Surgical and Prosthodontic Management of Denture Induced Hyperplastic Lesion in Maxillary Arch - A Case Series

Uzma Anam Iqbal[1]	**BDS**
Ahsan Inayat[2]	**BDS**
Afsa Mujahid[3]	**BDS**
Muneeb Ahmed Lone[4]	**BDS, FCPS**
Bilal Hussain[5]	**BDS**
Bharat Kumar[6]	**BDS, FCPS**

Denture irritation hyperplasia is a hyper plastic lesion of the oral mucosa which results from chronic irritation as a result of wearing poorly adapted dentures. It is most commonly seen in maxillary arch with female patients being mostly effected. The lesion varies in size from only a few millimeters to extending to involve the entire quadrant. The clinical management of denture induced hyperplasia depends upon the size of lesion and involves the elimination of causative factors, excision of excess fibrous tissue accompanied by an appropriate prosthetic rehabilitation. This case series presents the management of denture induced hyperplastic lesion of varying sizes present in maxillary arch by providing appropriate tissue rest and tissue conditioning as well as by surgical excision followed by new denture fabrication to achieve acceptable function for patients.

KEYWORDS: Denture hyperplasia, Epulis fissuratum, Tissue conditioning, Prosthesis

HOW TO CITE: Iqbal UA, Inayat A, Mujahid A, Lone MA, Hussain B, Kumar B. Surgical and prosthodontic management of denture induced hyperplastic lesion in maxillary arch - A case series. J Pak Dent Assoc 2023;32(1):27-30.

DOI: https://doi.org/10.25301/JPDA.321.27

Received: 11 April 2022, Accepted: 08 December 2022

INTRODUCTION

Denture induced hyperplasia also known as epulis fissuratum is an overgrowth of intraoral tissues resulting from chronic irritation.[1] It is considered as a common tissue reaction resulting from chronic ill-fitting dentures and presents as an occurrence of hyper plastic tissue along the denture border.[2] This process results in resorption of the ridge which may occur as a result of over extended denture borders resulting in chronic irritation to oral tissues in the vestibular region.[3] It is characterized by slow development of elongated roll of tissues in the muco-buccal fold region into which denture flange fits and is symptomless until the lesion become ulcerated. Epulis fissuratum is usually treated by conservative management or it is surgically excised depending on the extent of the lesion.[4] Rosenquist stated that persistent trauma to the oral tissues by the rough borders of ill-fitting dentures or sharp edges of teeth may predispose patients to oral cancer. Therefore, ill-fitting dentures and their sequelae should never be neglected.[5]

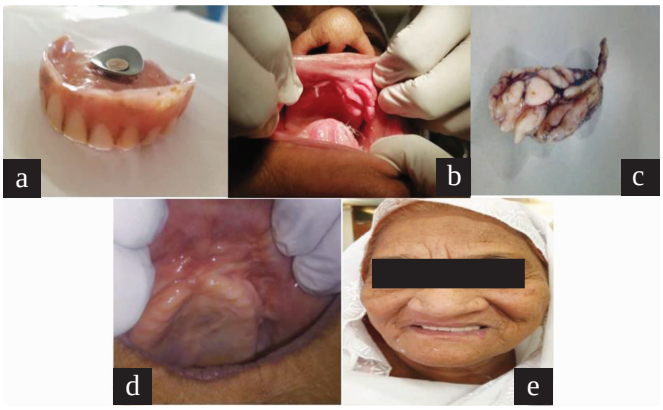
CASE 1

A 63-year-old female patient reported to the department of Prosthodontics, Dr Ishrat-ul-Ebad Khan Institute of Oral Health Sciences, Karachi for fabrication of a new set of complete dentures. Past dental history revealed that the patient was a denture wearer since last ten years. On examination of her existing maxillary denture a suction disk was present on the intaglio surface and the borders of left labial flange were sharp and overextended (Fig 1a). Patient had an average denture hygiene with signs of occlusal wear of teeth. Medical as well as family history were non-contributory. Patient had no habit of pan, chalia or tobacco chewing. Extra oral examination showed no atypical features. Intraoral examination disclosed palatal mucosa with a well-defined depression at the middle in

1. MDS Resident, Department of Prosthodontics, Dr Ishrat-ul-Ebad Khan Institute of Oral Health Science, Dow University of Health Sciences, Karachi.
2. MDS Resident, Department of Prosthodontics, Dr Ishrat-ul-Ebad Khan Institute of Oral Health Science, Dow University of Health Sciences, Karachi.
3. MDS Resident, Department of Prosthodontics, Dr Ishrat-ul-Ebad Khan Institute of Oral Health Science, Dow University of Health Sciences, Karachi.
4. Assistant Professor and Chairperson, Department of Prosthodontics, Dr Ishrat-ul-Ebad Khan Institute of Oral Health Sciences, Karachi.
5. Lecturer, Department of Oral Surgery, Dr Ishrat-ul-Ebad Khan Institute of Oral Health Sciences, Karachi.
6. Assistant Professor, Department of Prosthodontics, Dow International Dental College, Dow University of Health Sciences, Karachi.

Corresponding author: "Dr. Uzma Anam Iqbal" < anam.iqbal424@gmail.com >

the hard palate which was non-tender on palpation. Furthermore, there was a well-defined multi-lobular hyperplastic lesion in the left vestibular region in maxillary arch extending from central incisor to premolar region with flange of denture fitting in between the tissue folds (Fig 1b). On palpation, the tissue folds were non tender, mobile and had no ulceration on the base of the lesion. Patient did not give any history of pain or swelling hence it was an accidental finding. On basis of history and clinical evaluation a preliminary diagnosis of denture irritation hyperplasia was made. Patient was advised not to use her denture and oral hygiene instructions were given to her. Due to extensive size of hyperplastic tissue pre-prosthetic surgery was planned since conservative management alone would not completely resolve the lesion. Local anesthesia was administered for infraorbital, anterior superior alveolar and lesser palatine nerve. The periphery of the lesion was marked with an indelible pencil and was resected from its base with a no.15 surgical blade followed by primary closure with sutures. Patient was given postoperative instructions along with antibiotics and analgesics. The specimen excised was sent for histopathological examination which confirmed the diagnosis (Fig 1c). The patient was recalled after 15 days for follow up and suture removal. On 02 months follow-up, the tissues had healed completely and impression for fabrication of new complete denture was made (Fig 1d). The patient was kept on follow up visits for 7 months and no relapse of lesion was found till date. (Fig 1e).



CASE 2

A 50-year-old female presented to the Prosthodontic department with complaint of an ill-fitting maxillary denture and a painless soft tissue mass in the maxillary arch since last one year. The patient was wearing the denture since the last six years, without removing it at nighttime. Lower arch was rehabilitated with a distal extension RPD which the patient misplaced around 5 years back. On denture examination, over-extended left labial flange border was observed, along with an imprint of suction disk in the center of fitting surface of denture. (Fig 2 a). Extra oral examination was within normal limits. On intraoral examination, generalized erythematous mucosa and folds of fibrous hyperplastic tissues were observed in the maxillary anterior labial sulcus (Fig 2 b). There was no pain and tenderness on palpation of the fibrous tissues. In the mandibular arch, anterior teeth were present with bilateral free end saddle in the posterior region. A provisional diagnosis of denture induced hyperplasia was made based on history and clinical examination. The patient was advised discontinuing wearing of denture to give appropriate tissue rest. Oral hygiene instructions were given such as regular brushing, use of Chlorhexidine mouth wash, warm saline rinses 3 times a day and finger massage of the affected area. On follow-up visit at three weeks, the fibrous tissue showed regression with no sign of inflamed mucosa. Oral hygiene instructions were reiterated. A new prosthesis was fabricated after two months when there was marked decrease in the size of lesion (Fig 2c & 2d).

CASE 3

A 71-year-old male patient visited dental outpatient department of Dr. Ishrat-ul-Ebad Khan Institute of Oral Health Sciences, with chief complaint of loose maxillary complete denture since last 3 months. History revealed that he was wearing the denture since past two years. There was no significant medical history. Extra oral examination revealed no atypical features. On intraoral examination, inflamed mucosa and fibrous hyperplasia was noticed that was not tender to palpation (Fig 3a). It was associated with a sharp, over extended maxillary denture flange in anterior labial sulcus. Maxillary denture was opposed by full arch porcelain

fused to metal fixed prosthesis with which the patient was satisfied and had no complaints. Denture examination revealed poor denture hygiene, worn occlusal surfaces and improperly repaired midline fracture. A provisional diagnosis of denture induced hyperplasia was made based on history and clinical examination. The patient was educated regarding maintenance of oral and denture hygiene, immediate discontinuation of denture wearing, finger massage of affected area and use of anti-inflammatory mouth wash. On recall visit after 2 weeks mucosa was still inflamed, hence maxillary denture was relined with tissue conditioner for improved mucosal healing (Fig 3b). This procedure was repeated twice till the size of lesion regressed. After improvement in health of oral tissues new dentures were fabricated (Fig 3c & 3d).

DISCUSSION

Chronic irritation and continuous trauma to oral mucosa by ill-fitting denture are main causative factors associated with the occurrence of epulis.[6] Clinically, epulis fissuratum presents as a raised sessile lesion in folds with a smooth surface that may have a normal or erythematous overlying mucosa.[7] The lesion may also occur due to gradual ridge resorption, which leads to reduced ridge height and overextended denture flanges causing chronic irritation to the mucosa.[8] The size of the fibrous tissue ranges from a smaller mass to an extensive lesion which may involve the entire vestibule. Although the lesion is often symptomless, occasionally inflammation and ulceration may occur.[9]

In our reported cases, overextended and ill-fitting denture flanges of maxillary complete denture were the main etiologic factors identified. These findings are similar to other studies in which ill-fitting denture flanges were the main reason for denture induced hyperplasia.[10,11]

Firoozmand and Buchner et al reported occurrence of these lesions mostly in the maxillary arch with female patients (78%) being mostly affected.[12,13] These findings are comparable to our reported cases where two out of three cases were female patients with the lesion present in maxillary arch.

In two of our reported cases, patient presented with rubber suction disk retained maxillary dentures. These were placed in palatal region on the intaglio surface to improve retention of the maxillary denture. Suction cup induces immense negative pressure on the mucosal surface and may cause soft tissue changes and in extreme cases loss of palatal bone and perforation.[14] Despite its known ill effects many cases of suction disc dentures are still reported in our clinical settings. Palatal suction cups should be highly discouraged as they have pathological effects on palatal tissues. In our reported cases, palatal soft tissue changes due to suction disk were minimal. Therefore, patients were advised to discontinue use of dentures and apply analgesic gel, which lead to complete healing of palatal tissues.

Denture-irritation hyperplasia may be managed conservatively or surgically. In early stages of fibrous hyperplasia, nonsurgical treatment with soft-liners is frequently sufficient for elimination or reduction of the hyperplastic tissues.[9] Two of the patients in our reported cases were managed with conservative approach (case 2 and 3). Patients were instructed to discontinue the use of denture for some time. Denture faults were corrected and tissue surface was relined with tissue conditioning material (GC Soft Liner). This procedure was repeated for 2-3 times over the span of 15 days till the size of lesion regressed. However, these measures were effective since size of fibrous tissue lesion was small. After complete healing of the tissues, new dentures were fabricated.

Tissue conditioning is a non-invasive treatment that can be solely used to manage clinical cases of small mucosal hyperplastic lesions. However it has limitations in cases with extensive mucosal lesions where there is significant fibrosis and surgical excision of hyperplastic tissue is required in such cases.[15,16] In our reported Case 1, the size of lesion was extensive and hence it was surgically excised. These results are similar to a study conducted by Khan WU et al[15] in which extensive hyperplastic lesion in the maxillary arch was managed surgically. Surgical techniques include conventional surgical supra-periosteal and advanced techniques eg: cold blade, electro-surgery, lasers or cryosurgery.[17] In our case conventional surgical supra- periosteal excision was performed.

CONCLUSION

Denture-induced hyperplasia is a sequelae of wearing complete denture, which commonly occurs due to chronic

irritation and ill-fitting dentures. Few cases of epulis fissuratum are presented which were managed by both conservative and surgical approach. Once the lesion is identified patient should be reassured about its benign nature. Instructions regarding meticulous oral and denture hygiene should be provided and patient should be kept on regular recall and follow-up visits to prevent recurrence.

CONFLICT OF INTEREST

None declared

REFERENCES

1. The Glossary of Prosthodontic Terms: Ninth Edition. J Prosthet Dent. 2017;117(5S):e1- e105.
https://doi.org/10.1016/j.prosdent.2016.12.001

2. Agarwal AA, Mahagan M, Mahagan A, Devhare S. Application of diode laser for excision of inflammatory vascular epulis fissuratum. Int J Case Reports Images. 2012;3:42-45.

3. Bhasker RM, Davenport JC, Thomson JM. 5th ed. UK: Willy-Blackwell; 2001. Prosthetic treatment of the edentulous patients.

4. Mohan RP, Verma S, Singh U, Agarwal Epulis fissuratum: consequence of ill-fitting prosthesis. Brit Med J Case Reports.2013;1-2.
https://doi.org/10.1136/bcr-2013-200054

5. Rosenquist K. Risk factors in oral and oropharyngeal squamous cell carcinoma: a population- based case-control study in southern Sweden. Swedish Dent J. 2005;179(Suppl):1-66.

6. Kafas P, Upile T, Stavrianos C, Angouridakis N, Jerjes W. Mucogingival overgrowth in a geriatric patient. Dermatol Online J. 2010;16:7.
https://doi.org/10.5070/D399Z2D3TC

7. Janosi K, Popsor S, Ormenisan A, Martha K. Comparative study of hyper plastic lesions of the oral mucosa. Eur Scientific J. 2013;9.

8. Budtz-Jørgensen E. Oral mucosal lesions associated with the wearing of removable dentures. J Oral Pathol Med. 1981;10:65-80.
https://doi.org/10.1111/j.1600-0714.1981.tb01251.x

9. Veena KM, Jagadishchandra H, Sequria J, Hameed SK, Chatra L, Shenai An extensive denture induced hyperplasia of maxilla. Annals Med Health Sci Res. 2013;3:7-9.
https://doi.org/10.4103/2141-9248.121208

10. Ayyaz M , Afzal S, Mehdi H, Kaukab H. Prevalence of reactive hyperplastic oral lesions. Pak Oral Dent J. 2020;40:162-6.

11. Rizvi SHA, Aqeel R, Zaki A, Ijaz S, Syed S, Nadeem A. Prevalence and distribution of denture induced oral mucosal lesions among patients managed in Lahore teaching hospital. Pak J Med Health Sci. 2022;16.
https://doi.org/10.53350/pjmhs22165179

12. Firoozmand LM, Almeide JD, Cabral LA. Study of denture-induced fibrous hyperplasia cases diagnosed from 1979-2001. Quintessence Int. 2005;36:825-9.
https://doi.org/10.1016/j.prosdent.2006.03.010

13. Buchner A, Begleiter A, Hansen LS. The predominance of Epulis Fissuratum in females. Quintessence Int Dent Dig. 1984; 15:699-702.

14. Rao Y, Yadav P, Singh J, Patel D, Aggarwal A. Surgical and prosthetic management of suction cup induced palatal perforation: Case report. J Clin Diagnostic Res. 2013;7:2086.
https://doi.org/10.7860/JCDR/2013/6300.3413

15. Khan MWU, Mushtaq MA, Shah AA. A massive denture induced hyperplastic lesion in maxilla- a case report. J Pak Dent Assoc. 2019;28:47-9
https://doi.org/10.25301/JPDA.281.47

16. Monteiro LS, Mouzinho J, Azevedo A, Câmara MI da, Martins MA, La Fuente JM. Treatment of epulis fissuratum with carbon dioxide laser in a patient with antithrombotic medication. Braz Dent J. 2012;23:77-81.
https://doi.org/10.1590/S0103-64402012000100014

17. Ibrahim AH. Prosthetic and surgical management of a sizeable epulis fissuratum: a case report. Pan African Med J. 2022;41:9.
https://doi.org/10.11604/pamj.2022.41.49.31339