

## IDIOPATHIC GINGIVAL HYPERPLASIA

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### ABSTRACT

*Generalized gingival enlargement can be caused by a variety of etiological factors. It may exist as an isolated abnormality or as a part of a syndrome. Patients with gingival hyperplasia should be examined to exclude other reasons for gingival enlargement. Surgical intervention is indicated if mechanical and esthetic problems exist such as difficulty in mastication, speech, swallowing and performing oral hygiene measurements.*

*We present a case series of 8 patients who reported to the Department of Periodontology, Khyber College of Dentistry during the year 2012 with the chief complaint of gingival overgrowth. Most of them were found with generalized diffuse gingival enlargement. All of them gave the history of gingival swelling over the last 2-3 years. The diagnoses were made based on clinical examination and after ruling out drug and family history. Different periodontal surgical procedures were performed including gingivectomies, bevel flap, apical reposition flap, distal wedge procedure, undisplaced flap and osseous recontouring. All of these cases were treated under Local Anesthesia except one who was treated under general anesthesia.*

### INTRODUCTION

Hereditary gingival fibromatosis, also known as familial or idiopathic gingival fibromatosis, is a rare oral condition characterized by progressive enlargement of the gingiva caused by an increase in submucosal connective tissue elements. Males and females are equally affected with 1 per 750,000 individuals world wide<sup>1,2</sup>. The enlargement can be localized or generalized. It is not painful until the tissue enlarges, covers the occlusal surfaces and becomes traumatized during mastication. It also interferes with the speech, mastication and maintenance of oral hygiene. All of these factors favor accumulation of plaque which further complicates the situation.

Gingival fibromatosis may also be observed together with a wide variety of genetically inherited disorders, such as cherubism, hypertrichosis, sensorineural hearing loss, Laband syndrome, Ramon syndrome associated with juvenile rheumatoid arthritis, Klippel-Trenaunay-Weber syndrome and psychomotor retardation<sup>3,4</sup>. While the cause of the disease is unknown, there appears to be a genetic predisposition<sup>5,6</sup>.

Gingival hyperplasia is a rare condition and may create cosmetic and mechanical problems which ultimately affects social life of the patient. In some pathological conditions, gingivitis caused by plaque accumulation can be more severe. In puberty and pregnancy, hyperplasia of the gingival tissues may be due to poor oral hygiene, inadequate nutrition, or systemic hormonal stimulation<sup>7,8</sup>. Gingival enlargements are also seen in blood dyscrasias e.g. leukemia, thrombocytopenia or thrombocytopathy<sup>9</sup>. Other etiological factors include bacterial plaque<sup>10,11</sup> uncontrolled Diabetes<sup>12</sup>, drug induced e.g. phenytoin<sup>13</sup>, cyclosporine<sup>14,15</sup> and nifedipine<sup>16</sup>.

A case series of eight patients is presented here. These cases, on the basis of medical, family, drug history, clinical and histological findings, were diagnosed as idiopathic gingival enlargement.

### CASE 1

A 13 years old female patient reported to the Department of Periodontology with the chief complaint of swollen gums since two years. Her medical and drug history were non-significant. Intraoral examination revealed generalized gingival hyperplasia involving all the three quadrants except upper left quadrant. Lower right and left 2<sup>nd</sup> premolar were congenitally absent. Gingiva was pale pink and of mixed consistency i.e. fibrotic and edematous.

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Phase 1 therapy was provided to the patient. After two weeks patient was recalled and prepared for the surgery. Quadrant wise flap surgery was performed under Local Anesthesia. In 1<sup>st</sup> quadrant two procedures were performed, Undisplaced flap and Osseous recontouring on the buccal side and bevel flap on the palatal side. After two weeks surgery was performed in the lower right quadrant. Procedures adopted were apical reposition flap and distal wedge procedure. Third surgery was performed in lower left quadrant. This time apical reposition flap and osseous recontouring was carried out.

Histopathological findings revealed multiple fragments of fibrous tissue infiltrated by lymphocytes with focally increased chronic inflammation, some granulation tissue formation and 2 tiny foci overlying benign squamous epithelium. Tiny bony trabeculae were also seen in the deeper area in one focus.

### CASE 2

A 7 year old female patient reported to the Department of Periodontology with the chief complaint of gingival enlargement involving her upper and lower anterior teeth since last two years. On examination generalized diffuse fibrotic enlargement of the gingiva involving upper and lower anterior arches were revealed. The gingiva was pink and had firm and fibrous consistency. Scaling was done in 1<sup>st</sup> appointment, on 2<sup>nd</sup> visit apical reposition flap was performed in the lower arch using periodontal surgical instruments.

In upper quadrant both palatal and buccal sides were involved. Apical reposition flap was performed on the buccal side and simple gingivectomy was performed on the palatal side.

### CASE 3

A 34 years male reported to the Department of Periodontology with the chief complaint of gingival swelling since 2 years. Extra oral examination revealed no abnormality. Intra oral examination revealed moderate plaque accumulation with bleeding on probing. Gums were inflamed, rolled, and of mixed type (fibrotic edematous). No significant medical and drug history was present. Patient was provided phase 1 therapy and was prepared for the surgery after two weeks. Surgery was performed in the upper anterior and right quadrants both on buccal and palatal sides

including undisplaced flap and simple gingivectomy respectively. Continuous sling sutures were provided and periodontal pack was placed to reduce the discomfort of the patient

### CASE 4

A 21 years female student from skhakot presented with swollen gums in right upper quadrant since 2 years. She had mild plaque and calculus deposits and bleeding on probing. No significant medical and drug history was present. Gingiva was pink fibrotic and bulbous. Phase 1 therapy was provided to the patient and she was prepared for the surgery after a two weeks time. Undisplaced flap procedure and root planning was performed at the buccal side with the help of gracy currets and simple gingivectomy procedure was performed on the palatal side. Continuous sling sutures were provided and periodontal pack was placed to reduce the discomfort of the patient.

### CASE 5

A 17 years young female reported to the Department of Periodontology with the chief complaint of gingival and facial swelling of the left side of the face. She also complained of difficulty in mastication and speech. On extra oral examination facial asymmetry was observed. Intra oral examination revealed massive swelling on left side covering all the teeth in both upper and lower quadrants. She was treated for this condition two years back but recurred after six months. Phase 1 therapy was provided to the patient and she was prepared to be operated under General Anesthesia.

Under aseptic conditions patient was given GA, LA was given to reduce the bleeding. A straight incision was given to remove the excess mass then internal bevel incision for thinning of the tissue and finally apical reposition technique was adopted. Same procedure was performed in the lower quadrant. During surgery multiple teeth were extracted because of severe bone loss and poor prognosis for retention. Continuous sling sutures were provided and periodontal pack was placed to reduce the discomfort of the patient.

Histopathological findings revealed squamous mucosa showing focal ulceration with underlying tissue shows proliferation of haphazardly arranged

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spindle cells in a collagenized stroma. The individual spindle cell show oval to elongated bland nuclei, inconspicuous nucleoli and eosinophilic cytoplasm. There are scattered acute and chronic inflammatory cells and few thin walled vessels in the background. The findings favored fibrous epulis.

#### CASE 6

A 10 years old female from hangu reported to the Department of Periodontology with the chief complaint of gingival overgrowth in the upper and lower right quadrants for the last three years as per her attendant statement. Patient was given initial treatment including scaling and oral hygiene instructions. In the next visit surgery was performed in the upper right quadrant using apical reposition technique on the buccal side and gingivectomy on the palatal side. After two weeks surgery was performed in the lower right quadrant involving both buccal and lingual sides using apical reposition technique and a distal wedge procedure. A mass of excised tissue was sent for histopathological examination which revealed pseudo-epitheliomatous hyperplasia, ulceration and underlying tissue shows fibroconnective and collagen proliferation and variable degrees of cellular inflammatory infiltrate. No evidence of malignancy seen.

#### CASE 7

A 14 years male reported to the Department of Periodontology with the chief complaint of gingival swelling and bleeding gums. On examination plaque accumulation and bleeding on probing was detected. Teeth were malaligned which were also a contributing factor to plaque accumulation. No significant medical or drug history was provided. Gingiva was inflamed, red, rolled, and mixed type i.e. both fibrotic and edematous. Tissue type was thick. Patient was provided initial treatment of scaling and oral hygiene instructions. Surgery was performed in the upper anterior quadrant using apical reposition flap on the buccal side and gingivectomy on the palatal side. Continuous sling sutures was provided and periodontal pack were placed to reduce the discomfort of the patient.

#### CASE 8

A 17 years male reported to the Department of Periodontology with the chief complaint of gingival overgrowth since the last 2 years. He also complained of difficulty in mastication and speech. Extra oral ex-



Fig. 1 Pre operative



Fig. 2: Post operative

amination revealed an incompetent lip seal. On intra oral examination firm fibrous pink gingiva was revealed. Teeth were almost covered by the gingiva. Patient was prepared for the surgery. A straight incision was given to remove the excessive tissue. The internal bevel incision was given for the thinning of tissue and finally the apical reposition flap was carried out. Simple gingivectomy was performed on the palatal side. Same procedure was adopted in the lower quadrant. Continuous sling sutures were given and periodontal pack was applied to reduce the discomfort of the patient.

### DISCUSSION

Gingival overgrowth varies from mild enlargement of a segment to a uniform and marked enlargement affecting one or both of the jaws. The exact mechanism of Idiopathic gingival fibromatosis is unknown. Hyperplastic response occurs only within the attached gingiva and the periodontal ligament is not involved<sup>17</sup>. IGF may hinder tooth eruption, mastication and oral hygiene procedures. Sometimes it hinders the eruption of the dentition which may be the chief complaint of the patient<sup>18</sup>.

As the family, medical and drug history were non significant to these cases, therefore they were termed as Idiopathic gingival fibromatosis. IGF may be congenital or hereditary, though the genetic mechanism is not well understood. Some authors have proposed

mode of transmission as mainly autosomal dominant suggesting abnormal chromosome on phenotype 2p21<sup>19-20</sup>.

These patients were undergone through several investigations including detailed medical and drug history, complete blood profile and excisional biopsy. On the basis of these investigations all the eight cases were labeled as Idiopathic Gingival Hyperplasia.

Sometimes, gingival enlargement does not occur until the eruption of the primary<sup>21</sup> or permanent<sup>22</sup> dentition occurs. Similar pattern was observed in this case series. Massive gingival enlargement in affected patient usually develops an abnormal swelling pattern and difficulty in speech and mastication<sup>13</sup>. Severe gingival hyperplasia of an aberrant swelling was seen in 2 patients of the present case series, who also had impediment to their masticatory and speech patterns.

Zachin and Weisberger<sup>23</sup> reported that histologically, gingival enlargement is mainly due to an increase and thickening of collagen bundles in connective tissue stroma. In the present case series the specimen of case No. 1 and case No. 5 were sent for histopathology report. The histopathological examination revealed hyperplastic and hypertrophied collagen (proliferation) which correlates with the study of Zachin and Weisberger.

Appropriate time of the removal of recurrent gingival enlargement varies. Emerson<sup>24</sup> recommended that the best time is when all the permanent teeth have erupted. In this study 2 out of 8 patients were found in mixed dentition stage. In case no 3 prime concern was esthetics which motivated the patient for surgical intervention while in case no 6 patient developed ulceration and abscess formation of the involved side due to traumatic bite which compelled the patient for surgical intervention.

Idiopathic gingival hyperplasia leads to impaired appearance and function, which often demands surgical intervention. Although surgical intervention is the only option to restore the esthetics and function, the patient still carries the risk of recurrence.

In all these cases there was no facial asymmetry except (case no 5) or swelling/swollen lymph nodes. There was normal jaw opening with no clicking or crepitus. Phase 1 therapy was provided to all the patients including scaling/root planning , recontouring

defective restorations and obturation of carious lesions. Prosthetic options had been halted till the stabilization of their periodontal problem as correction/stabilization of the periodontal health is the primary concern for success of restoration/prosthetic procedures. After assessing the basic investigations, past medical and dental history the patients were then prescribed special investigations (including Full blood profile and various radiographs both periapicals and OPG) tailored to the specific case at hand.

On the basis of all these findings patients were diagnosed as cases of “Idiopathic Gingival Hyperplasia”

## CONCLUSION

Presented cases were of nonsyndromic Idiopathic gingival enlargement. Treatment was complete excision which appreciably improved the aesthetic and masticatory competence. After treatment, regular recalls are necessary in order to evaluate oral hygiene and the stability of the treatment provided to the patient.

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