Dentoalveolar Surgery in Oral Submucous Fibrosis: Need for Caution

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Received: 19 March 2012 / Accepted: 26 June 2012 / Published online: 26 August 2012
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Abstract Performing exodontia in patients with the precancerous condition of oral submucous fibrosis is difficult but frequently necessary. There is mucositis and trismus, faulty wound healing and predisposition to infection. Exodontia and dentoalveolar surgery in these patients may result in distressing sequelae and diagnosis of any subsequent complications like space infection is difficult. Hence, these patients must be treated as a special care group and measures adopted to ease distress. Literature has been reviewed with an eye to understand the underlying nature of the disease and factors that contribute to these problems.

Keywords Exodontia · Oral submucous fibrosis · Trismus

Introduction

Oral submucous fibrosis (OSMF) is a precancerous condition of the oral cavity [1]. Although the causes of this disease and its treatment is the subject of many articles, a rarely stated aspect of the disease is its potential to cause distressing problems during and after dentoalveolar surgery.

In OSMF there is a chronic, insidious fibrotic change causing stiffening of oral mucosa, oropharynx and trismus. In advanced cases thick fibrotic bands extend from sub-epithelial connective tissue to muscle layer [2]. There is

poor microcirculation in affected tissue, hypercoagulability of blood and medical treatment for this condition is not standardized [3]. It has been suggested that OSMF represents an abnormal healing process to chronic irritation [4].

OSMF is not a condition restricted to members of specific communities or religious groups but it is seen mostly in Asians or Asians settled in other countries [5].

Patients with OSMF present for extraction of teeth due to poor periodontal health, caries, impacted third molars; patients with frank carcinoma may require tooth extractions prior to surgery or radiotherapy.

It must be understood that irritation of the inflamed and atrophic mucosa occurs during oral surgery. Preexisting trismus is exacerbated after exodontia. Hence patients become very distressed. To avoid and overcome these problems the following measures can be adopted:

Lubrication of Inflamed Mucosa

Circumlabbial bands cause narrowing of oral aperture, stiffness and discomfort during retraction of the corner of the mouth. A topical local anesthetic gel is applied to the lips, corner of the mouth and buccal mucosa to soothe irritation caused by instrument application. Repeated application of the topical anesthetic gel is required during the procedure.

Modification of Surgical Technique

Varying degrees of trismus occur due to fibrosis of tissues around the pterygomandibular raphe [6]. Any surgery in this location can result in an increased severity of trismus in the post-operative period.

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If there is pericoronitis of the third molar it becomes difficult for the clinician to attribute trismus solely to this cause and predict if extraction of the tooth would produce improvement in mouth opening. It may not. Hence, at the outset, any recommendation of tooth extraction must be made after careful consideration.

For extraction of mandibular third molars using a transalveolar technique, the flap design must be conservative without overextension of distal releasing incision. Tearing or shredding of flap, lingual gingiva, pterygomandibular raphe must be avoided. The wound healing mechanism of oral mucosa is faulty resulting in scarring and fibrosis [4]. Intra-alveolar extraction or ‘simple’ extraction of tooth also has to be performed with special care.

Need for Antibiotic Therapy?

In OSMF, there is mucosal atrophy and collagen deposition beneath the basement membrane. There is a decrease in ground substance, cellular elements and vascularity with increasing fibrosis [7]. Hence a deleterious effect on wound healing after dentoalveolar surgery is to be expected. Patients are unlikely to undertake extensive and scrupulous oral hygiene measures because of pain, trismus and mucosal irritation. This predisposes to wound infection.

We made a particular effort in our literature search to find reports to support our contention of increased wound infection. We found one report of *Candida albicans* cellulitis after local steroid injection in an OSMF patient [8]. This is unusual because *C. albicans* is a weak pathogen. The authors explained that there may have been subclinical *C. albicans* infection of buccal mucosa due to depression of local cell mediated immunity plus the pre-existing atrophic epithelium and decreased vascularity. The patient also had diabetes mellitus.

A masticatory space infection developing after exodontia is difficult to diagnose. Clinicians have to diagnose the condition based on non-specific features like pyrexia and raised white blood cell counts. Presence of trismus, alone, is non-indicative of infection.

An antibacterial oral rinse started 7 days prior to dentoalveolar surgery reduces microorganism load on oral mucosal surfaces [8]. We would, however, hesitate to propose a blanket use of systemic antibiotic therapy after dentoalveolar surgery.

Modification of Local Anesthesia Technique

The technique of local anesthesia for mandibular molar extractions also needs to be modified. Trismus disallows a

classic inferior alveolar nerve block. The Vazirani-Akinosi closed-mouth mandibular block is chosen [9]. In this technique, the needle insertion is into soft tissues over medial aspect of mandibular ramus. This keeps needle away from pterygomandibular raphe making it preferable even in the absence of severe trismus in OSMF patients. A post-injection trismus which may occur as a complication of a classic inferior alveolar nerve block could be very severe. Whatever the technique, though, needle insertion into stiff, inelastic mucosa is traumatic.

Post extraction instructions to the patients must emphasize the possibility of increased severity of trismus. Patients require careful follow-up and mouth opening exercises.

Patients with OSMF must be treated as a special care group and oral surgery in this group must be approached with caution.

Conflict of interest None.

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