

Series of Gingival Enlargement : Case Reports

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Abstract

Gingival enlargement, an increase in the size of the gingiva, is a common feature of gingival disease. This can be a cosmetic as well as pathological problem which can interfere with mastication and speech, impede effective plaque control or malalignment of teeth. Fibro-epithelial hyperplasia a histological variant of fibroma is a proliferative fibrous lesion of the gingival tissues. A slowly progressive fibrous enlargement of the maxillary and mandibular gingival enlargement is a feature of idiopathic fibrous hyperplasia of the gingiva. Pyogenic granuloma also known as a "Eruptive hemangioma" is a vascular lesion that occurs on both mucosa and skin, and appears as an overgrowth of tissue due to irritation, physical trauma or hormonal factors. In the present report we have elaborated on a series of gingival enlargements along with its clinical and histological features and treatment planning. Peripheral cementifying fibroma is defined as a solitary lesion of the gingiva thought to arise from periodontal ligament, most commonly at the region of interdental papilla.

Key words: *Gingival enlargement, Fibroepithelial hyperplasia, Hepatitis B, Pyogenic granuloma, cementifying fibroma.*

Introduction

Gingival enlargement, an increase in the size of the gingiva, is a common feature of gingival disease. This is strictly a clinical description of the condition and abates the erroneous pathologic connotations of terms used in the past such as hypertrophic gingivitis, gingival hyperplasia or "gingival hypertrophy". Gingival enlargement can be caused by stimuli, and treatment is based on understanding of underlying pathologic changes. The term 'gingival hyperplasia' was used for a long time for a gross increase in size of gingival tissue, which should not to be confused with overgrowths of bone[1].

Hepatitis B is an infectious inflammatory illness of the liver caused by the hepatitis B virus (HBV). The acute illness causes liver inflammation, vomiting, jaundice, and, rarely, death. Chronic hepatitis B may eventually cause

cirrhosis and liver cancer. The infection is preventable by vaccination[11].

Case Report-1

A 40 year old female patient reported to Department of Periodontics, Rural dental college, Loni complaining of swelling in the upper left front region of the mouth for the past three months. The patient noticed the swelling three months back which gradually increased to attain the present size. Medical history revealed that the patient was suffering from jaundice one year back, and was treated for the same.

Clinical Examination

On Extraoral examination the patient revealed a symmetrical profile. Intraoral examination revealed a pedunculated, soft, non tender, pinkish colour enlargement involving left upper anterior palatal region of oral cavity. Swelling extends from distal region of 22 to mesial region of 24 on palatal aspect involving marginal and interdental gingiva which was 1.5cm in length and 1cm in width. (Fig no 1) showing intraoral lesion on palatal aspect. Local deposits were consistent with the size of the lesion.

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Fig 1: preoperative occlusal view

PERIODONTAL MANAGEMENT

Initially thorough scaling and root planning were done carefully to remove local irritating factors that may be responsible for superimposed gingival inflammation. The patient was educated for proper oral hygiene practices.

An excisional biopsy was performed in relation to 22-24 region on palatal aspect under strict aseptic conditions with the use of Z-Kit under local anaesthesia (lignocaine and adrenaline 1:80,000). The excised tissue was preserved in 10% formalin and sent for histopathological examination. (Fig no.2) showing excised lesion. Periodontal dressing was given.

Patient was advised to take antibiotic-analgesic regimen (Amoxicillin 500 mg three times a day, and Ibuprofen 250mg+Paracetamol 250mg) for five days and to use 0.2% chlorhexidine mouth rinse for two weeks post operatively.

After one week initial healing was satisfactory. Post operative follow up did not show any recurrence after 6 month.

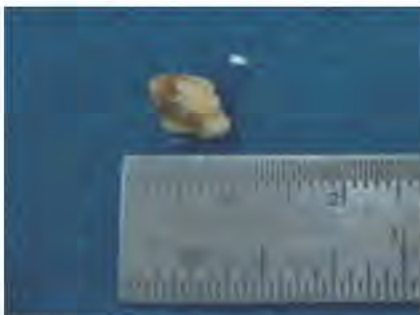


Fig. 2 : Excised Lesion

HISTOPATHOLOGICAL EXAMINATION

H and E stained sections shows hyperkeratinized stratified squamous epithelium with proliferating long reteridges. The underlying connective tissue showed, short and thin collagen fibers at places interspersed with round, stellate shaped cells. Stroma in deeper region is

fibrous with numerous bundles arranged haphazardly suggestive of “Fibroepithelial Hyperplasia”.



Fig. 3 : Histopathological Section



Fig. 4 : Postoperative occlusal view

Case Report - 2

A 23 year old female patient reported with a chief complaint of swelling in the upper front region of mouth. Patient gives a history of initiation of growth three months back. The growth was insidious in onset and increased to the present state gradually. She also complains of bleeding during brushing. No relevant medical and dental history was found.

CLINICAL EXAMINATION

On extraoral examination a symmetrical profile was appreciated. Intraoral examination revealed a soft, non tender, pinkish color gingival enlargement involving upper anterior facial region of oral cavity. Lesion involves interdental papilla and marginal gingiva of 11 and 21 region. The lesion was 9mm in length and 8mm in width. Local deposits were present in both the arches.



Fig 5: Preoperative View

PERIODONTAL MANAGEMENT

Initially a thorough scaling and root planning were done carefully to eliminate local irritating factors. The patient was educated for good oral hygiene practices.

An excisional biopsy was performed in relation to 11-21 regions on facial aspect under strict aseptic conditions under local anaesthesia (lignocaine and adrenaline 1:80,000). The excised tissue was preserved in 10% formalin and sent for histopathological examination. Periodontal dressing was placed.

Patient was advised to take antibiotic-analgesic regimen (Amoxicillin 500mg three times a day, and Ibuprofen 250mg+Paracetamol 250mg) for five days along with 0.2% chlorhexidine mouth rinse twice daily for two weeks post operatively. Postoperative healing was uneventful after 1 week recall. Six months follow up did not show any recurrence.



Fig. 6 : Excised Lesion

HISTOPATHOLOGICAL EXAMINATION

H and E stained sections show proliferative para keratotic stratified squamous epithelium. Proliferation of spindle shaped stromal cells are noted. Irregular hematoxyphillic globules of cementoid like material are evident within stromal cells. Intense chronic inflammatory infiltrate is noted within connective tissue. Overall features are suggestive of "Cementifying Fibroma".



Fig. 7 : Histopathological section



Fig. 8 : Postoperative occlusal view

Case Report - 3

50 year old female patient reported with a chief complaint of swelling in upper front region of mouth. Patient was alright three months back when she noticed a small growth due to trauma during mastication. Gradually the size was increased. There was no pain but she complains of difficulty in mastication and she also noticed bleeding during brushing and mastication. No relevant medical and dental history was found.

CLINICAL EXAMINATION

Extraoral examination revealed a symmetrical face. Intraoral examination revealed pedunculated, soft, non-tender, pinkish color gingival enlargement involving upper anterior palatal region of oral cavity. Swelling extends from mesial region of 21 to distal region of 22 on palatal aspect involving marginal and interdental gingiva of 21-22 region which was 10mm in length and 8mm in width. Local deposits were noticed in both arches.



Fig. 9 : Preoperative View

PERIODONTAL MANAGEMENT

Recurrent bleeding from the lesion may necessitate excision and cauterization sooner, however if aesthetics are a concern, then treatment may be pursued as well. Usually, only minor surgery may be needed, along with scaling to remove any calculus or other source of irritation.

The excisional biopsy was performed in relation to 21-22 region on palatal aspect under strict aseptic conditions under local anaesthesia (lignocaine and adrenaline 1:80,000). The excised tissue was kept in 10% formalin and sent for histopathological examination.



Fig:10 Excised Lesion

Patient was advised to take antibiotic-analgesic regimen (Amoxicillin 500mg three times a day, and Ibuprofen 250mg+Paracetamol 250mg) for five days. And to use 0.2% chlorhexidine mouth rinse twice daily for two weeks post operatively.

After one week initial healing was satisfactory. Postoperative period was uneventful and there was no recurrence observed after 6 months follow up.



Fig : 11 Post Operative View

HISTOPATHOLOGICAL EXAMINATION

H and E stained section shows parakeratinized stratified squamous epithelium and underlying dense cellular connective tissue. The connective tissue consists of numerous vascular channels mainly capillaries and extensive endothelial cell proliferation with dense inflammatory cell infiltration and extravasated RBC's. The overall features are suggestive of PYOGENIC GRANULOMA (Lobular Capillary Hemangioma).

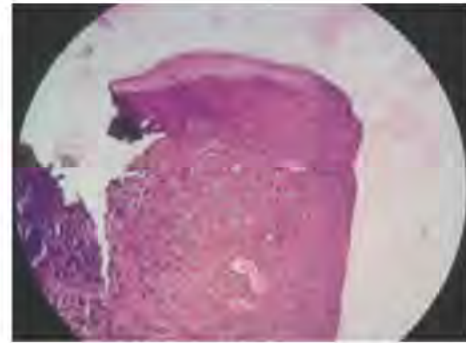


Fig:11 Histopathological Section

Discussion

According to Galen, the term epulis designated a tumor on the gums. It represents focal fibrous hyperplasia due to trauma or local irritation. Fibro-epithelial hyperplasia is a histological variant of fibroma and a proliferative fibrous lesion of the gingival tissue that causes esthetic and functional problems. They may be either generalized or localized. And found in 1.2% of adults[2]. Reactive lesions are clinically and histologically non neoplastic nodular swellings that develop in response to chronic and recurrent tissue injury which stimulates an exuberant or excessive tissue response[7]. They are clinically similar but possess distinct histopathological features.

Differential diagnosis of fibroma includes: giant cell fibroma, neurofibroma, peripheral giant cell granuloma, mucocele, lipoma, or salivary gland tumor. Histologically, fibroblasts scattered in a dense, collagenous matrix, mild chronic, inflammatory infiltrate may be present, but is not a consistent finding. Treatment is surgical excision and a low recurrence rate is expected[6].

Fibro epithelial hyperplasias are reactive/ inflammatory conditions and they give rise to variety of lesions named according to their clinical presentation. Most of these lesions arise on gingiva, reflecting universal presence of inflammation in the interdental papillae. Lesions are associated with local predisposing factors like mal-aligned teeth, illfitting restorations or calculus which prevent removal of bacterial plaque and indirectly induce inflammation. In the present cases sub-gingival deposits were present explaining the possible etiologies[1,8]. Furthermore, the term fibro-epithelial hyperplasia should not be confused with focal epithelial hyperplasia which is caused by HPV virus. The histopathological features are quite distinct but considerable overlap still exists among these lesions.

Hepatitis B is an infectious inflammatory illness of the liver caused by the hepatitis B virus (HBV).

The virus is transmitted by exposure to infectious blood or body fluids such as semen and vaginal fluids, while viral DNA has been detected in the saliva, tears, and urine of chronic carriers. Perinatal infection is a major route of infection with the other risk factors being working in healthcare setting, transfusions, dialysis, acupuncture, tattooing, sharing razors or toothbrushes with an infected person[11]. Patient is HbsAg-positive but HbeAg-negative i.e. patient is in carrier stage so there is no need to undergo any medical treatment. As there exists chances of cross infection during dental treatment Z-kit was used by the operator and assistant.

Peripheral cementifying fibroma is defined as a solitary lesion of the gingiva thought to arise from periodontal ligament, most commonly at the region of interdental papilla[3]. Peripheral cementifying fibroma is either pedunculated or sessile. The surface may be smooth or ulcerated and pink to red in color 4. The lesion occurs predominantly in second decade of life and have a mild female predisposition. This lesion mostly occurs in the anterior maxillary region[9].

Some authors have reported recurrence rates varying from 8.9% to 20%. It probably occurs due to incomplete initial removal, repeated injury or persistence of local irritants[10].

The appearance of pyogenic granuloma is usually a color ranging from red/pink to purple, and can be smooth or lobulated. Younger lesions are more likely to be red because of the high number of blood vessels. Older lesions begin to change into a pink color. Size ranges from a few millimeters to centimetres[5]. This is not to say that the pyogenic granuloma cannot be bigger but it is more common to see one within these measurements. It can be painful, especially if located in an area of the body where it is constantly disturbed. Pyogenic granulomas can grow rapidly and will often bleed profusely with little or no trauma[4,8].

It is most likely to occur in children and younger adults, and there is a definite gender difference with more females affected than men. In pregnant women, it is most likely to occur in the first trimester with an increasing incidence up until the seventh month. Pyogenic granulomas appear on the gingiva in 75% of cases, more often in the maxillary than mandibular jaw. Anterior areas are more often affected than posterior areas. It can also be found on the

lips, tongue, and inner cheek. Poor oral hygiene or trauma is usually precipitating factors. The lesion may have a fibrous character if it is of longer duration, and the surface may have ulcerations[4,8].

Conclusion

The diverse histological entities that we observe of reactive hyperplasia may be due to connective tissue response to varied intensities of gingival irritation like trauma, calculus, plaque etc. This response may be influenced by certain endocrine hormones. Distinction between hyperplasia and neoplasia needs to be clearly defined as neoplasias are not self limiting conditions and long standing hyperplastic lesions in presence of chronic irritation can get converted to neoplasia. In addition to the physical characteristics of the lesion, the patient's demographics, presence of associated symptoms, related systemic disorders, and location and growth patterns of the lesion all give clues to adequately diagnose and treat their typical histopathologic architecture. A biopsy will ensure a better and a more ideal treatment plan for the patient and prevent recurrence of these lesions.

Because the conditions described here, are of both epithelial and connective origin, chances that it may transform into neoplasia are quite high. Further studies are needed to confirm this hypothesis.

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