

Case Report

An Unusual Rare Case of Hyper Stippled Gingiva In Abnormal Dental Occlusion Requiring A Single Tooth Supported Restoration

¹Rimah T Rabi, ²AH Zameem, ³Noor Alfalam, ⁴Zahra Awaji

^{1,2}Clinical Fixed Prosthodontics, Department of Prosthodontics, College of dentistry, KKU, SA

^{3,4}Clinical Periodontology, Department of Preventive Dental Sciences, College of dentistry, KKU, SA

ABSTRACT:

The presence of a normal healthy gingiva is mandatory before instituting any restorative treatment in the permanent dentition. The parameters for gingival health is determined by many variables, one of which is the stippling of gingiva. Stippled gingiva indicates absence of inflammatory or non-inflammatory underlying pathology. Exaggerated stippling of gingiva is seen rarely associated with a class 1 malocclusion. We present a case of an adult female patient who had a class 1 malocclusion with crowding of maxillary and mandibular anterior teeth. The patient required a single crown for an endodontically treated tooth. The patient was strongly recommended to undergo orthodontic correction of maxillary and mandibular teeth before undergoing any restorative procedure which she refused. Due to the existing occlusal discrepancy, the restoration was compromised in terms of developing occlusal anatomy. Gingival condition of hyper stippling was noncontributory to the treatment planned. The endodontically treated molar was restored with a metal, ceramic single crown.

Keywords: cast restoration, attached gingiva, metal ceramic, orthodontics, occlusion, malocclusion

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Corresponding author: Zahra Awaji, Clinical Periodontology, Department of Preventive Dental Sciences, College of dentistry, KKU, SA

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INTRODUCTION

The development of face takes place from multiple developmental arches which increases its complexity in terms of any developmental abnormality. The development process in its routine needs to develop five (oral cavity, frontonasal and maxillary processes, mandibular arch and nose) separate organs at different time intervals.¹ Since the skeletal component of the maxilla and the mandible is affected by developmental anomalies, the space that is available for deciduous, the mixed or permanent dentition is also affected.² Class 1 malocclusion is one of the most common form seen in which the teeth may present in different abnormal positions (spacing, crowding). Abnormal tooth positions are not desired in fixed prosthodontic treatments since they influence the bio mechanics of the prosthesis. Abnormal tooth positions also affect periodontal health and its maintenance of a patient.³ Patient awareness about

their respective medical or dental treatment has increased substantially with the use of internet, social media and other resources.⁴ Not only the patient has access to information about his anticipated medical or dental treatment, but there are organizations who provide patient with substantial information about his medical condition and the relative outcome of such condition.⁵ Dental patients have also been reported to have a better understanding of how their natural dentition plays major role in facial aesthetic and overall appearance.⁶ Evidence shows that some patients may be so concerned about their appearance that they seek treatment for even physiological conditions related to gingiva like hyperpigmentation.^{7,8} There are enough studies in implant fixed Prosthodontics that are totally focussed on creating gingival contours and emergence profiles around implant abutments to enhance gingival aesthetics.^{9,10} In conventional tooth supported fixed Prosthodontics,

one of the major concerns is the encroachment of biologic width by the fixed partial denture (FPD) and its relative effect on gingival health.¹¹ On the other hand there are clinical situations where it is important to place margins subgingivally to either cover existing caries, to increase retention of the crown or to enhance aesthetics.¹² In many clinical situations, the patient may be required to undergo intentional crown lengthening surgeries to improve the crown root ratio of the FPD restorations.¹³

The presence of normal variations of gingiva are not common, and some of them are rare. They may occur in association to skeletal or dental malocclusion or may occur without any association to systemic or local abnormality. This article presents a unique case of exaggerated stippling of marginal and attached gingiva in association with a skeletal and dental malocclusion. The patient required a single mandibular crown for an endodontically treated tooth as part of conventional fixed partial denture treatment.

CASE REPORT

A young female patient aged 35 years old was referred for placement of single crown on an endodontically treated mandibular right first molar. Patients medical, social, drug and other related histories were insignificant to a current treatment plan. The patient reported in her dental history that she had never sought any dental treatment in the past. She used to maintain oral hygiene by daily use of brush with toothpaste. Extra oral examination

revealed incompetent lip position at rest (Fig 1A), and a gummy smile (Fig 1B) during smiling. The patient had crowding of both maxillary and mandibular arches especially with anterior teeth (Fig 1C, D, E). All maxillary and mandibular anterior teeth did not show normal positioning in their respective arches. The patients marginal and attached gingiva in the mandibular anterior region showed a very unique and rare appearance of extremely exaggerated stippling with no evidence of any inflammatory or non-inflammatory underlying pathology (Fig 1C). Except for mandibular right central incisor, the gingiva looked fibrous, and healthy. The marginal gingiva around the mandibular right central incisor presented a picture of the absence of stippling without any evidence of oedema or inflammation. The patient had undergone root canal treatment in relation to mandibular right first molar after having been diagnosed with irreversible pulpitis. The patient was presented with treatment options of possible orthodontic correction of her teeth which she refused. The patient was treated for single crown in relation to mandibular right first molar using routine clinical and laboratory procedures. A full coverage metal (Remanium CSe, Dentaurem J.P. Winkelstroeter KG, Ispringen, Germany) ceramic was planned and placed using supragingival margins (Fig 1F). The crown was cemented using zinc polycarboxylate cement (Poly F Plus; Dentsply DeTrey GmbH, Konstanz, Germany) as part of definitive cementation.

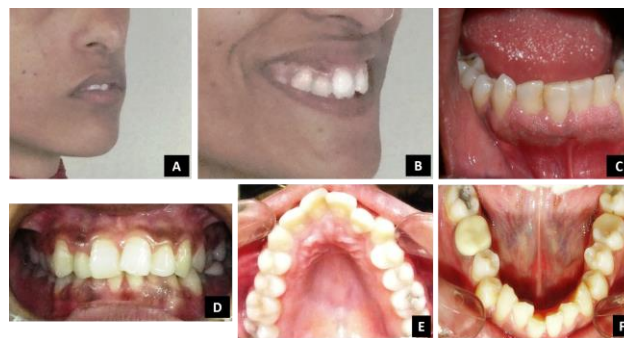


Figure 1: (A) Extra oral view showing incompetent lips upon normal lip position (B) extra oral view showing gingival smile (C) Hyper stippled gingiva (D) Frontal view of maxillary and mandibular anteriors (E) Occlusal view of maxillary arch (F)

DISCUSSION

A case of a physiological variation of gingiva in relation to mandibular completely dentulous arch has been presented. The patient required a single crown for an endodontically treated mandibular right molar which was successfully restored with a metal ceramic crown. The presence of a healthy periodontium is

essential for the longevity of a fixed partial denture. Any restoration has to be biocompatible with surrounding alveolar bone and overlying gingiva since both can affect each other. Moreover, if the underlying periodontium experiences bone loss around the restoration, the purpose of maintaining esthetics is also lost. Alveolar bone loss around the FPD renders it unaesthetic and difficult to maintain in terms of oral hygiene. One of the primary limitation of this case was patient not willing to undergo orthodontic correction, which was highly desired in terms of correcting the patient's facial aesthetics as well as establishing occlusion. Restorations placed in an occlusion that is impaired can add to the problems

rather than solving them. In natural dentition, a mutually protective occlusion is desired in which the teeth protect each other. In this case although the patient had an effective posterior protection there were still elements of lateral excursions that did not produce effective results. During lateral movements of the mandible, the patient guidance was narrow which limited placement of correct occlusal anatomy on the crown. The crown lacked proper and efficient cuspal anatomy as they were interfering with lateral mandibular movement during the excursion. Like in development of artificial occlusion in complete denture prosthesis or a full mouth rehabilitation, it is important that both static and dynamic tooth positions contribute to the equilibrium and stability of the prosthesis.^{15,16} Fixed restorations including implant supported restorations have been subjected to criticism when they are placed in compromised occlusion.¹⁷ Various abnormalities in the tooth (size, shape, contours) not only have been found to alter mandibular movements but also have been shown to alter contacts and contours in a healthy dentition.¹⁸ Many patients do not prefer orthodontic treatment mainly due to the economic factor and the time consumption for the treatment process. Moreover, many have been reported to not undergo orthodontic treatment for higher failure rates that it has been associated with.¹⁹ Minor alterations in natural tooth contours in critical areas like palatal aspect of maxillary canine or buccal surface of mandibular canine alters patients' occlusal protection.²⁰ Therefore, it is mandatory that for any fixed restoration the occlusion should be brought to a normal and ideal position before initiating any restoration within the occlusion.

CONCLUSION

Periodontal health is significant for long term success of restorations. Minor alterations that may be physiological in nature should be identified and verified for any underlying pathology before initiating any restorative treatment. Since this case presented a normal gingival variation in the anterior region, it had no bearing on the posterior segment where the restoration was placed.

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CONFLICT OF INTEREST

None

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