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Iatrogenic Microstomia Following Surgical Management Of Oral Submucous Fibrosis: A Case Report

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Abstract:
Iatrogenic microstomia is an under-recognised yet debilitating complication following surgical management of advanced oral submucous fibrosis (OSMF), particularly when postoperative physiotherapy is inadequately followed. We report a case of a middle-aged male who developed severe microstomia after bilateral fibrotomy with buccal fat pad reconstruction due to poor compliance with postoperative rehabilitation. The patient presented with markedly restricted mouth opening, compromised oral hygiene, nutritional difficulties, and psychosocial distress. Surgical correction was achieved using bilateral commissuroplasty with a modified fishtail flap technique under local anaesthesia, followed by a structured physiotherapy protocol. Meaningful functional improvement was observed on follow-up. This case highlights the importance of sustained postoperative physiotherapy and long-term follow-up in maintaining surgical outcomes after OSMF surgery
Keywords: *Microstomia; Oral submucous fibrosis; Postoperative physiotherapy; Commissuroplasty*

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I. Introduction

Oral submucous fibrosis (OSMF) is a chronic, progressive, and potentially malignant disorder of the oral mucosa strongly associated with areca nut chewing and predominantly affecting populations in South and Southeast Asia[1,2]. Clinically, it presents with burning sensation, mucosal blanching, progressive fibrosis, and restricted mouth opening, leading to impairment of mastication, speech, and oral hygiene. Advanced stages of OSMF (Grade III and IV) frequently require surgical intervention such as fibrotomy with or without coronoidectomy, followed by reconstruction using interpositional grafts, including the buccal fat pad or regional flaps [3].

Although surgical release often results in immediate improvement in mouth opening, long-term functional success depends heavily on adherence to structured postoperative physiotherapy. Failure to comply with rehabilitation protocols may result in relapse, excessive perioral fibrosis, and occasionally iatrogenic microstomia. Microstomia, defined as pathological narrowing of the oral aperture and commissures, significantly compromises oral function and quality of life. This report presents a case of severe iatrogenic microstomia following OSMF surgery and emphasises the role of postoperative rehabilitation in preventing such complications.

II. Case Report

A man in his 40s with a history of areca nut chewing for over 20 years presented with severe restriction of mouth opening, difficulty in mastication and speech, and inability to maintain oral hygiene. The symptoms had progressively worsened over the previous year. There was no relevant personal or family history of systemic illness.

Clinical examination revealed pronounced perioral fibrosis and severe microstomia. The horizontal and vertical oral apertures measured approximately 20 mm and 10 mm, respectively, with a maximal interincisal opening of less than 5 mm, measured using a calibrated scale. Bilateral commissural contracture with lip retraction was evident, partially obscuring the anterior dentition. A traumatic ulcer measuring approximately 8 × 5 mm was noted on the lower lip due to contact with the opposing maxillary lateral incisor (Fig.1). Clinical signs of nutritional compromise, including mucosal pallor and generalised muscle wasting, were also present.

Medical records revealed that the patient had undergone bilateral fibrotomy with buccal fat pad grafting for Grade IV OSMF at a private facility approximately one year earlier. On detailed inquiry, it became evident that postoperative physiotherapy had neither been initiated nor followed as advised. A panoramic radiograph was obtained to exclude osseous causes of trismus and showed no evidence of temporomandibular

joint ankylosis or degenerative changes. Multiple grossly decayed teeth were noted. Medical evaluation excluded systemic conditions such as scleroderma.

After comprehensive counselling, the patient declined further extensive intraoral surgery. Therefore, bilateral commissuroplasty using a modified fishtail flap technique was planned under local anaesthesia. Neocommissures were marked approximately 1 cm lateral to the existing fibrotic commissures to maintain symmetry. Full-thickness fishtail-shaped incisions were made through the skin, vermilion, and mucosa, followed by adequate tissue mobilisation to recreate functional oral commissures. Layered closure was performed, and paraffin gauze dressings were placed bilaterally to prevent adhesion formation (Fig.2). A nasogastric tube was inserted intraoperatively to facilitate nutrition and minimize mechanical stress on the reconstructed commissures. Postoperative management included antibiotics, analgesics, chlorhexidine mouth rinse, and topical emollients. Structured physiotherapy was initiated on postoperative day three with supervised mouth-opening exercises, followed by passive commissural expansion from postoperative day seven.

Follow-up examinations were conducted regularly. Healing was uneventful, with no evidence of infection or wound dehiscence. By six weeks, the interincisal opening increased to 18 mm, reflecting adequate functional improvement (Fig.3).

III. Discussion

Oral submucous fibrosis is characterized by epithelial atrophy and dense subepithelial collagen deposition, resulting in reduced mucosal elasticity and progressive limitation of mouth opening[1]. While trismus is a well-recognized manifestation of advanced disease, microstomia due to commissural contracture is less frequently reported but carries significant functional and psychosocial morbidity. Surgical management of advanced OSMF commonly involves fibrotomy with interpositional grafting using the buccal fat pad because of its favorable vascularity and minimal donor-site morbidity[3-5]. However, long-term outcomes appear to be influenced by postoperative rehabilitation. Several studies have demonstrated that structured physiotherapy is associated with improved interincisal opening and reduced relapse rates, whereas poor compliance may lead to functional deterioration and recurrence[6-8].

In the present case, severe microstomia developed despite technically adequate surgery, suggesting that non-adherence to postoperative physiotherapy played a central role. This observation is consistent with published evidence indicating higher relapse rates and poorer outcomes in patients who discontinue or inadequately perform physiotherapy exercises[7,8]. The functional improvement observed following secondary commissuroplasty and strict rehabilitation further supports this association.

Surgical correction of microstomia typically requires commissuroplasty rather than intraoral fibrotomy alone. Fishtail flap commissuroplasty has been shown to provide reliable functional expansion of the oral aperture with acceptable aesthetic outcomes and minimal morbidity[9]. In this case, the improvement in oral aperture achieved at follow-up (Fig.3) reinforces the utility of this technique as a salvage procedure for severe post-surgical contracture.

IV. Figures

Figure 1: Preoperative extraoral view showing severe microstomia with marked commissural contracture and restricted oral aperture.

Figure 2: Immediate postoperative view after bilateral commissuroplasty with paraffin gauze dressing in situ.

Figure 3: Early postoperative view demonstrating improved oral aperture and commissural width following surgical correction.

V. Conclusion

This case illustrates that iatrogenic microstomia may develop after surgical management of advanced oral submucous fibrosis when postoperative physiotherapy is inadequate. It suggests that surgical release alone may not ensure sustained functional improvement without structured rehabilitation. Although limited by its single-case design, this report emphasizes the importance of postoperative physiotherapy, patient education, and long-term follow-up to reduce preventable functional morbidity following OSMF surgery.

Patient Consent: Written informed consent was obtained from the patient for publication of clinical details and clinical images.

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