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A case report

Surgical Management of Large Denture-Induced Fibrous Hyperplasia of The Upper Labial Mucose: A Case Report

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Abstract:

Background: Denture-induced fibrous hyperplasia often occurs because of mechanical irritation from ill-fitting denture on the oral mucosa. Although it is asymptomatic, it may affect the mastication and aesthetic of the patient negatively due to discomfort. Chronic trauma by the borders of ill-fitting dentures has the potential to cause oral carcinoma. Hence, denture-induced fibrous hyperplasia should not be overlooked. The treatment of this oral lesion can be surgical removal with scalpels.

Case Report: A 62-year-old woman presented with a painless mass on the upper labial mucosa. The patient reported that the lesion had gradually enlarged over time. The patient had no history of systemic disease. Clinical examination revealed a well-defined nodular mass measuring approximately 3.5 × 2 × 1.5 cm located on the upper lip mucosa. The lesion appeared pinkish in color with a smooth surface and firm consistency on palpation. The patient reported prolonged use of a removable denture that had become unstable, which frequently caused irritation to the right maxillary lip mucosa. Based on the clinical findings, a provisional diagnosis of fibromatous epulis (inflammatory fibrous hyperplasia) was considered.

Management and Outcome: Complete surgical excision was performed under general anaesthesia, considering the large size of the lesion, the need for optimal surgical access, and perioperative considerations in a geriatric patient. The lesion was removed using an elliptical incision followed by careful dissection and wound closure with a combination of interrupted and continuous sutures. Histopathological examination confirmed the diagnosis of denture-induced fibrous hyperplasia. Postoperative healing was uneventful, and the patient reported significant improvement in comfort and lip contour.

Conclusion: Surgical excision is an effective treatment for large denture-induced fibrous hyperplasia. Careful surgical planning and appropriate perioperative management in geriatric patients are essential to achieve favorable clinical outcomes and prevent recurrence.

Keywords: Denture-induced fibrous hyperplasia, Epulis fissuratum, Oral surgery, Geriatric patient

Introduction

Inflammatory fibrous hyperplasia is a lesion characterized by fibrous hyperplasia of the oral mucosa [1]. Clinical appearance of this lesion is raised, sessile with single or multiple folds of hyperplastic tissue in the alveolar vestibule. The size of the Inflammatory fibrous hyperplasia can vary from less than 1 cm in size to massive lesions that involve most of the length of the vestibule. The lesion usually develops on the facial aspect of the alveolar ridge. The redundant tissue is usually firm and fibrous although some lesions appear erythematous and ulcerated [2].

Inflammatory fibrous hyperplasia also known as Denture-induced fibrous hyperplasia (DFH) is a benign hyperplastic lesion usually caused by chronic trauma. It is the result of constant trauma caused by the pressure from overextended denture borders or continuous use of denture without intervals rest or unbalanced occlusion. This lesion occurs adjacent to the flanges of complete or partial ill-fitting dentures [3], [4]. This lesion has predilection for middle-aged and older adults with dental prosthesis of the jaws. The lesion is considered a non-malignant reactive lesion and often asymptomatic [3]. Inflammatory fibrous hyperplasia is also known as epulis fissuratum, granuloma fissuratum and denture epulis [5].

Histopathological examination of the DFH reveals increased quantity of fibrous connective tissue with varying numbers of chronic inflammatory cells, which are predominantly plasma cells [2]. The differential diagnosis of fibrous inflammatory hyperplasia should include true papilloma or squamous cell carcinoma or other neoplastic conditions especially when unusual clinical features are observed [6]. Diagnosis is primarily clinical, and it is supported by histopathological analysis when necessary [3]. Therefore, the treatment of this oral lesion consists of surgical removal, with histopathological examination of the excised tissue. The surgical excision of the inflammatory fibrous hyperplasia causes bleeding, post operative pain and edema. The conventional surgical procedure requires sutures, delayed wound healing and re-epithelialization [7]. This case report aimed to describe a clinical case of inflammatory fibrous hyperplasia emphasizing the surgical approach through excision of the lesion and removal of excess tissue [8].

Case Description

A 62-year-old woman presented with a painless mass on the upper labial mucosa. The patient reported that the lesion had gradually enlarged over time. The patient had no history of systemic disease. Patient has a dental history of using maxillary complete dentures.

Physical examination revealed the patient's blood pressure was 128/85 mmHg, pulse rate 78 beats per minute, respiratory rate 22 breaths per minute and body temperature 36,6ºC. Extraoral examination showed facial asymmetry with swelling of the upper right cheek due to mass effect. The skin had normal color.

Intraoral examination revealed a well-defined nodular mass measuring approximately 3.5 × 2 × 1.5 cm located on the upper right lip mucosa. The lesion appeared pinkish in color, pedunculated with a smooth surface and firm consistency on palpation. The lesion has no sign of active ulceration. The mass extended from upper midline to the half posterior upper right alveolar ridge (**Fig.1**).

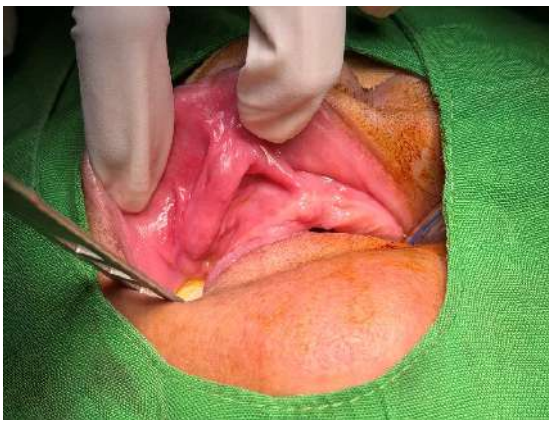

Figure 1: Pre-operative

Laboratory examination results were within normal limits: hemoglobin 13.7 g/dL, erythrocytes 4.09 x 106/ml, hematocrit 41.0%, creatinine 0.84mg/dL and non-reactive HBsAG (**Fig.2**). Chest radiography showed no abnormalities (**Fig.3**).

The patient reported prolonged use of a removable denture that had become unstable, which frequently caused irritation to the right maxillary lip mucosa. Based on the clinical findings, a provisional diagnosis of fibromatous epulis (irritation fibroma) was considered.

PEMERIKSAAN		HASIL	SATUAN	RUJUKAN	KETERANGAN
HEMATOLOGI					
Hematologi Rutin					
Hemoglobin		13.7	g/dL	12.0 - 16.0	
Eritrosit		4.09	10^6/µL	4.0 - 5.0	
Hematokrit		41.0	%	36 - 46	
Nilai - Nilai MC					
MCV	H	100.2	fL	84 - 96	
MCH		33.5	pg/cell	28 - 34	
MCHC		33.4	g/dL	32 - 36	
RDW-CV		12.0	%	11.5 - 14.5	
Leukosit	H	11.1 *	10^3/mm³	5.0 - 10.0	
Trombosit		344	10^3/µL	150 - 400	
HEMOSTASIS					
PT					
Pasien PT	L	9.80 -	detik	10 - 12.7	
Kontrol PT		12.10			
APTT					
Pasien APTT		23.90	detik	23.0 - 34.7	
Kontrol APTT		25.40			

PEMERIKSAAN	HASIL	SATUAN	NILAI RUJUKAN	KETERANGAN
KIMIA KLINIK				
SGOT	21	U/L	< 31	
SGPT	H 32	U/L	< 32	
Glukosa Darah	123	mg/dL	< 200	
Ureum	27	mg/dL	20 - 50	
Kreatinin	0.84	mg/dL	0.5 - 1.5	
IMUNOLOGI				
HBsAg	Non Reaktif		Non Reaktif	

Figure 2: Laboratory Test Result

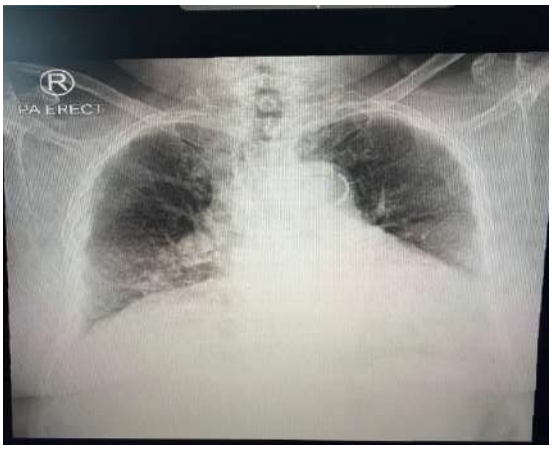

Figure 3: Chest X-Ray Examination Result

Management

The patient underwent minor oral surgical intervention in the operating room consisting of complete excision of the lesion under general anaesthesia, followed by histopathological examination. The patient was classified as American Society of Anaesthesiologists (ASA) Physical Status I.

General anaesthesia was selected considering several clinical factors, including the patient's advanced age (62 years), the large size of the lesion (approximately 3.5 × 2 × 1.5 cm), and the anticipated difficulty in controlling lip movement if the procedure were performed under local anaesthesia alone. In addition, geriatric patients often experience higher levels of anxiety during surgical procedures, which may compromise patient cooperation and increase intraoperative discomfort.

Following induction of general anaesthesia and nasotracheal intubation, aseptic preparation was carried out using 10% povidone-iodine solution applied to both extraoral and intraoral surgical fields. Sterile draping was performed, and an oropharyngeal throat pack was placed to prevent aspiration of blood and debris during the procedure. Adjunctive local anaesthesia was administered using an infiltration technique with 2% lidocaine containing epinephrine 1:80,000 around the lesion to enhance intraoperative haemostasis and postoperative analgesia.

The upper lip was gently retracted to provide adequate exposure of the maxillary labial mucosa, where a large hyperplastic lesion was identified **(Fig.1)**. The lesion appeared as a lobulated fibrous mass consistent with denture-induced fibrous hyperplasia.

An elliptical incision was marked along the base of the hyperplastic tissue **(Fig.4).** Using a scalpel, the lesion was carefully incised and dissected from the surrounding mucosal tissue. Blunt and sharp dissection techniques were used to separate the fibrous hyperplastic tissue while preserving the surrounding healthy mucosa. **(Fig.5).** The lesion was then completely excised, and the surgical field was inspected to ensure adequate removal of the hyperplastic tissue. Haemostasis was achieved using suction and careful tissue handling. **(Fig.5)**

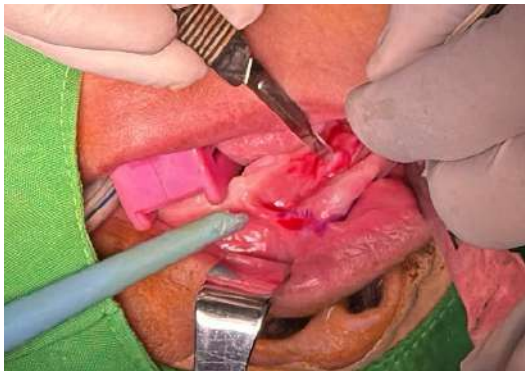

Figure 4: An Elliptical incision

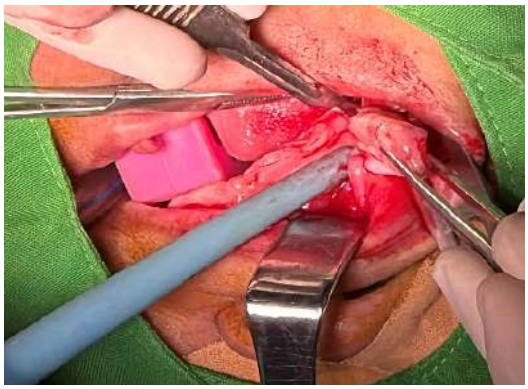

Figure 5: Careful dissection of the fibrous tissue and control bleeding with suction.

After complete removal of the lesion, the surgical field was carefully inspected and haemostasis was achieved. The wound margins were then approximated and closed using a combination of interrupted and continuous suturing techniques to ensure proper tissue adaptation, stability of the wound edges, and optimal healing. The suturing approach allowed adequate tension distribution along the surgical site while restoring the normal anatomical contour of the maxillary labial mucosa. **(Fig.6)**

Figure 6: Combination of interrupted and continuous suturing

Postoperatively, the patient was monitored in the recovery room until full recovery from general anaesthesia was achieved. The patient was prescribed analgesics Paracetamol 500mg thrice daily, and antibiotics Cefadroxil 500mg twice daily to control postoperative pain and prevent infection. Instructions were given to maintain proper oral hygiene and to avoid trauma to the surgical site. The patient was also advised to temporarily discontinue the use of the removable denture until adequate healing of the surgical area was achieved.

The patient was scheduled for regular follow-up visits to evaluate wound healing. At the first postoperative follow-up, the surgical site showed satisfactory healing with no signs of infection, excessive bleeding, or wound dehiscence. Sutures were removed during the follow-up visit, and the patient reported improvement in comfort and lip contour. **(Fig.7)** The patient was subsequently advised to undergo prosthetic evaluation to adjust or remake the denture in order to prevent recurrence of the lesion.

Figure 7: Follow up after one week

Histopathological examination of the excised specimen revealed tissue fragments lined by stratified squamous epithelium on the surface. Beneath the epithelial layer, there was a proliferation of spindle-shaped cells arranged in fascicles, exhibiting relatively monomorphic nuclei within a collagenous stroma. Numerous small capillary vessels were also observed

interspersed within the connective tissue. **(Fig.8)**

These histopathological features were consistent with a benign fibrous hyperplastic lesion, supporting the diagnosis of denture-induced fibrous hyperplasia **(Fig.9).** No cellular atypia or malignant features were observed.

Diagnosa Klinik	Fibroma mukosa labialis superior (D) dd / hiperplasia
Makroskopik	Sepotong jaringan putih kecoklatan, ukuran ± 3,5x2x1,5 cm Penampang putih kecoklatan. Cetak semua.
Mikroskopik	Dalam sediaan yang kami terima mikroskopis tampak potongan jaringan pada permukaan dilapisi oleh epitel berlapis gepeng, dibawahnya tampak proliferasi sel-sel spindel yang tersusun fasikulus dengan inti monomorf diantara stroma kolagen serta kapiler-kapiler diantaranya.
Kesimpulan	Fibroma.

Figure 8: Histopathological examination result

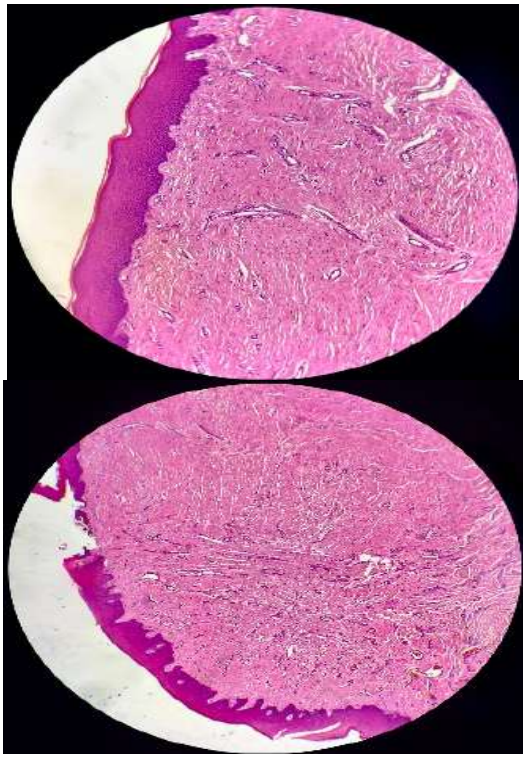

Figure 9: Histopathological Features

Discussion

Inflammatory fibrous hyperplasia, also known as denture-induced fibrous hyperplasia or epulis fissuratum, is a benign reactive lesion of the oral mucosa caused by chronic mechanical irritation, most commonly from ill-fitting dentures. Continuous pressure from unstable prosthetic borders may induce fibrous connective tissue proliferation in the vestibular mucosa, resulting in hyperplastic folds or nodular masses [2].

This lesion is frequently observed in elderly denture wearers, as age-related alveolar ridge resorption and prolonged prosthesis use may contribute to denture instability and chronic mucosal trauma [9]. In the present case, the patient had a long history of using a maxillary complete denture that had become unstable, which likely caused repeated irritation to the maxillary labial mucosa and resulted in the development of a large hyperplastic lesion.

Clinically, denture-induced fibrous hyperplasia typically presents as a firm, sessile or pedunculated mass with a colour similar to the surrounding mucosa [5]. The lesion in this case measured 3.5 × 2 × 1.5 cm, which can be considered relatively large and caused functional and aesthetic disturbances, including lip asymmetry and difficulty wearing the denture. Large lesions often require surgical management because conservative treatment alone may not adequately eliminate the excess fibrous tissue[1].

Histopathological examination plays an important role in confirming the diagnosis and excluding other pathological conditions. In this case, microscopic findings demonstrated stratified squamous epithelium overlying connective tissue composed of spindle-shaped fibroblastic cells arranged in fascicles within a collagenous stroma, accompanied by small capillary vessels. These findings are consistent with the typical histopathological features of inflammatory fibrous hyperplasia and confirm the benign nature of the lesion [10].

Surgical excision remains the treatment of choice for large denture-induced fibrous hyperplasia. The goal of surgery is to completely remove the hyperplastic tissue and restore the normal anatomical contour of the vestibular mucosa [1]. In the present case, the lesion was excised using an elliptical incision followed by careful tissue

dissection and closure with a combination of interrupted and continuous sutures to ensure adequate wound stability and healing.

The procedure was performed under general anaesthesia, considering the patient's advanced age, lesion size, and potential difficulty in controlling lip movement during surgery. General anaesthesia can provide better surgical access, improved airway protection, and enhanced patient comfort, particularly in geriatric patients who may experience increased anxiety during surgical procedures [11].

Postoperative healing in this case was satisfactory, with no complications observed during follow-up. Surgical excision combined with elimination of the traumatic factor is essential to prevent recurrence of the lesion.

Conclusion

Denture-induced fibrous hyperplasia is a common reactive lesion in elderly denture wearers resulting from chronic mechanical irritation. Large lesions may require surgical excision to restore normal oral function and anatomy. Careful surgical management combined with appropriate perioperative considerations in geriatric patients can result in favourable clinical outcomes. Elimination of the traumatic factor, particularly through proper denture adjustment or replacement, is essential to prevent recurrence.

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