

Can We Use Preprocedural Soaked Pledgets in Hydrogen Peroxide for Preventing SARS-CoV-2 Transmission During Nasal Interventions?

Burun Müdahaleleri Sırasında SARS-CoV-2 Bulaşını Önlemek İçin Hidrojen Peroksit Emdirilmiş Nazal Tamponlar Kullanılabilir mi?

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ABSTRACT During COVID-19 pandemic, the rhinologic procedures have been pointed out as risky because of spreading aerosols containing SARS-CoV-2 virus and many preventive measures including protective equipments, specific guidelines and work schedules have been recommended. In this paper, by giving a short review about its wide medical use and side effects and reporting my personal experience, I would like to point out the possibility of the use of hydrogen peroxide (H₂O₂)-3% via soaked pledgets just before minor surgical procedures and nasal endoscopy during the pandemic. H₂O₂-3% can be added to soaked pledgets as a mixture of H₂O₂-3%, local anesthetic and adrenalin, if necessary, and an experienced otolaryngologist can easily insert them into the nose without coming so close to the patient and without harming to the patient.

Keywords: COVID-19; SARS-CoV-2; hydrogen peroxide; disease transmission, infectious; otolaryngology

ÖZET COVID-19 salgını sırasında rinolojik müdahaleler, SARS-CoV-2 virüsünün yayma bağlamında, riskli girişimler olarak bildirilmiş olup korunma için kişisel koruyucu aletlerden özel uygulama rehberlerine ve çalışma düzenlerine kadar pek çok öneride bulunulmuştur. Bu yazıda; hidrojen peroksidin yaygın tıbbi kullanımı ve sınırı yan etkileri konusunda kısa bir bilimsel yazın derlemesi yapıp konuyla ilgili şahsi deneyim de sunularak salgın süresince nazal uygulamalar öncesinde buruna %3'lük hidrojen peroksit emdirilmiş tamponların yerleştirilmesinin, SARS-CoV-2 bulaşını önlemek için kullanılabileceği hususu dile getirilecektir. H₂O₂-3%, tamponlara H₂O₂-3%, lokal anestetik ve adrenalin karışımı olarak eklenebilir ve deneyimli bir kulak burun boğaz uzmanı, hastaya çok yaklaşımdan ve zarar vermeden kolayca burun içine sokabilir

Anahtar Kelimeler: COVID-19; SARS-CoV-2; hidrojen peroksit; hastalık geçişi, enfeksiyöz; otolaringoloji

As known, the rhinological procedures have been reported among the most risky interventions regarding transmission of SARS-CoV-2. Recently, van Gerven et al. published a critically beneficial paper pointing out recommendations for not only rhinologists but also general otolaryngologists, who faced with the need to perform urgent rhinological interventions for epistaxis, nasal fracture, etc. during the pandemics of COVID-19.¹ It is ap-

perant that otolaryngologists are used to face the patients with unknown SARS-CoV-2 status in daily practice.

To prevent dissemination of the virus to the physician, other health workers and subsequent patients, many recommendations including personal protective equipments, specific guidelines for the procedures and further work schedules have been published in not only rhinology but also in all fields

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Peer review under responsibility of Journal of Ear Nose Throat and Head Neck Surgery.

Received: 16 Jun 2020 **Accepted:** 16 Jun 2020 **Available online:** 17 Jun 2020

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of the otolaryngology. All of them totally cause a dramatic change in our professional life and work out the cost.^{1,2} Besides, for disinfection of the environment, the papers presented the chemicals which are efficient against SARS-CoV-2.³

Among these compounds, H₂O₂ appears to provide some additional options for prevention of dissemination of the SARS-CoV-2 during the nasal interventions.

In this paper, it is aimed to present the possible special use of H₂O₂ in otolaryngologic field, particularly during rhinological interventions.

SHORT REVIEW OF THE LITERATURE

It has been shown that H₂O₂ in 0.5% is very efficient in smooth disinfection against SARS-CoV-2² and also recommended be used for re-sterilization of medical masks such as N95 by vaporizing of H₂O₂.⁴ H₂O₂ is a well-known chemical compound commonly used for wound healing, mouth gargles in dentistry (3%) and cleaning of the contact lenses.⁵⁻⁸ Application of H₂O₂-3% to the external ear canal is recommended for the cleaning of cerumen.⁹ Besides, in the literature of otorhinolaryngology, the use of H₂O₂ mouth gargles in 3% after tonsillectomy, and care for transcolumellar suture lines in open septoplasty and rhinoplasty were also seen.^{10,11} Furthermore, orthopedic surgeons use H₂O₂ in implant surgery.¹²

In all of the applications mentioned above, H₂O₂ is mostly used due to both its anti-bacterial/-fungal/-viral effects in vitro and its alleged stimulating effect in the wound healing process. It should be underlined that the positive role of H₂O₂ on the healing process has been under discussion.^{5,6}

The reported complications and/or side effects of H₂O₂-3% were oxygen embolism in the orthopedic implant surgery, cervicofacial emphysema in the reported case using H₂O₂ mouth gargle just after tonsillectomy and esophageal and gastric burns due to its ingestion accidentally.^{10,12,13} Furthermore, inhalation of H₂O₂ in higher concentrations could cause some breathing difficulties, which were reported to be not life-threatening.¹⁴

H₂O₂ AND COVID-19

Ultimately, H₂O₂ solutions appear to be only chemical compounds which could be harmlessly used to the open surfaces of the head and neck region. Therefore, during the days of the SARS-CoV-2 pandemic, pre-procedural use of H₂O₂ mouth gargles-0.5-1% in the patients needing urgent dental care has been recommended.¹⁵ Besides, Caruso et al. suggest the use of H₂O₂-3% via nasal nebulizer 2 times a day and oral gargles 3 times a day in the positive subjects in-home quarantine or hospitalized subjects not requiring intensive care.¹⁶

PERSONAL EXPERIENCE OF SOAKED PLEDGETS IN H₂O₂-3%

Lastly, I also would like to mention my personal very previous experience in use of H₂O₂-3% in the subjects having long-lasting nasal package or those suffering from epistaxis, who were improperly tamponed before coming to the otolaryngology.

From 1987 to about 2000, I very often used soaked pledgets in a mixture of H₂O₂-3%, local anesthetic, and adrenalin before starting cleaning blood clots and scabs just after the previous nasal package was taken out. I clearly declare that it helped cleaning the nose by diminishing discomfort of the patient and certainly the time needed, and further, I could also say that it stopped minor bleeding and annoying smell which occurred just after removing the long-lasting nasal package. Although there is no paper for use of H₂O₂ in nasal bleeding in the literature, its anticoagulant effects has been shown.⁵

RECOMMENDATIONS

In the next days when we continue facing the patients with unknown SARS-CoV-2 status in daily practice, preprocedural use of H₂O₂-3% could be an easy, inexpensive and efficient option for otolaryngologists before nasal interventions.

H₂O₂-3% can be added to soaked pledgets in topical anesthetic and /or vasoconstrictor agent, and an experienced otolaryngologist can easily insert them into the nose without coming so close to the patient and without harming his/her. Placement of

soaked pledgets in H₂O₂-3% into the nasal cavity and even till the posterior choana, if possible, and keep them within the nose for a few minutes could help inactivation of the SARS-CoV-2, and hence diminishes transmission risk to the physicians during the following interventions. However, application via nebulizers should be avoided because of the risk of an increase in the production of aerosols, as pointed out by van Gerven et al.¹

Acknowledgements

I would like to thank to Assoc.Prof. Guven Mengü for English language editing.

Authorship Contribution

I affirm that the submission represents my original work.

Conflict of Interest

The author declare that he has no conflict of interest.

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