A novel device to enhance soft tissue healing

Clinical applications of PerioZone PerioPatch in a variety of cases.

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AT A GLANCE

1. Pre-operative aspect of inflamed buccal gingival tissues, in spite of proper oral hygiene, during orthodontic treatment (Fig. 1). PerioPatch applied on the inflamed gingival tissues (Fig. 2). Reduced clinical signs of inflammation can be appreciated already after 2 days of PerioPatch application (Fig. 3).

THE TAKE-AWAYS
- PerioPatch can provide relief and promote healing in a variety of cases.
- The physical barrier created by PerioPatch absorbs wound exudates and protects the

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Patients often experience oral inflammation. It may be caused by self-induced trauma or the inflammation may be in an area that must heal following a dental procedure. MIS Implants Technologies’ PeriZone PerioPatch acts as a barrier while it provides relief and absorbs excess wound exudates to promote healing.

The patch is a Class I medical device consisting of two layers: the outer backing and the gel layers. Both layers provide protection from irritation that can occur from eating and speaking.

The following article indicates clinical applications using PerioPatch for a variety of cases.

PerioPatch (Izuun Pharma Ltd., Jerusalem, Israel) is a topical hydrogel patch that adheres and immediately conforms to the shape of the soft tissues. The physical barrier created by PerioPatch absorbs wound exudates and protects the oral mucosa from trauma and possible irritants that could aggravate the wound, thus, improving patients’ comfort. This hydrogel patch is composed of an absorptive polymeric matrix based on natural plant extracts. Its ingredients are ingestible, and therefore, there is no risk if any part of the patch is swallowed.

Due to its herbal components, PerioPatch not only forms a protective seal over inflamed gingiva and oral mucosa, but, at the same time, promotes natural healing and reduces the signs and symptoms of inflammation with minimal side effects.
**Standard uses**

In clinical practice, for standard cases, the application of three PerioPatch within the first 24 hours followed by 2-3 additional days of maintenance usage applying 1 or 2 patches per day is recommended. After application, the outer backing of the PerioPatch will loosen and can be removed by the patient. The gel will remain in place and continue to provide protection for up to 6 hours.

Due to its easy application, this innovative medical therapeutic device presents versatile applications such as enhancing healing of all types of oral wounds, injuries and ulcerations of the gingival and oral mucosa, including stomatitis, minor chafing, traumatic ulcers, and lesions associated with dental procedures.

The purpose of the present report is to present several clinical applications in the oral cavity for this novel device including: symptomatic treatment of gingival inflammation, as well as gingival and oral mucosal ulcerations, following scaling and root planning procedures, and following periodontal and other dental procedures.

**Symptomatic relief of gingival inflammation**

Reduction of gingival inflammation not related to plaque accumulation may be rapidly achieved following PerioPatch application with the mentioned protocol (Figs. 1-3). In a double-blind, randomly controlled clinical trial in patients with moderate to severe gingivitis the PerioPatch, as a sole intervention, without any mechanical plaque debridement of the area, significantly reduced localized gingival inflammation. PerioPatch application appeared to be a safe and effective means of topically controlling gingival inflammation.

PerioPatch reduced the local inflammatory mediators, along with the crevicular fluid volume and improved inflammatory signs associated with gingivitis. Another valuable application is in cases presenting gingival inflammation due to manipulation during dental and implant rehabilitation procedures such as tooth and abutment preparation with subgingival margins impression taking and provisional crowns, where a rapid resolution of the inflammation is desired.

**Gingival and oral mucosa ulcerations**

PerioPatch application is appropriate for gingival and oral mucosal ulcerations such as aphthae, small soft tissue lacerations following dental treatment and other oral inflammatory lesions. In certain cases longer patch application periods may be needed until the complete lesion resolution is achieved (Figs. 4-8).

**Application following scaling and root planning procedures**

The main goal of scaling and root planning (SRP) procedures is the reduction of inflammation through elimination of bacterial contamination and calculus.
However, because this inflammation is due to a disease process, elevated levels of inflammatory collagenases have been shown to be present. PerioPatch in addition to SRP has been shown to reduce MMP-9 levels, compared to SRP alone.

Also, during this procedure certain laceration of the soft tissues usually occurs. PerioPatch application immediately after these procedures leads to a rapid reduction in clinical signs of inflammation, leading to better clinical results (Figs. 9-11). Inflammation is necessary for the effective defense against pathogens and to set in motion tissue repair following injury. Yet inflammation itself is the culprit in a wide variety of common diseases, among them rheumatoid arthritis, atherosclerosis, and others.

PerioPatch was shown to reduce inflammation when used in conjunction with conventional mechanical treatment. This improvement was significantly greater than that seen with conventional treatment alone (Figs. 12-15).

In a recent, unpublished study, PerioPatch was applied immediately following SRP treatment by the treating clinician, followed by two subsequent applications at eight-hour intervals by the patient, and re-evaluated 2-4 weeks later. On a separate visit, a similar area of gingival inflammation was identified on the contralateral side and treated with SRP alone, here too with re-assessment after 2-4 weeks.

The PerioPatch treated area showed significantly reduced inflammation and bleeding, as measured by gingival index (GI) and bleeding on probing (BOP). The areas treated with SRP alone showed improved as well, though this was significantly less pronounced, both with respect to GI and BOP.

Application after periodontal and other surgical oral procedures
In addition to reducing the signs and symptoms of inflammation, PerioPatch also assists in protecting and preventing the oral soft tissues from continued damage,
especially after surgical procedures. PerioPatch application following oral surgical procedures enhances soft tissue healing in addition to inflammation control.

PerioPatch application leads to a rapid reduction of localized pain and irritation which makes it useful for relieving acute and chronically inflamed soft tissues, or soothing the local trauma to the gingiva, often associated with surgical and periodontal oral treatments. PerioPatch may also be applied to improve soft tissue healing of surgical wounds in implant (Figs. 16-25) and periodontal (Figs. 26-37) procedures.

An interesting application for PerioPatch may be in dental implant guided bone regeneration procedures (Figs. 16-25). Primary soft tissue closure and maintenance are indispensable for the success of bone augmentation procedures with use of resorbable and non-resorbable barrier membranes.

Early exposure of these membranes leads to decreased bone regeneration. PerioPatch acts as a protective mechanical barrier, while at the same time reducing clinical signs of inflammation and enhancing soft tissue healing at the surgical site, therefore, reducing the possibility of detrimental soft tissue dehiscence over the barrier membranes.

![Image](image.png)

Figs. 16-25 Spect of implants placed in the maxilla, note large implant exposure commanding a bone augmentation procedure (Fig. 16). Bone augmentation was performed with Mineralized freezed dried bone allograft and BoneBone™ used as particle binder and covered with a collagen barrier membrane (Fig. 17). Primary soft tissue closure was achieved (Fig. 18). PerioPatch applied on the sutured area (Fig. 19). Aspect of the surgical wound following 2 days, note improved soft tissue healing (Fig. 20). Advanced soft tissue healing after 5 days (Fig. 21). Soft tissue aspect after 9 days, with almost complete healing of the surgical wound (Fig. 22). Aspect immediately after suture removal (Fig. 23). Aspect of the treated area, 5 months post implant placement with bone augmentation (Fig. 24). Note complete calcified tissue healing around the implants, compared to situation at the time of placement (Fig. 16) (Fig. 25).
The PeriZone PerioPatch is ideal for patients suffering from the following conditions:

- Irritated gums (such as immediately following SRP and other dental procedures), wounds, extractions, injuries, and ulcerations of the gingiva and oral mucosa
- Stomatitis, minor chafing and traumatic ulcers
- Abrasions caused by braces and dentures
- Minor burns caused by food or chemicals (i.e. bleaching)

As this article has showcased, PerioPatch, first placed by a clinician chairside, delivers optimal results in tissue healing in a variety of clinical cases.