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CASE REPORT AND
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ORALNI PIOGENI GRANULOM: PRIKAZ SLUČAJA I PREGLED LITERATURE

ORAL PYOGENIC GRANULOMA: A CASE REPORT AND REVIEW OF LITERATURE

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Sažetak

Uvod: Piogeni granulom je uobičajena neoplastična izraslina u usnoj duplji, koja je po prirodi hiperplastična. Predložene su različite teorije etiopatogeneze za piogeni granulom. Obično se smatra da nastaje kao odgovor na različite lokalne iritanse, kao što su kamenac, materijal stranog tela itd. Hemoragičan je i često krvavi na dodir. Obično izaziva lokalne smetnje. Eksciziorna biopsija smatra se tretmanom izbora za piogeni granulom, nakon čega sledi uklanjanje lokalnih iritansa, kako bi se izbeglo ponavljanje oboljenja. U ovom članku, prikazan je slučaj oralnog piogenog granuloma na gingivi, koji se proteže do nepca, kod pacijenta starosti 54 godine, uz istovremeni prikaz pregleda literature.

Metode: Posle uzimanja detaljne anamneze i kliničkog pregleda, postavljena je radna dijagnoza piogenog grandoma. Urađena je eksciziorna biopsija i lezija je poslata na patohistološki pregled.

Rezultat: Patohistološkim pregledom lezije potvrđena je klinička dijagnoza piogenog granuloma.

Zaključak: Piogeni granulom nije neoplastične prirode i stoga je potrebno detaljno poznavanje ove lezije, kako bi se identifikovala u ranoj fazi i na odgovarajući način lečila, pre nego što izazove bilo kakvu smetnju u normalnim rutinskim funkcijama.

Ključne reči: piogenost, hiperplazija, granulom, reaktivnost

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Abstract

Uvod: Pyogenic granuloma is a common non neoplastic growth in the oral cavity which is hyperplastic in nature. Various theories of etiopathogenesis have been suggested for pyogenic granuloma. It is commonly thought to be a response to various local irritants like calculus, foreign body material etc. It is hemorrhagic and often bleeds on touch. It usually causes local interference. Excisional biopsy is considered the treatment of choice for pyogenic granuloma followed by removal of the local irritants in order to avoid recurrence. This article presents a case of oral pyogenic granuloma in a 54-year-old patient in the gingiva extending up to the palate with a review of literature.

Materials and methods: A thorough case history and clinical examination was done. A provisional diagnosis of pyogenic granuloma was given. Excisional biopsy was performed and the lesion was sent for histopathological evaluation.

Result: Histopathological examination of the lesion confirmed the clinical diagnosis of pyogenic granuloma.

Conclusion: Pyogenic granuloma is non neoplastic in nature and hence a detailed knowledge of this lesion is required in order to identify it in its early stage and to manage it appropriately before it causes any hindrance in normal routine functions.

Key words: pyogenic, hyperplasia, granuloma, reactive

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Uvod

Piogeni granulom (PG) smatra se učestalim tumorom u usnoj duplji. Nije neoplastične prirode¹. PG predstavlja jedan od različitih tipova inflamatornih hiperplazija u koje spadaju i fibrom, polip pulpe, *epulis fissuratum*, granulom džinovskih ćelija, papilarna hiperplazija i *epulis trudnoće*². Hullihen³ je 1844. godine opisao prvi slučaj PG. Termin koji se danas koristi „piogeni granulom“ ili *grauloma piogenicum* predložio je Hartzell⁴ 1904. godine, te je stoga nazvan i „Crockerova i Hartzellova bolest“. Histološki, PG pokazuje brojne krvne sudove i upalu, pa je opisan kao „hemangiozni granulom“ od strane Angelopoulou⁵ i *granuloma telangiectaticum* od strane Cawsona i sar.⁶. Cawson i sar. dalje su opisali 2 oblika PG; lobularni kapilarni hemangiom i nelobularni kapilarni hemangiom⁶.

Smatra se da se PG pojavljuje kao tkivo koje nastaje kao odgovor na lokalnu iritaciju i traumu¹. Bilo koji stimulans ili bilo koja povreda prisutna u gingivalnom vratu, lokalni iritansi kao što su kamenac, strano telo i loša oralna higijena mogu postati uzročni faktor za pojavu PG i dalja iritacija tkiva rezultiraće bujnom proliferacijom granulacionog tkiva. Drugi predisponirajući faktori uključuju hormone, određene lekove, viruse i bakterije^{1,7}.

PG je češći kod žena i obično je zastupljeniji u drugoj deceniji života. Oralni PG ima veću sklonost ka gingivi, što mu je i najčešća lokalizacija u usnoj duplji¹.

U ovom članku predstavljamo slučaj piogenog granuloma gingive sa palatinalnim proširenjem kod pacijentkinje stare 54 godine.

Prikaz slučaja

Pacijentkinja stara 54 godine javila se našoj stomatološkoj ordinaciji žaleći se na pojavu izrasline u blizini prednjih, gornjih desnih zuba, koja je bila prisutna od 3 do 4 meseca do trenutka javljanja lekaru. Pacijentkinja je navela da je rast izrasline u početku bio mali, a zatim se postepeno povećavao do veličine koja je zabeležna na prijemu. Izraslina je bila povezana sa tupim povremenim bolom, praćen nelagodnošću i krvarenjem pri dodiru i četkanju. Pacijentkinja ne navodi u anamnezi bilo kakvo drugo vlaženje sa površine lezije. Nije bilo relevantne medicinske istorije bolesti. Pacijentkinja je bila kod stomatologa radi vađenja zuba pre oko 2 do 3 godine i period nakon vađenja protekao je bez ikakvih problema. Nije otkrivena ozbiljna asimetrija lica.

Introduction

Pyogenic granuloma (PG) is considered to be a common tumor like growth in the oral cavity. This is non-neoplastic in nature¹. PG is one of the various types of inflammatory hyperplasias which also include fibroma, pulp polyp, *epulis fissuratum*, giant cell granuloma, palatal papillary hyperplasia and pregnancy *epulis*². Hullihen³ in 1844 described the first case of PG. The current term pyogenic granuloma or granuloma pyogenicum was coined by Hartzell⁴ in 1904 and hence was also called 'Crocker and Hartzell's disease'. Histologically, PG shows numerous blood vessels and inflammation, hence was described as 'hemangiomaticus granuloma' by Angelopoulos⁵ and 'granuloma telangiectaticum' by Cawson et al.⁶. Cawson et al. further have described 2 forms of PG; lobular capillary haemangioma and non-lobular capillary haemangioma⁶.

PG is thought to appear as an exuberant tissue of response to local irritation and trauma¹. Any stimulant or injury present in the gingival crevice; local irritants like calculus, foreign body and poor oral hygiene; may become a causative factor for PG to occur and further irritation to the tissues will result in an exuberant proliferative granulation tissue. Other predisposing factors include hormones, certain drugs, viruses and bacteria^{1,7}.

PG is more prevalent in females and usually in the second decade of life. Oral PG has a higher predilection for gingiva thus being the most common site in the oral cavity¹.

Here in this article, we present a case of pyogenic granuloma of the gingiva with palatal extension in a 54-year-old female patient.

Case Report

A 54-year-old female patient reported to our dental clinic with a chief complaint of a growth near upper right front teeth present for 3 to 4 months. The patient reported that the growth was initially small and then gradually increased to the present size. It was associated with dull intermittent type of pain with discomfort and bleeding on touching and brushing. There was no history of any other discharge from the surface of the lesion. There was no relevant medical history. The patient had visited the dentist for the extraction of the teeth around 2 to 3 years back and the post-extraction period was uneventful. No gross facial asymmetry was detected.

Pri intraoralnom pregledu uočena je izraslina ružičasto-crvene boje, veličine približno 2 do 3 centimetra, koja polazi od labijalne brazde između zuba 12 i zuba 13, obuhvatajući površinu alveolarnog grebena i proteže se do palatinalnog regiona. Površina lezije je pigmentirana i glatka, osim jednog mesta u centru, koje je bilo ulcerisano. Došlo je do patološke migracije zuba 13 zbog lezije (Slika 1 i Slika 2).



Slika 1: Gingivalna izraslina koja se, posmatrano iz labijalnog pravca, nalazi između zuba 12 i 13 (Izvor fotografije: Muralijeva kolekcija)

Figure 1: Gingival growth from labial aspect between 12 and 13 (Photo courtesy: Murali's Collection)

Pri palpaciji, lezija je bila meke konzistencije, osetljiva i krvarila je na dodir. Nedostajali su zubi 15, 16, 17, 25 i 36. Do 26 bili su prisutni zaostali korenovi. Bili su prisutni prebojenost i kamenac.

Na osnovu anamneze i kliničkog pregleda postavljena je privremena dijagnoza piogenog granuloma sa diferencijalnom dijagnozom perifernog gigantcelularnog granuloma, perifernog okoštajućeg fibroma i traumatskog iritacionog fibroma.

Nakon dobijanja pristanka pacijenta, urađena je eksciziona biopsija cele izrasline i poslata je na patohistološki pregled.

Patohistološka analiza pokazala je ulcerisanu površinu sa fibrinoznom eksudatom i vezivnim tkivom koje se ispod nalazilo, a koje se sastoji od obilja velikih vaskularnih prostora obloženih endotelnim ćelijama i brojnim kapilarama, koji bujaju. Gusta infiltracija mešovityh inflamatornih ćelija, ekstravaziranih eritrocita, materije i kolonija mikroba, takođe je primećena u tkivu. Ovakav nalaz bio je kompatibilan sa kliničkom dijagnozom piogenog granuloma (Slika 3).

On intraoral examination; the growth was pinkish red in colour, pedunculated, of approximately 2 x 3 centimeters in size, extending from the labial sulcus between 12 and 13 involving the surface of the alveolar ridge and extending up to the palatal region. The surface of the lesion was pigmented and smooth except for one place at the centre which was ulcerated. There was pathological migration of 13 due to the lesion (Figure 1 and Figure 2).



Slika 2: Gingivalna izraslina koja se proteže do palatinalnog regiona zuba 12 i 13 (Izvor fotografije: Muralijeva kolekcija)

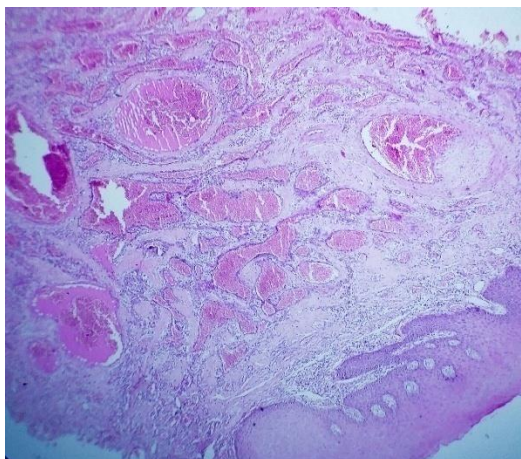
Figure 2: Gingival growth extending to palatal region between 12 and 13 (Photo courtesy: Murali's Collection)

On palpation, the lesion was soft in consistency, tender and bled on touch. There were missing teeth wrt 15, 16, 17, 25 and 36. Root stumps were present wrt 26. Stains and calculus was present.

Based on the history and clinical examination provisional diagnosis of pyogenic granuloma was made with differential diagnosis of peripheral giant cell granuloma, peripheral ossifying fibroma and traumatic (irritation) fibroma.

The patient's consent was taken and excisional biopsy of the entire growth was performed and sent for histopathological evaluation.

Histopathological evaluation showed ulcerated surface with fibrinous exudate and underlying connective tissue comprising of abundant large vascular spaces lined by endothelial cells and numerous budding capillaries. Dense infiltration of mixed inflammatory cells, extravasated RBCs, vegetable matter and microbial colonies were also seen in the tissue. This was compatible with the clinical diagnosis of pyogenic granuloma (Figure 3).



Slika 3: Histopatološke karakteristike (piogenog granuloma: Biopsija br. 277/18, ABSMIDS)
Figure 3: Histopathological features (of pyogenic granuloma: Biopsy no. 277/18, ABSMIDS)

Diskusija

Smatra se da je piogeni granulom vrsta inflamatorne hiperplazije, preuveličana reakcija na lokalne iritirajuće faktore i traumu. Različiti predisponirajući faktori mogu usloviti ovu pojavu kamenac, strani materijal, lošu oralnu higijenu, pa čak i nadoknade preteranih kontura^{1,7,8}.

Etiopatogeneza

PG se može javiti u svim starosnim grupama, ali češće se javlja kod mladih odraslih osoba, posebno kod žena. Ovo bi moglo biti zbog visokog nivoa cirkulišućih hormona, kao što su progesteron i estrogen⁸. Raniji izveštaji podržali su teoriju o prisustvu uvećanja gingive u trudnoći. Takođe, objavljeno je to da su morfogenetski faktori veći kod PG u poređenju sa normalnom gingivom, čime se podržava ideja o angiogenezi u trudnoći^{9,10}. PG se stoga ponekad naziva tumor trudnoće ili granuloma gravidarum, kada se javlja kod trudnica¹¹.

U literaturi se mogu naći izveštaji u kojima je PG smatran zaraznim entitetom. U studiji sprovedenoj od strane Kerra i drugih¹² određena strana tela, stafilokoki i botriomikoza, kao i lokalizovana infekcija na zidu krvnog suda prijavljeni su kao faktori koji doprinose nastanku PG. Prisustvo gram pozitivnih i gram negativnih bacila u PG opisali su Bhaskar i sar¹³. Shafer i saradnici takođe su prijavili to da PG nastaje usled infekcije od stafilokoka i streptokoka¹⁴. Međutim, dominantan rast kapilara primećuje se unutar granulomatozne mase PG, a ne stvarnih piogenih organizama i gnoja, tako da je termin piogeni granulom prijavljen kao pogrešan naziv¹.

Discussion

Pyogenic granuloma is said to be a type of inflammatory hyperplasia an exaggerated reaction to local irritating factors and trauma. The various predisposing factors may include calculi, foreign material, poor oral hygiene and even over-contoured restorations^{1,7,8}.

Etiopathogenesis

PG can occur in all age groups but it is more frequently seen in young adults especially in females. This could be due to the high levels of circulating hormones like progesterone and estrogen⁸. Earlier reports have supported the theory of the presence of gingival enlargements in pregnancy. It's been also reported that morphogenetic factors are higher in PG when compared to normal gingiva thus supporting the idea of angiogenesis in pregnancy^{9,10}. PG is therefore sometimes referred as pregnancy tumor or granuloma gravidarum when it occurs in pregnant females¹¹.

There have been reports in the literature which have regarded PG as an infection entity. Certain foreign bodies, staphylococci and botryomycosis, and localized infection on the wall of the blood vessel have been reported as contributing factors for PG by Kerr et al.¹². The presence of gram positive and negative bacilli in PG has been described by Bhaskar et al.¹³. Shafer et al. have also reported PG arising due to infection from staphylococci and streptococci¹⁴. However, predominant growth of capillaries is seen within the granulomatous mass of PG rather than actual pyogenic organisms and pus, so the term pyogenic granuloma has been reported as a misnomer¹.

Neki autori prijavili su PG kao „reaktivni“ ili „reparativni“ tumorski proces.

Regezi i saradnici predložili su da se okarakteriše kao bujna proliferacija vezivnog tkiva, izazvana poznatim stimulusom ili povredom, poput kamenca ili stranog materijala unutar gingivalne pukotine⁷. Brojni drugi etiološki faktori predloženi su, kao mogući razlozi nastanka PG, kao što su hronična iritacija, lekovi, hormoni, traume, povreda mlečnog zuba, loše restauracije, impaktacija hrane, trauma četkicom za zube itd⁸. Ainamo¹⁵ je takođe sugerisao na to da će ponavljana trauma tokom pranja zuba ili bilo koje druge funkcije koja izaziva oslobađanje različitih endogenih i angiogenih faktora doprineti povećanju vaskularnosti ove lezije.

U ovom konkretnom slučaju, pacijentkinja je bila zdrava žena od 54 godine. Verovatni etiološki faktori u ovom slučaju mogli bi da budu prisustvo velikih količina kamenca, usled loše održavane oralne higijene, ponovljene traume zuba antagonista zbog njihovog položaja i okluzalnih smetnji pri žvakanju hrane zbog njene veličine. Ovo je u skladu sa etiološkim faktorima koji su prethodno pomenuti^{7,8,15}.

Kliničke karakteristike

Piogeni granulom u usnoj duplji može se javiti u svim životnim dobima, a najčešće se javlja u drugoj i petoj deceniji života. Žene češće oboljevaju od muškaraca¹³. Gingiva je dominantno mesto gde se PG javlja u usnoj duplji, češće na marginalnom, nego pripojnom delu^{13,16}. Primećuje se i na usnama, jeziku, bukalnoj sluzokoži, nepcu i mukobukalnom naboru; češće u maksili nego u mandibuli¹³. Veličina PG obično varira između nekoliko milimetara i nekoliko centimetara^{7,11}.

Intraoralno, PG se pojavljuje kao izdignuta/povišena lezija, koja može biti glatka ili egzofitna na potpornoj ili pedukuliranoj osnovi. Površina je obično prekrivena crvenim hemoragičnim i eritematoznim papulama, koje daju lobularni i bradavičasti izgled, sa ulceracijama^{7,11}. Boja lezije varira od ružičaste, preko crvene do crvenkastoljubičaste u zavisnosti od starosti i vaskularnosti^{1,17}. U prikazanom slučaju, takođe je predstavljena ružičastocrvena izraslina sa pedukuliranom bazom približne veličine 2 cm x 3 cm, koja se proteže od labijalne brazde do palatinalne regije između zuba 12 i 13, koja je imala glatku površinu, osim ulceracije u centru izrasline. Krvarila je na dodir.

PG has been reported as 'reactive' or 'reparative' tumor process by some authors. It has been suggested as an exuberant proliferation of the connective tissue to a known stimulus or injury like calculus or foreign material within the gingival crevice by Regezi et al.⁷. Numerous other etiologic factors have been suggested like chronic irritation, drugs, hormones, trauma, injury to a primary tooth, defective restorations, food impaction, toothbrush trauma etc.⁸. Ainamo¹⁵ has also suggested that recurrent trauma while toothbrushing or any other function causing the release of various endogenous and angiogenic factors will contribute to the increase in vascularity of this lesion.

In the present case, patient was a 54-year-old healthy female. The probable etiologic factor in this case could be due to the presence of large amounts of calculus because of poorly maintained oral hygiene, repeated trauma from the opposing teeth due to its position and occlusal interference while chewing food due to its size. This is in accordance with the etiologic factors mentioned previously^{7,8,15}.

Clinical features

Pyogenic granuloma in the oral cavity occurs in a wide range of age, more commonly being in the second and the fifth decade of life. Females are more often affected than males¹³. Gingiva is the predominant site where PG is seen in the oral cavity, especially the marginal gingiva than the alveolar part^{13,16}. It is also noticed in the lips, tongue, buccal mucosa, palate and mucobuccal fold; frequenting more often in the maxilla than in the mandible¹³. PG usually varies between few millimeters to several centimeters in size^{7,11}.

Intraorally, PG appears as a raised/elevated lesion which is smooth or exophytic on a sessile or pedunculated base. The surface is usually covered with red hemorrhagic and erythematous papules, which gives a lobulated and warty appearance with ulcerations^{7,11}. The colour of the lesion varies from pink to red to reddish purple depending upon the age and vascularity^{1,17}.

The case presented here also showed a pinkish red growth with pedunculated base of approximately size 2 x 3 cm extending from the labial sulcus up to the palatal region in between 12 and 13 which had smooth surface except for an ulceration at the centre of the growth. It bled on touch.

Patohistološke karakteristike

Sloj parakeratinizovanog ili nekeratinizovanog slojevitog skvamoznog epitela prekriva piogeni granulom. Identifikovana su dva histološka tipa PG. Proliferacija krvnih sudova koji su organizovani kao lobularni agregati, vidi se kod prvog tipa i naziva se lobularni kapilarni hemangiom (LCH). Kod drugog tipa primećena je visoko vaskularna proliferacija koja podseća na granulaciono tkivo i to se naziva ne-LCH tipom^{11,13,18,19}. Može se videti ulceracija na određenim mestima na površini PG I u takvim slučajevima edem je izražen¹³.

Slične patohistološke karakteristike uočene su i u ovom slučaju.

Diferencijalna dijagnoza

U diferencijalnoj dijagnozi piogenog granuloma treba razmotriti periferni osificirajući fibrom, periferni granulom gigantskih ćelija, hemangiom, periferni odontogeni fibrom, hiperplastične upale gingive, konvencionalno granulaciono tkivo, kao i Kaposijev sarkom i Non-Hodgkinov sarkom^{14,20}.

Periferni karcinom gigantskih ćelija može se histološki isključiti zbog prisustva multinuklearnih džinovskih ćelija⁷. Takođe isključuje se prisustvo infektivnog izvora²¹. Periferni osificirajući fibrom i periferni odontogeni fibrom takođe se javljaju pretežno u gingivi, ali mogu se eliminisati zbog minimalne vaskularne komponente u poređenju sa PG^{7,22}. Hemangiom se histološki razlikuje prisustvom proliferacije endotelnih ćelija, ali bez akutnog inflamatornog ćelijskog infiltrata koji se vrlo često vidi kod PG²³. Kaposijev sarkom obično se povezuje sa sindromom stečene imunodeficijencije i pokazuje displastičnu proliferaciju, ćelije vretenaste, vaskularne pukotine, ekstravazirane eritrocite i intracelularna hijalinska tela. Ove karakteristike ne vide se kod PG¹⁹. Histološki hiperplastična upala gingive izgleda veoma slično PG i stoga se za postavljanje dijagnoze treba osloniti na istoriju bolesti i klinički opis¹⁹.

Terapija

Ekscizionna biopsija smatra se zlatnim standardom u lečenju piogenih granuloma. U slučaju da ekscizija izazove bilo kakav izražen deformitet, onda se može planirati incizionna biopsija²². Ekscizija lezije praćena uklanjanjem lokalnih predisponirajućih faktora kao što su kamenac, strani materijal i bilo koji drugi lokalni iritansi, obično se preporučuje kao opcija lečenja¹¹.

Histopathological features

A layer of parakeratinized or non-keratinized stratified squamous epithelium covers pyogenic granuloma. Two histological types of PG have been identified. Proliferation of blood vessels which are organized as lobular aggregates is seen in the first type and is called lobular capillary haemangioma (LCH). In the second type, highly vascular proliferation resembling granulation tissue has been observed and this is called non-LCH type^{11,13,18,19}. Ulceration at certain places on the surface of PG may be seen and in such cases edema is prominent¹³.

Similar histopathological features were seen in the present case as well.

Differential diagnosis

The differential diagnosis for pyogenic granuloma consists of peripheral ossifying fibroma, peripheral giant cell granuloma, haemangioma, peripheral odontogenic fibroma, hyperplastic gingival inflammation, conventional granulation tissue, Kaposi's sarcoma and Non-Hodgkin's Lymphoma^{14,20}.

Peripheral giant cell carcinoma can be ruled out histologically due to the presence of multinucleated giant cells⁷. There is also absence of an infectious source²¹. Peripheral ossifying fibroma and peripheral odontogenic fibroma also occur predominantly in the gingiva but can be eliminated because of the minimal vascular component when compared to PG^{7,22}. A haemangioma is distinguished histologically by the presence of endothelial cell proliferation but without acute inflammatory cell infiltrate which is very often seen in PG²³. Kaposi's sarcoma is commonly associated with Acquired Immunodeficiency Syndrome and shows proliferation of dysplastic spindle cells, vascular clefts, extravasated erythrocytes and intracellular hyaline bodies. These features are not seen in PG¹⁹. Hyperplastic gingival inflammation appears very similar to PG histologically and hence history and clinical description is relied on¹⁹.

Treatment

Excisional biopsy is considered as the gold standard in the treatment of pyogenic granuloma. If in case the excision will cause any marked deformity then incisional biopsy can be planned²². Excision of the lesion followed by removal of local predisposing factors like calculus, foreign material and any other local irritant is usually recommended as the treatment option¹¹.

U ovom slučaju, ekscizionna biopsija urađena je da bi se uklonila cela izraslina i ona je poslata na patohistološki pregled. Nakon ekscizije, izvršeno je skaliranje korena kako bi se uklonili svi lokalni faktori poput kamenca i stranog tela koji su mogli biti uzrok.

Različite, druge modalitete lečenja PG isprobali su različiti kliničari, a što uključuje kriohirurgiju, Nd IAG laser, pulsni laser za bojenje sa fleš lampom, laser sa ugljen-dioksidom, elektrodesikacija, skleroterapija i natrijum-tetradecil-sulfat⁸.

Stopu recidiva od 16% prijavili su Taira i saradnici u svojoj studiji. Nepravilna/-nepotpuna ekscizija lezije, ponovljena trauma i neuspeh u uklanjanju lokalnih iritansa, poput kamenca, mogu dovesti do ponovnog pojavljivanja lezije^{7,22}.

Zaključak

Piogeni granulom je učestala neneoplastična lezija u usnoj duplji. Obično nastaje kao odgovor na lokalne stimulse/iritanse. Predisponirajući faktori su brojni i stoga je temeljno poznavanje lezije veoma važno, kako bi se razlikovao od drugih stanja, kao i za pravilno lečenje.

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In the present case, excisional biopsy was done to remove the entire growth and sent for histopathological evaluation. Post excision, scaling with root planning was performed in order to remove any local factors like calculus and foreign body material which could have been the cause.

Various other treatment modalities for PG have been tried by different clinicians like cryosurgery, Nd YAG laser, flash lamp pulse dye laser, carbon dioxide laser, electrodesiccation, sclerotherapy and sodium tetradecyl sulfate⁸.

Recurrence rate of 16% has been reported by Taira et al. Improper/incomplete excision of the lesion, repeated trauma and failure to remove the local irritants like calculus may result in recurrence of the lesion^{7,22}.

Conclusion

Pyogenic granuloma is a common non neoplastic lesion seen in the oral cavity. It usually arises as a response to local stimuli/irritant. The predisposing factors are numerous and hence a thorough knowledge regarding the lesion is very important to differentiate it from other conditions and also for its proper management.

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