

Management of gingival polyp in restoration procedure: A case report



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Abstract

Objective: Gingival Polyp, which are focal fibrous hyperplastic lesion, are also known as, localized gingival enlargement. Represent a reactive hyperplasia of fibrous connective tissue in response of trauma or irritation. The gold standard for its treatment is surgical excision performed with a scalpel, electrocautery or lasers. This case report presents treatment for proximal carious teeth with gingival polyp.

Methods: A 20 year male patient reported to Conservative Department. He complained of proximal cavity, mild sensitivity to cold, painless growth of the gum in lower right back tooth region. An oral examination revealed a reddish- pink soft gingival overgrowth of 5x4 mm in size, localized to interproximal area and presenting with a

pedunculated base with relation to teeth 45. Summating the clinical presenting features, a provisional clinical diagnosis of gingival polyp was made.

Results: First treatment was caries cleansing, then the cavity was closed with cotton with dripped of eugenol. The gingival polyp are smaller than before. Then a local anesthetic is performed to remove the remaining gingival polyp tissue. Gingival polyp are cut using an excavator and restoration cavity using composite.

Conclusion: Eugenol exerts a beneficial action on anti-inflammatory so could reduce the edema of gingival soft tissue. The treatment acceptance but the expected results are still not maximal so that it still needs to excision.

Keywords: Eugenol, Gingiva, Polyp

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Introduction

The polyps are the body's reaction to fight physically infection by forming granulation tissue to locating infections. It usually associate with young pulps which are rich blood vessels, adequate open space for drainage, and tissue proliferation. There are described under two types, pulp polyp and gingival polyp. Pulp Polyp are that grow from dental pulp. Gingival polyp are that grow from pulp gums. Gingival polyp formed by localized chronic inflammation soft tissue in gingiva. Localized reactive soft tissue lesions are described under four categories, focal fibrous hyperplasia, pyogenic granuloma, peripheral ossifying fibroma and peripheral giant cell granuloma.^{1,2}

Gingival Polyp, which are focal fibrous hyperplastic lesion, are also known as, localized gingival enlargement or epulis. It merely represent a reactive hyperplasia of fibrous connective tissue in response of trauma or irritation. The primary reason for the occurrence of gingival polyp is attributed to local factors such as caries, overhanging margin, calculus and tooth malposition.² Gingival polyp can grow in the proximal tooth cavity near the gum area like as class II cavity. Sometimes, It swollen pale pink gums, enlarge to fill the area in the tooth cavity. It generally occurs in border area cavity of the teeth with neighboring teeth (class II cavity).³

Enlargement of the gum can be reduced by incision, minor surgical procedures, undergone anesthetized conditions. The gold standard for this treatment is surgical excision performed with a scalpel, electrocautery or lasers. The procedure resection of gingiva away from the tooth surface to expose the cervical portion of tooth in order to have proper marginal finish to the restoration. After incisional procedure to gingival polyp, treatment of teeth are continued. Next treatment of the teeth depends condition the tooth whether vital or not. Treatment also accordance with the results of the objective examination and diagnose. The tooth is diagnosed reversible pulpitis, these treatment is direct restoration or indirect restoration. Whereas, the tooth on irreversible pulpitis or non-vital teeth, root canal treatment should be done. This case report presents treatment for proximal carious teeth with gingival polyp.^{4,5}

Case Report

A 20-year male patient reported to Conservative Department, Dental Hospital Jenderal Soedirman University. He complained of proximal cavity, mild sensitivity to cold, painless growth of the gum in lower right back tooth region. On further elucidation of the history, he complained of bleeding from

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the gingiva associated with the growth on brushing. Her medical history was non contributory. An oral examination revealed a reddish- pink soft gingival overgrowth of 5x4 mm in size, localized to interproximal area and presenting with a pedunculated base with relation to teeth 45. Summating the clinical presenting features, a provisional clinical diagnosis of gingival polyp was made. Positive Pulp vitality is testing by Etyl Chloride. After thorough examination and deliberation, it was decided to restore 45.

Case Management

The procedure was explained and informed consent taken from the patient. On the first visit, the patient was examined and the first treatment was caries cleansing. We applied cotton with dripped of eugenol, and a temporary restoration in cavity, then instructed to control one week after treatment. The second visit, temporary restoration was opened and eugenol was taken. The gingival polyp are smaller than before. Then, a local anesthetic is performed to remove the remaining gingival polyp tissue. Gingival polyp are cut using an excavator. After that, a cavity was prepared in 45, which was followed by etching with 37% phosphoric acid and bonding with 3M Universal bond, and restoration was using composite solare shade A3.

Oral mucosa obtain external and internal stimulating element which can manifests a disease that range from developmental, reactive and inflammatory to neoplastic changes. Reactive hyperplastic lesions represent the most frequently encountered oral mucosal lesions in humans.⁶ Reactive lesions are commonly seen in the gingiva and their occurrence in other places of the oral cavity, such as the tongue, palate, cheek and floor of the mouth is less common. Reactive lesions are tumor-like hyperplasia that are produced in association with chronic local irritation or trauma, low-grade injury like chewing, trapped food, calculus, fractured teeth and iatrogenic factors, refitting denture and overhanging dental restorations. Characteristic of these lesion are painless pedunculated or sessile masses in different colors, from light pink to red.^{7,8} Reactive



Figure 1 Chronic hyperplastic pulpitis on 46



Figure 2 Gingival Polyp

lesions of the oral cavity include epulis fissuratum, inflammatory papillary hyperplasia and inflammatory fibrous hyperplasia.⁹ Fibrous hyperplasia localize in gingiva is a fibro-epithelial polyp. This lesion have a representation similar with chronic hyperplastic pulpitis, so many clinician difficult to determine it. Chronic hyperplastic pulpitis is characterized by the development of granulation tissue, covered at times with epithelium and resulting from long standing, low grade irritation. Hyperplastic pulpitis (pulp polyp) is the most visually dramatic of all pulp response, rising out of the carious shell of the crown and is a “mushroom” of living pulp tissue that is often firm and insensitive to touch. Its colour may vary from cherry red of the granulation tissue to opaque whiteness of moist keratinized epithelium, depending on the degree to which the appearance of the granulation tissue is modified by its covering [figure 1](#).¹⁰ Pulp polyp occurs as a result of an open cavitated carious lesion which acts as a pathway for escape of the inflammatory exudate, tooth fracture due to trauma with pulpal exposure and even long standing fractured restoration can lead to pulpal stimuli and result in pulpal reactions causing pulp polyp.¹¹

A fibro-epithelial polyp or fibrous hyperplasia localize in gingival, gingival polyp, is the most common benign soft tissue tumor seen in the oral cavity. The lesion present a painless, pink,

Table 1 Different Characteristic Pulp Polyp and Gingival Polyp

Characteristic	Hyperplastic pulpitis (pulp polyp)	Fibro-epithelial polyp (Gingival Polyp)
Form	Irregular shape like “Mushroom”	Smooth, swelling that can be firm
Colour	Cherry red	Pink
Origin	Living pulp tissue	Gingiva Tissue

pedunculated swellings that can be firm and soft consistency [figure 2](#).^{2,12} Gingival polyp is result of chronic process in which an exaggerated repair occurs, include granulation tissue and formation of scar.⁷ It usually occur before the fourth decade of life and its prevalence is not sex-specific. In this case, patient were 20 years old. The treatment modalities of gingival polyp is the excision. Excision must have perfect removal of the lesion, minimal operative time, bloodless, painless, quick recovery, and good healing from treatment.^{13,14} Different clinical these were possible which included pulp polyp or gingival polyp [table 1](#). Radiographic may help to diagnosed its.

Discussion

First visit in this case, patient was treatment with eugenol for cavities dressing to reduce swelling of gingival polyp. Eugenol is a major ingredient of dental materials such as, filling materials, dental cements, endodontic sealers, periodontal dressing materials and dry socket dressings. Eugenol has sedative, anodyne effect, and antibacterial properties.¹⁵ Eugenol significantly attenuates the acid production, adherence and water-insoluble glucan synthesis activities of *S. mutans* and suppresses dental caries development.¹⁶ Eugenol could reduce the incidence of alveolar osteitis, pain, inflammation, infection, and better wound healing, inhibited the inflammation, and reducing the edema formation.¹⁷ Eugenol has anti-inflammatory activity by inhibiting the PMN infiltration and apoptosis through caspase-3 cleavage but limited the effects against oxidative stress. Both, eugenol can modulate the macrophage functions and regulates negatively the inflammation. Macrophage is one of the immune system cells that contribute to the production of mediators proinflammatory cytokines and nitric oxide, which are important to cellular and vascular during progression of inflammatory process.^{18,19}

After one week, our present case report, gingival polyp was become small, but need to excision to give better accessibility, visibility and ease of operation to restore cavity. Resection of gingiva is away from the tooth surface or deepening of gingival sulcus to expose the cervical portion of tooth. This result has proper marginal finish to the restoration or by establishing a good cervical cavosurface margin to the tooth preparation. Therefore, a minimum width of 3 mm (including the depth of the gingival sulcus) must be maintained from the preparation margin of any restoration.²⁰ The composite restoration give the optimal aesthetics and functions of the tooth. Hence, this paper highlights about the involved in

the management of proximal carious lesion with gingival polyp in young aged adults.

Conclusion

Our case report has a fact that eugenol exerts a beneficial action on anti-inflammatory so could reduce the edema of gingival soft tissue. The treatment acceptance but the expected results are still not maximal so that it still needs to excision.

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Conflict of Interest

The authors report no conflict of interest.

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