Epulis fissuratum: treatment with combined excision and vestibuloplasty

Ahmad A. Othman1, Amjad Abdullah Alhejaili1, Salihah Awadh Albalawi1, Safa Ibrahim Susi1, Ahlam Saleem Alalawi1, Shadia A. Elsayed1*

ABSTRACT

**Background:** A common and sometimes irritating consequence of ill-fitting dentures is denture fissuratum. Different methods are used to diagnose, treat, and prevent this health condition, but there are a variety of challenges and issues with surgical management.

**Case Presentation:** Two cases were discussed involving combined surgical excision and vestibuloplasty, which, when done carefully, produced satisfactory outcomes and considerably improved the patient’s health. Combining prosthetic vestibuloplasty with patient’s denture support simultaneously with fissuratum excision improves vestibule depth and ridge height, potentially reducing the recurrence of this irritative hyperplasia.

**Conclusion:** Avoiding uncomfortable denture sequelae such as denture fissuratum requires thorough monitoring of edentulous patients and avoiding poorly fitted dentures. Working together as a team and using multiple dental techniques greatly improves the procedure’s outcome.

**Keywords:** Denture, fissuratum, epulis, vestibuloplasty, case report.

Introduction

It is known as a denture-related oral mucosal lesion because it develops commonly in relation to the flange of an ill-fitting denture and is brought on by chronic or acute irritations [1]. As described by Jainkittivong et al. [1], clinically, it appears as a raised sessile lesion or as several folds of hyperplastic fibrous connective tissue that resemble a tumor. Adults in their middle years and older are most commonly affected by the Epulis fissuratum [2].

The mandible or maxilla might be affected [3]. The anterior jaw region is more severely affected than the posterior region [4]. The lesion has an adverse impact on the patient’s mastication, appearance, and general health and could reduce their quality of life [5].

Epulis fissuratum is treated by removing the lesion and by removing the causative factors [6]. Combining multiple techniques of management could greatly improve results; thus, the current clinical cases describe a mix of conventional procedures that involve a tissue conditioning phase, followed by surgical resection of the Epulis fissuratum.

Furthermore, to avoid the recurrence of the lesion and to promote vestibular depth, the postsurgical recovery was guided by the repaired dentures.

Case Presentation

**Case I**

A 40-year-old female patient with a nonsignificant medical history presented to the Department of Oral Medicine and Oral Surgery at Taibah University in Saudi Arabia, with a chief complaint of pain and discomfort. While using her lower denture for the last 3 months, she had been wearing the current ill-fitting denture for 10 years.

Extra-oral examination showed a reduction in the vertical dimension of occlusion. Intra-oral examination revealed a pink to reddish prominent fibrous hyperplasia in the anterior alveolar mucosa of the mandible extending to the vestibular sulcus. The hyperplasia was covered...
Epulis fissuratum treatment

with inflammatory mucosa. On palpitation, the lesion was firm in texture and nonhemorrhagic. No cervical lymphadenopathy was evident. The alveolar ridge was highly resorbed with insufficient vestibular depth (Figure 1).

According to the patient’s history as well as intraoral and extraoral clinical examination, a provisional diagnosis of a denture-induced hyperplasia was made. The treatment plan included medical and surgical approaches. The patient was instructed not to wear the denture. Chlorhexidine mouthwash was prescribed. After 3 weeks, a significant regression of inflammation and a decrease in the size of hyperplasia was noted.

Local anesthesia (lidocaine 2% with adrenaline 1:100,000) was administered. Surgical excision of the lesion using blade no. 15 was performed, and Clark’s technique of vestibuloplasty was used to improve the vestibular depth of the anterior part of the mandible (Figure 2).

The patient’s old prosthesis was relined using a tissue conditioning material as a surgical stent after the procedure (Figure 3).

Postoperative instructions were given. After 48 hours, the patient was examined for adjustment of the prosthesis. After 36 days, favorable postoperative healing was observed (Figures 4 and 5).

Note the difference in the amount of vestibular depth extension compared to the previous vestibular depth extension.

Case II

A 57-year-old woman attended the clinic with the chief complaint of an abnormal growth along the anterior border of her ill-fitted upper overdenture, which gradually grew over the past 9 months. The denture was fabricated about 1 year and a half ago. The patient had been suffering from pain and discomfort during mastication for the past 9 months.

Clinical examination revealed an inflammatory fibrous mass located over the soft tissues of the maxillary vestibular sulcus. The treatment plan consisted of both medical and surgical approaches. The entire treatment plan was described to the patient, and a written consent form was taken. The patient was instructed not to wear the denture. A prescription for Chlorhexidine was given. After 2 weeks, the patient was recalled, and the inflamed tissue showed healing. Local infiltration was performed. The lesion was excised from its base with the help of a no. 15 scalpel blades followed by suturing of the open edges. Postoperative instructions were given, and the specimens were collected and sent for histopathological examination.

After 7 days, the patient was recalled for removal of suture and examination. The healing process was satisfactory. Finally, fabrication of the new denture was performed. A 4-month regular follow-up showed complete resolution without any recurrence.

Discussion

Complete denture wearers are a subgroup of individuals who require additional attention and care in order to be satisfied with their prosthesis. As a result, various preprosthetic operations have been documented since 1970 to improve patient tolerance to their prosthesis.

At Saudi Arabia, 4.2% of the population is edentulous, while 4.5% of patients over the age of 65 years are completely edentulous [7]. This percentage could be attributed to a variety of factors, including early tooth loss, high caries prevalence, and diabetic complications [8].

Figure 1. Epulis fissuratum along the anterior border of an ill-fitting mandibular denture after 2 weeks of medical therapy for inflammation.

Figure 2. A no. 15 scalpel blade was used to remove the lesion from its base.

Figure 3. Immediate suturing and vestibuloplasty with denture support.
Inflammatory disorders, such as inflammatory fibrous hyperplasia of the vestibule or epulis, are typically seen in older age groups. Epulis fissuratum is a tumor-like hyperplasia of fibrous connective tissue that develops in connection with the flange of poorly fitting dentures [9]. Epulis fissuratum is found at the junction of attached and free mucosa, as well as in the free mucosa lining the sulcus [2].

Different acceptable strategies are used in the management of Epulis fissuratum. The lesion is often excised through surgery. Excision can be done using a blade, rotary debridement, electro-cauterization, a CO₂ laser [10], an Er,Cr:YSGG laser [11], or a cryosurgical procedure [12]. The benefits of these procedures include minimal pain and bleeding avoidance.

To lengthen the fixed alveolar ridge tissue in the maxilla, Obwegeser described the sub-mucous vestibuloplasty in 1959. Both labial and lingual extension treatments can be carried out to successfully lower the floor of the mouth by combining the techniques outlined by MacIntosh and Obwegeser [13].

In a controlled clinical trial, Karimi et al. [14] compared laser versus blade excision and concluded that the use of CO₂ laser might result in less surgery time, less bleeding during surgery, more vestibular depth, better re-epithelialization of the wound, and less need for suturing, but blade excision healing was better and faster. In the current cases, a standard surgical procedure was used, and wound sutures were used to control bleeding.

Maintaining a supra-periosteal plane with repositioning of mucosal edges to allow for subsequent granulation is preferred over approximating wound edges that result in the alteration of the vestibule. Sharp excision with the undermining of the adjacent mucosa and re-approximation of the tissues is preferred for the treatment of large lesions.

In the presented cases, vestibuloplasty in conjunction with epulis excision is the preferred method of treatment to enhance prosthetic integration by heightening the residual alveolar ridge and generating a sufficient band of keratinized mucosa. Vestibuloplasty widens the prosthetic surface, reducing the strain of the denture on the supporting bone and the bone resorption brought on by the transmission of occlusal forces.

This treatment involved adjusting the patient’s denture and using it to direct the operation and postoperative recovery, ensuring therapeutic success and avoiding recurrence. The current technique results in less edema, less pain, and better tissue repair with no recurrence. Combining prosthetic vestibuloplasty with denture assistance during the healing phase improves vestibular depth and increases ridge height simultaneously with fissuratum excision, potentially preventing the recurrence of this hyperplasia [3].

To avoid exposing underlying bone, a supra-periosteal technique is advised. As a result, using a tissue conditioner and a denture reline over suturing helps to reduce patient discomfort.

To retain the altered position of the soft tissue attachments, the incision must be closed in the new position, and a postsurgical denture must be inserted and screwed to the sutures to act as a stent. Two weeks after surgery, the denture or stent was removed. A permanent extension of mucosal tissue covers the alveolus as a result of mucosal tissue’s adhesion to the periosteum beneath during the healing process. At roughly one month after surgery, the patient’s denture could have its final reline. Closure is best accomplished with resorbable sutures in an interrupted manner. To maintain the height of the alveolar ridge, sutures should come into contact with the periosteum, particularly at the depth of the vestibule.

With the help of conservative continuous irrigation with normal saline and maintenance of good oral hygiene, the wound was successfully healed, and reepithelization at the anterior region of the maxilla and the mandible proceeded without the need for an additional soft tissue.
Epulis fissuratum treatment

flap. This is in agreement with a study that found that these regions’ oral mucosa healed effectively without any remaining wound dehiscence [15].

Conclusion
Avoiding uncomfortable denture sequelae such as denture fissuratum requires thorough monitoring of edentulous patients and avoiding poorly fitted dentures. Working together as a team and using multiple dental techniques greatly improves the procedure’s outcome. Combining prosthetic vestibuloplasty with patient denture support simultaneously with fissuratum excision, improves vestibule depth and ridge height, potentially reducing the recurrence of this irritative hyperplasia.

Conflict of interest
The author declared that there is no conflict of interest regarding the publication of this case report.

Funding
None.

Consent of publication
Informed consent was obtained from the patient.

Ethical approval
Ethical approval is not required at our institution for an anonymous case report.

Author details
Ahmad A. Othman1, Amjad Abdullah Alhejaili1, Salihah Awadh Albalawi1, Safa Ibrahim Susi1, Ahlam Saleem Alalawi1, Shadia A. Elsayed1
1. Department of Oral and Maxillofacial Diagnostic sciences, College of Dentistry, Taibah University, Almadinah Almunawwarrah, Saudi Arabia

References

1870