhexidine in periodontal dressings [30]. However, Peripac had no antibacterial effect on salivary bacteria after setting. Clinically visible plaque accumulations under the dressing has been reported by numerous researchers. The present inflammatory reaction can be explained by the presence of microorganisms, and physical and chemical properties of dressing are important as well.

### Biocompatibility of periodontal dressings

A wide range of materials are used in dentistry that can cause allergic reactions in the oral cavity, although due to the presence of saliva and the vascularization of the oral mucosa, prevalence of allergic reactions in the oral cavity is less than that on the skin. Contact stomatitis as the result of application of periodontal dressing has been frequently reported in the literature. Some in vitro tests have been introduced to evaluate the cytotoxicity of dressings by cell media. Implantation tests have also been used to assess local cytotoxicity. Many cells from human and animals have been used to monitor the cytotoxicity of dressings (Figure 2).

### Therapeutic effects of periodontal dressings

Previously, periodontal dressings used to be applied to cause gingival shrinkage in cases where surgery was medically or psychologically inadvisable. Also, Orban (1943) described a technique of chemosurgery by using paraformaldehyde in a dressing.

Thus, the therapeutic effects of substances used in the composition of dressings after periodontal surgery has been the aim of numerous investigations.

These materials are classified into two categories:

- Agents with effects on oral bacteria
- Agents with effects on periodontal tissues.

In this regard, several agents have been added to the composition of periodontal dressings such as: tetracycline, zinc bacitracin, non-eugenol phenol derivatives, chlorothymol, oil of bergamot and chlorhexidine. Steroids and Dilantin were also added to facilitate and accelerate tissue healing. It is important to note that chemical inactivation of the materials added may occur during the process.

In some limited research studies, surgical side effects, like root hypersensitivity, were also improved by adding some agents. Besides, new materials such as cyanoacrylate have been introduced as a substitute for periodontal dressing.



Figure 1: DR. A W Ward.



Figure 2: Coe pack.



Figure 3: Automix system.



Figure 4: Collagen dressing.



Figure 5: Barricaid.

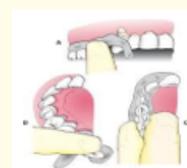


Figure 6: Zoe dressing.

### Periodontal dressing available

(Table 1)

### Periodontal dressings containing zinc oxide and eugenol

#### Ward's wondrpak

This product was marketed in the form of powder and liquid (the product is no longer produced commercially). The liquid contains eugenol, rose oil or peanut and resin. The powder contains zinc oxide, powdered resin and tannic acid. The powder and liquid are mixed on paper pad and then the prepared paste is used immediately or is wrapped in aluminum foil to be frozen for one week.

Sr. No.	Name	Type	Composition
1	Ward's Wondrpak	Eugenol dressing	Powder - zinc oxide, powdered pine resin, talc and asbestos Liquid - isopropyl alcohol 10%, clove oil, pine resin, pine oil, peanut oil, camphor and coloring materials
2	Kirkland formula	Eugenol dressing	Zinc oxide, resin, zinc acetate, eugenol, tannic acid and olive oil.
3	Coe-Pak	Noneugenol dressing	Two pastes First paste - zinc oxide, added oils, gums and lorothidol Second paste - unsaturated fatty acids and chlorothymol
4	Cross Pack	Noneugenol dressing	Colophony powder, zinc oxide, tannic acid bentonite and powdered neomycin sulphate
5	Peripac	Noneugenol dressing	Calcium sulphate, zinc oxide, zinc sulphate, acrylic type of resin and glycol solvent
6	Septopak	Noneugenol dressing	Amyl acetate, dibutyl phthalate, butyl polymetacrylate, zinc oxide, zinc sulphate
7	PerioCare	Noneugenol dressing	Two pastes First paste - paste of metal oxides in vegetable oil Second paste - gel of rosin suspended in fatty acids
8	Perio Putty	Noneugenol dressing	Methylparabens, propylparabens, benzocaine
9	Periogenix™	Noneugenol dressing	Perfluorodecalin, purified water, glycerin, hydrogenated phosphatidylcholine, cetearyl alcohol, polysorbate 60, tocopheryl acetate, benzyl alcohol, methylparaben, propylparaben, and oxygen
10	Cyanoacrylate dressings	Other	n-Butyl cyanoacrylate
11	Light cure dressings	Other	Silicon dioxide crystalline - quartz, hydrophobic amorphous fumed silica, urethane dimethacrylate resin
12	Collagen dressing	Other	Type I collagen derived from bovine tendon mixed with cancellous granules
13	Stomato adhesive dressing	Other	Gelatin, pectin, sodium carboxymethylcellulose and polysio polysio-butylene

**Table 1:** Name, type and composition of each commercially available dressing.

### Periodontal dressings containing zinc oxide without eugenol

#### Coe-Pak

The reaction between a metallic oxide and fatty acids is the basis for Coe-Pak (De Trey/Denstply, Konstanz, Germany). It is supplied in two tubes, the contents of which are mixed immediately before use. One tube contains zinc oxide, oil, a gum and lorothidol. The other tube contains liquid coconut fatty acids thickened with colophony resin and chlorothymol.

#### PeriPac

PeriPac (GC America Inc., Chicago, USA) is supplied as one paste, and is composed of calcium sulfate, zinc sulfate, zinc oxide, polymethylmethacrylate, dimethoxytetra-ethylene glycol, ascorbic acid, flavor and iron-oxide pigment. To use this material, a small quantity should be taken from the jar with a dry sterile spatula and deposited on a paper napkin. Medications in powder form can be added if desired. Hardening of PeriPac begins as soon as it comes

into contact with water and is complete in about 20 minutes. Application of the dressing should not take more than 2-3 minutes. A correctly applied dressing remains with no change for 8-10 days. One advantage of this material is to treat necrotic gingivitis. In such cases an antibiotic powder should be added by rolling it into the material on the paper napkin. The dressing keeps the medicament in contact with the ulcerated area. Protection of nonspecific lesions or sutured margins, fixation of dressing medicaments to cervical area and temporary rebasing of immediate dentures in periodontal surgery are among other indications of this paste.

### Vocopac

Vocopac (Voco, Cuxhaven, Germany) is supplied as two pastes (base and catalyst) that cure chemically. This material remains elastic in the patient's mouth and is not brittle. Vocopac contains purified colophonium, zinc oxide, zinc acetate, magnesium oxide, fatty acids, natural resin and natural oils and colorants. Its use is contraindicated in patients who are allergic to these ingredients and contact with the bone should be avoided as well. Slight discoloration of synthetic materials may also occur.

### Septo pack

This product (Septodont, saint-maur-des-fosses cedex, France) is supplied in 60-g jars. The composition of this product includes amyl acetate, dibutyl phthalate (10 - 25%), methyl polymethacrylate, zinc oxide (20 - 50%) and zinc sulfate (2.5 - 10%). This product is a self-setting plastic paste containing fibers in its mass. Working time in the mouth is only 2 or 3 minutes following application. Setting time is about 30 minutes.

This product contains dibutyl phthalate which is very toxic to aquatic organisms. This product may harm the eyes in an unborn child and has possible risk of impaired fertility. Therefore, protective clothing, gloves and respiratory equipment are mandatory.

### Periocarea

This product (Voco, Cuxhaven, Germany) is supplied in two tubes (paste and gel). Equal amounts of paste and gel must be mixed on the mixing pad until the color becomes uniform. Setting time of this product is 45-60 seconds and the working time is 4 - 5 minutes.

### Periodontal dressings containing neither zinc oxide nor eugenol

This group includes cellulose-based periodontal dressings like Reso-pac and Mucotect.

### Reso-pac

This product (Hager and Werken Gm bH and Co. KG, Postfach, Germany) is supplied as one hydrophilic paste and is ready for use without mixing. This dressing remains in place for up to 30 hours, even on bleeding wounds, because of its hydrophilic properties. Reso pac swells up to a gel-like consistency after about 3 minutes.

### Mucotect

This product (Hager and Werken Gm bH and Co. KG, Germany) is supplied in one tube and contains carboxymethyl cellulose, polyvinyl acetate, ethyl alcohol, vaseline and polyethylene oxide resin. Mucotect is a hydrophilic paste and adheres to the area for up to 30 hours. Due to its composition, it adheres very well to damp and even bleeding areas.

### Barricaid

Barricaid (Pupdent, watertown, USA) is available in a syringe for direct placement. The syringe is also suitable for an alternate indirect technique. A visible light-curing unit is required for the setting of this dressing. This product has a translucent character which provides superior esthetics. Barricaid is mainly composed of polyether dimethacrylate, silanized silica, accelerator, VLC photoinitiator and colorant.

### Periodontal dressings for all?

Having discussed at length the biologic and therapeutic benefits of a periodontal dressing, the question of whether we need to use a dressing for all surgical procedures remains open. The fact that complete healing can take place even without a dressing, provided the surgical area is kept clean, and that there is no difference in healing between dressed and nondressed wounds, lends support to the theory that not all surgical areas need to be "packed". Other factors such as the presence of inflammation seemed to influence the rate of wound healing to a larger extent than the use of a dressing. A number of clinical trials have proposed that the use of a dressing accumulates plaque-causing inflammation irritates the healing tissues, produces transient bacteremia during postoperative dressing change and causes more pain and swelling but less sensitivity and difficulty in eating. Despite these drawbacks, it appears that healing is slightly more rapid in the dressed segments.

The use of periodontal dressings from the patients' preference and comfort point of view has also been elaborated. Conflicting reports exist in the literature, as these factors are based on patient responses and thus are not objectively evaluated, because of the

subjective criteria usually employed. The use of chlorhexidine mouth rinse instead of a dressing has been found to reduce post-operative plaque accumulation and surgical inflammation and is considered to be roughly equivalent to professional plaque control in postsurgical healing, thus providing a viable alternative regime for plaque control. Moreover, many patients experienced discomfort when a periodontal dressing was used and preferred to use a mouth rinse. Conversely, some patients exhibited a psychological feeling of protection and well-being when a periodontal dressing was put in place. The answer to this controversy, though still open to debate, is probably that the choice of use of a periodontal dressing is a matter of individual preference and the judgment of the operator. It is, however, prudent to use a dressing for stabilization of free gingival grafts and protection of donor site, retention of an apically positioned flap, protection of the denuded bone from further injury, protection of the graft site in periodontal regeneration and to facilitate retention of drugs delivered locally in the subgingival sites.

### No pack theory

No pack theory means without periodontal dressing, If without periodontal dressing on surgical site bleeding, swelling, pain, inflammation occurrence chances more.

So, advocate periodontal dressing.

### Conclusion

Physical properties, availability, biocompatibility and therapeutic effects of periodontal dressings were briefly discussed in this review article.

Use of periodontal dressings after surgery seems beneficial. But, it would be better to limit their application to specific cases; for example, their application is not necessary in undisplaced flaps where the flap returns to its previous position and gingival bleeding and root hypersensitivity are minimal.

Overall, when the advantages outweigh the disadvantages, application of periodontal dressing would be beneficial. Multiple factors are involved in selection of the dressing of choice, such as:

- Surgeon's aim of using periodontal dressing
- Required time for periodontal dressing to remain on the surgical area: long-term application of CoePak may increase its cytotoxic effects. Ward's Wondrpak is more cytotoxic than other products and Barricaid is cytocompatible when its polymerization is complete. It seems that cellulose-based periodontal dressings lead to less inflammatory reactions and are probably more acceptable by the patient.

- Dimensional changes: All dressings have weak adhesive properties. Thus, plaque accumulates under them and decelerates the healing process.

Based on the literature, Peripac and Ward's Wondrpak have the greatest dimensional changes, although the other dressings have not been thoroughly evaluated in this respect.

Choosing an optimal periodontal dressing is a difficult decision to make because they have to be compared under equal conditions.

In general, it seems that cellulose-based periodontal dressings can replace the traditional dressings. In terms of therapeutic effects, the expected success is not always achievable by changing the physical properties of therapeutic agents.

### Bibliography

1. Linghorne WJ and O'Connell DC. "The therapeutic properties of periodontal cement pack". *Journal of the Canadian Dental Association* 15.4 (1949): 199-205.
2. Muthukumarasamy Nazargi Mahabob. "Periodontal dressing: A Review". 1.1 (2012): 24-33.
3. Box HH and Ham AW. "Necrotic gingivitis: its histopathology and treatment with an adherent dressing". *Oral Health* 37 (1942): 721.
4. Bernier JL and Kaplan H. "The repair of gingival tissue after surgical intervention". *Journal of the American Dental Association* 35 (1947): 697.
5. K David and Shetty Neetha. "Periodontal dressings: An informed view". *Journal of Pharmaceutical and Biomedical Sciences* 26.26 (2016): 269-272.
6. Haugen E., et al. "Methods for evaluation of working and setting times of periodontal dressings". *Acta Odontologica Scandinavica* 37 (1979): 309-315.
7. Raben MP, et al. "Healing of periodontal therapy". In: Goldman HM, Cohen DW, eds. *Periodontal Therapy*, 6th ed. St. Louis: C.V. Mosby Co (1980): 646.
8. Bhaskar SN, et al. "Oral surgery—oral pathology conference No. 18, Walter Reed Army Medical Center. Application of a new chemical adhesive in periodontic and oral surgery". *Oral Surgery, Oral Medicine, Oral Pathology* 22 (1966): 526-535.
9. Gjerdet NR and Haugen E. "Dimensional changes of periodontal dressings". *Journal of Dental Research* 56 (1977): 1507-1510.
10. Rubinoff CH, et al. "Physical properties of periodontal dressing materials". *Journal of Oral Rehabilitation* 13 (1986): 575-586.

11. Addy M and Douglas WH. "A chlorhexidine-containing methacrylic gel as a periodontal dressing". *Journal of Periodontology* 46 (1975): 465-468.
12. Hirschfeld AS and Wassermen BH. "Retention of periodontal packs". *Journal of Periodontology* 29 (1958): 199-204.
13. Eslami and Van Swol RL. "Use of a copper band to enhance the retention of periodontal dressing on solitary teeth". *International Journal of Periodontics and Restorative Dentistry* 9 (1989): 376-381.
14. Glendinning DE. "A method for retention of the periodontal pack". *Journal of Periodontology* 47 (1976): 236-237.
15. Ariaudo AA and Tyrrell HA. "Repositioning and increasing the zone of attached gingiva". *Journal of Periodontology* 28 (1957): 106-110.
16. Watts TL and Combe EC. "Periodontal dressing materials". *Journal of Clinical Periodontology* 6 (1979): 3-14.
17. Trevor LP, et al. "Adhesion of periodontal dressing to enamel invitro". *Journal of Clinical Periodontology* 7 (1980): 62-65.
18. Watts TL, et al. "Initial physical tests of aluminoborate cements in the context of periodontal dressing development". *Journal of Oral Rehabilitation* 10 (1983): 393-398.
19. Sachs HA, et al. "Current status of periodontal dressings". *Journal of Periodontology* 55 (1984): 689-696.
20. Heaney TG and Appleton J. "The effect of periodontal dressings on the healthy periodontium". *Journal of Clinical Periodontology* 3 (1976): 66-76.
21. Sodek J and Limeback HF. "Comparison of the rates of synthesis, conversion, and maturation of type I and type III collagens in rat periodontal tissues". *Journal of Biological Chemistry* 254 (1979): 10496-502.
22. Addy M and Dolby AE. "The use of chlorhexidine mouthwash compared with a periodontal dressing following the gingivectomy procedure". *Journal of Clinical Periodontology* 3 (1976): 59-65.
23. Richard S, et al. "Light cured periodontal dressing: a clinical evaluation". *Journal of Dental Research* 68 (1989): 1824.
24. Su R, et al. "The cytotoxicity of Sne-Pack periodontal dressing and scanning electron microscopic study". *Shanghai Kou Qiang Yi Xue* 2 (1993): 80-83.
25. Ferguson JW. "The use of visible light cured periodontal dressing after surgical exposure of palatal canines". *Dental Update* 19 (1992): 380-384.
26. Checchi L and Trombelli L. "Postoperative pain and discomfort with and without periodontal dressing in conjunction with 0.2% chlorhexidine mouthwash after apically positioned flap procedure". *Journal of Periodontology* 64 (1993): 1238-1242.
27. Jorkkjend L and Skoglund LA. "Effect of non-eugenol- and eugenol-containing periodontal dressings on the incidence and severity of pain after periodontal soft tissue surgery". *Journal of Clinical Periodontology* 17 (1990): 341-344.
28. Haugen E and Gjermo P. "Clinical assessment of periodontal dressings". *Journal of Clinical Periodontology* 5 (1978): 50-58.
29. Kidd EA, Wade AB. "Penicillin control of swelling and pain after periodontal osseous surgery". *Journal of Clinical Periodontology* 1 (1974): 52-57.
30. Asboe-Jorgensen V, et al. "Effect of a chlorhexidine dressing on the healing after periodontal surgery". *Journal of Periodontology* 45 (1974): 13-17.

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