Cryogens in dentistry

Dear Editor,
This letter discusses the recent studies about cryogens in dentistry regarding management of oral mucosal lesions, keratocystic odontogenic tumors and gingival pigmentation.

Liquid nitrogen cryosurgery in the management of oral mucosal lesions[1]: The study with 30 patients was evaluated for the efficacy of cryosurgery in the management of oral mucosal lesions (mucocele, fibroma, leukoplakia, erythroplakia, and lichen planus). Time taken for healing, postoperative pain, secondary infection, and recurrence of lesion was calibrated. The patients were evaluated for pain and postoperative infection documented on the 1st, 3rd, 7th, 21st days after the procedure and other variables such as healing time and scarring assessed at the 21st day and recurrence of the lesion evaluated in the 3rd and 6th postoperative months. The pain and swelling was reduced during the 7th post-operative day and discomfort of the patient was relatively less. It was found that cryosurgery shown faster recovery and overall a better modality in the management of oral mucosal lesions.

Propane/butane/isobutane gas mixture cryosurgery in the management of keratocystic odontogenic tumors[2]: The outcome of enucleation followed by cryosurgery using a refrigerant spray with a propane/butane/isobutane gas mixture in 10 patients diagnosed with keratocystic odontogenic tumor was investigated. It was evident from the study that the management of keratocystic odontogenic tumor by complete enucleation followed by cryotherapy showed better repair and lower rates of recurrence even though wound dehiscence observed in all cases.

Tetrafluroethane cryosurgery superior to surgical scalpel technique in the management of gingival pigmentation: A randomized clinical study[3]: A randomized control split mouth study was conducted for 25 patients with gingival pigmentation using gingival pigmentation index for pigmentation and Visual Analoug Scale for pain for both case (cryosurgery) and control sites (scalpel technique) at baseline, 1, 3 and 6 months intervals. The recurrence rate for pigmentation was higher after scalpel technique. It was evident from the study that cryosurgery is a viable option for long-term results, patient acceptance and comfort compared to surgical scalpel technique.

Future directions: It is known that cryogen with a propane/butane/isobutane gas mixture is superior to liquid nitrogen in advantages such as easy to handle, providing better precision and lower risk of adjacent soft tissue injury.[2] Clinical trials with newer generation cryogens are advised in the management of oral mucosal lesions, keratocystic odontogenic tumors and gingival pigmentation.

Thorakkal Shamim*

Department of Dentistry, Government Taluk Head Quarters Hospital, Malappuram, India

*Correspondence to: Thorakkal Shamim, MDS, shamu3duad@gmail.com.
orcid: 0000-0002-6389-5417 (Thorakkal Shamim)
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References

1. Asrani S, Reddy PB, Dhirawani RB, Jain S, Pathak S, Asati P. Cryosurgery: a simple tool to address oral lesions. *Contemp Clin Dent.* 2018; 9:S17-22.
2. de Souza Cruz EL, da Silva Tabosa AK, Falcão AS, et al. Use of refrigerant spray of a propane/butane/isobutane gas mixture in the management of keratocystic odontogenic tumors: a preliminary study. *Oral Maxillofac Surg.* 2017;21:21-26.
3. Narayankar SD, Deshpande NC, Dave DH, Thakkar DJ. Comparative evaluation of gingival depigmentation by tetrafluroethane cryosurgery and surgical scalpel technique. A randomized clinical study. *Contemp Clin Dent.* 2017;8:90-95.

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