Sir,

Oral submucous fibrosis is an irreversible disease known to us for years. Despite this, the pathogenesis remains unclear, and in advanced cases, where surgery is the only solution, the long-term improvement in mouth opening is both limited in amount as well as is not stable even after surgery in all cases. The situation is especially worse when the disease is more evident in the posterior oropharynx region of hard and soft palate. It is usually noted that most of the patients who swallowed the juices or extract of the areca nut developed posterior oropharyngeal fibrosis [Figure 1], while the ones who used to spit the areca nut after chewing developed more of anterior cheek fibrosis.

Despite release of posterior fibrous bands, fibrosis still remains in the first group of patients in areas such as hard and soft palate and makes it difficult to achieve a minimum interincisal opening (IIO) of 35 mm on the table. Besides temporalis stripping and coronoidectomy, subperiosteal dissection in areas of masseter and medial pterygoid is, many a times, needed to achieve adequate IIO. This, however, increases the depth of the wound. Increase in depth necessitates adequate volume of tissue, so skin grafts or collagen membranes are unable to suffice as grafts. The use of a vascularized flap whenever possible is the ideal choice. Among locally available tissue for transfer nasolabial flap is considered superior over buccal fat pad for the same reason. In patients who do not agree for an extraoral scar on face, buccal fat pad may be used, and in that case, we prefer to place a chlorhexidine-impregnated paraffin gauze bolster dressing over it. This dressing not only helps in better adaptation of the flap to the base in the depth of the defect but also helps to lateralize it so that posterior teeth do not impinge on it [Figure 2]. It is secured with sutures and is removed after 48 h. Third molar removal is advised as a routine protocol during this surgery. However, in cases where achieving 35 mm of IIO was difficult because of extensive posterior fibrosis, second molars may also be removed, especially if inflicted with even minor dental disease. Otherwise, these second molars also impinge either on the graft/flap placed or on the newly formed mucosa. This injury again starts the cycle of inflammation followed by fibrous healing because such patients lack pliability of tissues in the posterior oropharynx.

In certain patients, there is significant circumoral fibrosis with even absence of anterior cheek fibrosis that impedes adequate mouth opening despite release of bands on the cheek. In these patients, technique of giving multiple small submucosal release incisions perpendicular to the direction of bands on rima oris can be done [Figure 3]. Postoperatively, our patients are subjected to structured rehabilitation protocol, which involves transcutaneous electrical nerve stimulation (TENS) therapy and cold and heat wave therapy with passive and active stretching mouth opening exercises. All the patients were initiated on a structured postoperative rehabilitation protocol, starting with cold compresses for initial 2 days three times daily for 10 min (intermittently), an active exercise regimen, and usage of physical modality TENS from day 2 postoperatively for 10 days. The exercise regimen included manual stretching of the involved muscles, temporomandibular...
joint mobilization exercises, orofacial massage, mouth opening exercises (manually and using jaw openers), and contract-relax, antagonist contract technique. After 2 days, heat wave therapy was also given. Patients are also advised to blow their cheeks as vertical improvement in mouth opening is achieved with exercise, but lack of suppleness and volume in cheek causes posterior teeth to impinge on the newly transforming cheek mucosa. For ulcerations and remnant fibrosis in the soft palate area, steroid as mouth gargles twice daily for 2 weeks followed by weekly intralesional (soft palate/retromandibular region) injection with fine insulin needles for 6 weeks can be done.

Despite all efforts, it is usually observed that the newly formed tissue lacks suppleness especially if grafts are used instead of a vascularized flap. Mucosalization of the graft produces a new tissue, which is itself fibrosed to a certain extent. This is indicative of an inherent predisposition toward fibrosis in this disease, which could be suggestive that the fibrosis has a genetic predisposition and is an immunologically modulated disease. This instigates us to explore other possible mechanisms in its pathophysiology. Until then, for better surgical results, a vascularized flap or a microvascular tissue transfer with minimal dependence on the local bed would be an ideal solution.

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Conflicts of interest
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Figure 3: Multiple small submucosal release incisions on rima oris

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