

Recurrent Exfoliative Cheilitis Treated With a Particular Type of Ozonized Olive Oil (Ialozon): A Case Report

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Abstract

Case Report

Ozone is an unstable gas, used also in medicine especially for the treatment of microbial infections. Its antimicrobial action is due to damage to the cytoplasmic membrane, which affects our cells to a lesser extent because they are more resistant to oxidative damage. In vitro studies, they have observed its antibacterial action and its cytotoxicity comparing it with chlorhexidine. Topical ozone is most often used in the form of gas, diluted in aqueous solution and the form of ozonized oil in different fields of dentistry. The use of ozonated water for the treatment of oral infections is successfully documented in the literature, in periodontal disease, in orthodontic patients to reduce the bacteric load, and also against endodontic bacteria and for oral candidosis. The term cheilitis indicates inflammation of the lip and includes many types, it is difficult to define readily the precise type of cheilitis, but proper diagnostic procedures are necessary to determine the exact disease and the connection with systemic problems. Since the most frequent topical mode of ozone use in the dental field is ozonized water, and since olive oil has been used in literature for its regenerative properties on lesions such as mucositis and burning mouth syndrome. Therefore, we have used topical ozonized olive oil to treat a case of recurrent exfoliative cheilitis. By the second day of application, the lesion had completely healed. The employment of the ozonated oil could be a new frontier for the non-invasive treatment of erosive or exfoliative oral pathologies. This represents the first documented case in the scientific literature of successful treatment of recurrent exfoliative cheilitis with ozonized oil. Further studies are needed to confirm this preliminary result.

Keywords: Ozone Exfoliative Cheilitis Ozonized Olive Oil Ialozon.

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INTRODUCTION

Ozone is an unstable gas, used also in medicine especially for the treatment of microbial infections. It can be used in the form of gas, diluted in aqueous solution and in the form of ozonized oil [1]. Its antimicrobial action is due to damage to the cytoplasmic membrane, which affects our cells to a lesser extent because they are more resistant to oxidative damage. For these reasons, it has also been proposed in different fields of dentistry [1]. Topical ozone is most often used in the form of ozonated water. The use of ozonated water for the treatment of oral infections is successfully documented in the literature, in periodontal disease, in orthodontic patients to reduce the bacteric load, and also against endodontic bacteria (*Streptococcus Mutans*, *Enterococcus Faecalis*) and for oral candidosis [2-4]. Some authors proposed it also for cosmetic dentistry [5].

Some researchers have proposed the use of ozonated olive oil in periodontology. In fact, through in vitro studies they have observed its antibacterial action and its cytotoxicity comparing it with chlorhexidine [6, 7]. In a recent study, Brazilian researchers had evaluated the use of different types of ozonized oils for endodontic medication, such as sunflowers, castor, olive and almond oil. In reaction to oils, explained the authors, ozone breaks the double bonds between carbon atoms of lipid molecules, resulting in unsaturated molecules that produce different toxic products such as ketones and aldehydes and among these, the formaldehyde [8].

The term cheilitis indicates inflammation of the lip and includes many types. In practice, it is difficult to define readily the precise type of cheilitis, but proper diagnostic procedures are necessary to determine the exact disease and the connection with

systemic problems, such as iron and vitamin B deficiency, viral and fungal infections, autoimmune disorders [9]. Recent review authors proposed a classification based on primary differences in the duration and aetiology of individual groups of cheilitis. We can have mainly reversible cheiloses (simplex, angular/infective, contact/eczematous, exfoliative, drug-related); mainly irreversible cheilitis (actinic, granulomatous, glandular, plasma cell); and cheilitis connected to dermatoses and systemic diseases (lupus, lichen planus, pemphigus/pemphigoid group, angioedema, xerostomia, etc.) [8].

Another entity described in the literature is factitial or factitious cheilitis. It is a diagnosis of exclusion that often presents in young women with a history of psychiatric illness. Factitial cheilitis can present as exfoliative cheilitis and the differential diagnosis is very important to avoid unnecessary biopsy [10].

Therapy for exfoliative cheilitis includes topical corticosteroids, topical calcineurin inhibitor, topical *Calendula officinalis* L. Occasionally, lesions resolve spontaneously [9].



Fig-1: Casu, Mannu, Viganò

In this case report, we would like to report a case of recurrent exfoliative cheilitis treated with topical ozonized olive oil.

CASE REPORT

A 32-year-old woman came to our observation due to a strong burning and swelling of the upper lip (fig 1). She presented good general health and excellent oral condition. The patient declared that several times she have had this condition in recent years, coinciding with stressful events or menstrual cycle. On the objective examination, the upper lip appeared erythematous, swollen, with small radial cuts due to the distension of the mucous membranes during the use of facial mimic muscles. Even small crusts were present. The patient reported that smiling caused further micro-cuts and bleeding. A diagnosis of exfoliative cheilitis was made. It was decided to prescribe the application of an ointment with ozonized olive oil (Ialozon, Gemavip, Cagliari, Italy) twice a day for 3-4 days. Each dose of 1 ml of ointment was spread on the surface of the affected lip, leaving it to act for at least an hour. By the second day of application the lesion had completely healed (fig 2).



Fig-2: Casu, Mannu, Viganò

DISCUSSION

The most frequent topical mode of use of ozone in the dental field is ozonated water [2-5]. In the gaseous state, it has been proposed for the treatment of canker sores and lichen planus [11,12]. However, the possibility of incorporating ozone particles and releasing them slowly seems to be possible only with ozonated oil. The latter has been proposed in a clinical trial for the treatment of various oral pathologies including candidiasis and the already mentioned canker sores and erosive lesions from lichen planus [13]. In this study 50 patients with aphthous ulcerations, herpes labialis, oral candidiasis, oral lichen planus, and angular cheilitis were enrolled. The ozonized olive oil was applied twice daily until the lesion regresses for a maximum of 6 months. Authors reported that all the lesions regress in patients with aphthous ulcerations, herpes labialis, oral candidiasis and angular cheilitis or

showed improvement in the signs and symptoms in oral lichen planus patients [13].

Previous works have shown that olive oil antimicrobial activity was lower in vitro than that of chlorhexidine but has much lower levels of cytotoxicity, resulting in an effective and much safer product [6,7].

The antimicrobial action of ozone therapy is due to damage to the cytoplasmic membrane but it also acts by intervening on the production of leukotrienes, prostaglandins and interleukins, determining a greater speed of healing. It is also able to improve the transport of oxygen in the bloodstream [1]. Olive oil was used in literature for its regenerative properties on lesions such as mucositis and burning mouth syndrome [14,15].

For these reasons ozonated oil could be a new frontier for the non-invasive treatment of erosive or

exfoliative oral pathologies. This represents the first documented case in the scientific literature of successful treatment of recurrent exfoliative cheilitis with ozonized oil. Further studies are needed to confirm this preliminary result.

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