Pyogenic Granuloma in Pregnancy: A Case Report

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**Abstract**

Pyogenic granuloma is thought to be an extreme tissue response to trauma or local irritation. Hormonal changes also trigger the formation of the lesion. Clinically, this lesion is usually found as single nodules or vesicular papules with smooth or lobular surfaces. They can be seen from a few millimeters to a few centimeters at any size. It is known that pyogenic granuloma occurs more frequently in the teeth (75% of all cases). In this article, we presented a laser-assisted surgical treatment of a gingival pyogenic granuloma consisting of the right molar region of the mandible in a 22-year-old pregnant woman.

**Keywords:** Pyogenic granuloma; Laser; Pregnancy; Surgery

**Background**

Pyogenic granuloma (PG), a nonneoplastic lesion of the oral cavity, is thought to occur as a reactive tissue-reaction to local irritation or trauma [1]. Clinically, PG generally occurs as a solitary exophytic growth that can be sessile or pedunculated with a smooth or lobulated surface. The color of the growth is red in younger lesions and with maturity; it becomes more pink and fibrous as the vascularity decreases. It may be painful, especially if located in an uncomfortable area of the body. PG can grow quickly and will frequently bleed profusely with little or no trauma. The most frequent intraoral site is the gingiva, maxilla being more involved than mandible. It sometimes consists of extra gingivally on the lips, tongue, buccal mucosa, and palate [2]. PG mostly occurs in young females in the second decade of life. Because of a vascular impact owing to hormonal changes. It is generally thought that that female sex hormones play significant roles in its pathogenesis [1,3].

Many treatment methods have been developed for PG. Before treatment, the etiology must be identified and eradicated. When the lesion is small, painless and there is no bleeding, oral prophylaxis, removal of causative irritants (foreign materials, the source of trauma), and follow-up are recommended [4]. If lesions are large, they are treated by a whole oral prophylaxis followed by surgical excision using gingivectomy or flap surgery methods with additional therapy [2,5]. Lesions removed during pregnancy can have a higher recurrence ratio [2]. Recurrence occurs after incomplete excision, failure to remove etiologic factors or re-injury of the area. The elimination of this lesion can be carried out using different approaches. For removing PG, cryosurgery, scalpel, and laser might be used [2,5,6]. Laser surgery is the preferred method of good patient comfort, easy to application and short operation time without bleeding and suturing [7].

Diode laser, CO2 (Carbon Dioxide Laser), Nd: YAG (Neodymium-Doped Yttrium, Aluminium Garnet) and Er: YAG (Erbium-Doped Yttrium Aluminium Garnet) have reportedly been successful in treating mucosal pyogenic granulomas [5,7,8]. The possibility of recurrence of the lesion seems that the use of laser will reduce this recurrence rate [7]. The goal of this article is to report a case of gingival pyogenic granuloma occurring on the right buccal mucosa in a female and to distinguish this lesion from other similar lesions of the buccal mucosa, with special emphasis on the diagnosis and treatment of this condition.

**Case Description**

A 22-year-old female patient noticed with the principal complaint of growth on the right mandibular molar area with 3-month duration in the second trimester of pregnancy. History of presenting illness showed that the growth was gradual in onset, initially small in dimension now increased to attain the present size. There was also a history of occasional bleeding from the growth during chewing. The patient’s medical history and family were not existing of PG. Extraoral examination demonstrated no swelling or facial asymmetry. Intraoral examination showed a solitary exophytic, pe-
duncked growth on the right side of buccal mucosa at the level of
the occlusal plane. The exophytic growth seems erythematous with
grayish white borders with lobulated surface. The growth mea-
ured of about 15×10×5 mm in diameter, which was soft to firm in
consistency and bled on provocation (Figure 1). There was no ev-
idence of pus discharge from the lesion. Based on the history and
clinical appearance of the lesion, provisional diagnosis of benign
exophytic growth of right buccal mucosa was considered. And the
differential diagnosis included traumatic fibroma, pyogenic gran-
uloma, and capillary hemangioma. The lesion, which was retained
with the help of a hemostat, was excised by using a lancet and re-
moved until debris and soft tissue was eliminated. Coagulation was
performed in the surgical area by diode laser (hemostasis mode, in
continuous mode, power output 0.5 W, frequency 50 Hz). It took
five minutes to complete the procedure. Then, the lesion sent for
histopathological examination. Figure 2 shows the macroscopic ap-
pearance of the excised specimen. Histopathologically, hematoxy-
lin-eosin (H&E) stained section confirmed the clinical diagnosis of
PG (Figure 3). The operation area has improved and there was no
recurrence in the patient after post-operative 6 months (Figure 4).

Discussion

Pyogenic granuloma is a reactive inflammatory course occu-
pied with proliferating vascular channels, immature fibroblastic
connective tissue, and scattered inflammatory cells [1]. Because it
is a reactive tumor-like lesion, chronic low-grade irritation, traum-
amic injury, hormonal factors and certain kind of drugs could be
thought as etiologic agents [2]. PG of the gingiva occurs in up to
5% of pregnancies [5]. Therefore the terms “pregnancy tumor” and
“granuloma gravidarum” are frequently utilized [9]. The hormonal
instability coincident with pregnancy heightens the organism’s re-
play to irritation but, bacterial plaque and gingival inflammation are
essential for PG [1-3]. Treatment of PG requires a whole surgical ex-
cision [4]. Recurrence of PG after excision is a known complication
but can be prevented. Therefore, additional treatments are needed
to increase the effectiveness of surgical treatment and to prevent
recurrence. The hemostatic feature of the laser is very significant
in excising exophytic lesion [7,10]. It can be used to stopping bleed-
ing in the field by its contract vascular wall collagen [8]. This gives
good visibility and precision in the operation area. The tissue co-
agulation by diode laser is a clinical importance. The laser has no
need for suturing, no bleeding at the site of surgery, the surgical
period was markedly minimized and patients were protected from
potential high-risk infection [7, 10]. In some studies, there was a
problem of coagulation in some PGs then those specific areas were
coagulated with Nd: YAG or Diode lasers and thus they were suc-
cessfully treated [11,12]. Kocaman et al. [11] used Nd: YAG laser
in order to remove PG and deduced that the use of Nd: YAG laser
in the treatment of pyogenic granuloma reduced bleeding during
surgery, with a consequent promoted rapid postoperative hemosta-
sis, and has better patient comfort [11]. The use of a 940nm diode
laser was an accomplished therapy option for decreasing the risk of
post-operative infection and impaired healing, increasing of hemo-
stasis as well as increasing the patient’s comfort [13,14]. The laser
treatment can provide hemostasis for very large and vascularized
lesions.

Conclusion

Pyogenic granuloma is generally encountered soft tissue en-
largements. The laser-assisted surgical treatment of the lesion can
be considered as a good modality for very large and vascularized
lesions. Laser treatment can prevent recurrences of PG.
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