

## Pyogenic Granuloma in a Pregnant Woman Treated with Laser Therapy: A Case-Report

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### Abstract

### Case Report

Pyogenic granuloma is a common vascular tumor, it is benign and appears as superficial vascular lesions that can be idiopathic or related to immunity reasons, Pregnancy tumor is one type of this granuloma which appears as hyperplastic bleeding lesion of the gingiva, related to hormonal changes which happen during the first or second trimester. Higher levels of sex hormones during pregnancy produce effects on subgingival microflora, the immune system reaction manifest as severe bleeding enlargement in the buccal or lingual gingiva or both and sometimes covers occlusal teeth surfaces in advanced cases. In the next section, a case from my clinic involving pyogenic granuloma in the second trimester of pregnancy will be discussed along with how it was treated two times after recurrence.

**Keywords:** Pyogenic granuloma, pregnancy tumor, lesion, oral cavity, inflammatory hyperplasia, Gingival enlargement, Diod Laser, wavelength, biopsy.

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## INTRODUCTION

Pyogenic granuloma is one of the inflammatory hyperplasia that occur in the oral cavity (1). This is due to the fact that the lesion is not related to infection, but actually develops in response to various stimuli such as minor local irritation or hormonal factors (2). It occurs predominantly in the second decade of life in young women, possibly due to the vascular effects of female hormones, especially during pregnancy (3). Clinically, oral pyogenic granuloma is a smooth or lobular exophytic lesion that appears as a red gingival enlargement on a pedunculated or sometimes sitting base that is usually hemorrhagic. The surface is pink, red, or purple depending on the age and vesiculation of the lesion (4). For a long time, the first line treatment is surgical excision, however, recently, some other treatment protocols such as the use of the Erbiome laser have been shown to be beneficial as it allows hemostasis and disinfection of the margins of the lesion. Other treatment methods such as cryosurgery, intralesional injection of ethanol or corticosteroid and sodium tetradecyl sulfate sclerotherapy have been proposed but almost now considered outdated after the use of laser (5).

Because of the high incidence of pyogenic granuloma in the oral cavity and the recurrence of this lesion during pregnancy, as well as the need for appropriate diagnosis and treatment, a complete review of published information and research on this lesion is presented.

## CASE REPORT

A 27-year-old female patient, pregnant (25 weeks), presented to the emergency department of Qatar University Health Center on 23/11/2022 with the chief complaint of a rapidly swelling mass on the upper left canine gum with pain and profuse bleeding when touched, with the same complaints having occurred 3 weeks earlier and the patient having undergone surgical removal at a private clinic. There were no medical or psychological disorders in the history of the patient and her family. Physical examination and laboratory tests revealed no systemic disease. Oral examination revealed an erythematous pedunculated mass approximately 1\*1 cm in size with ulceration in the area of the interdental papilla and on the lingual and buccal gingiva of tooth 23. The mass was soft in consistency, bled profusely, and didn't ulcerate. Referral to the Oral Surgery Clinic and appointment was made for the next day, 24/11/2022, as an emergency because the patient couldn't wait due to the bleeding and painful mass.

**Treatment Plan**

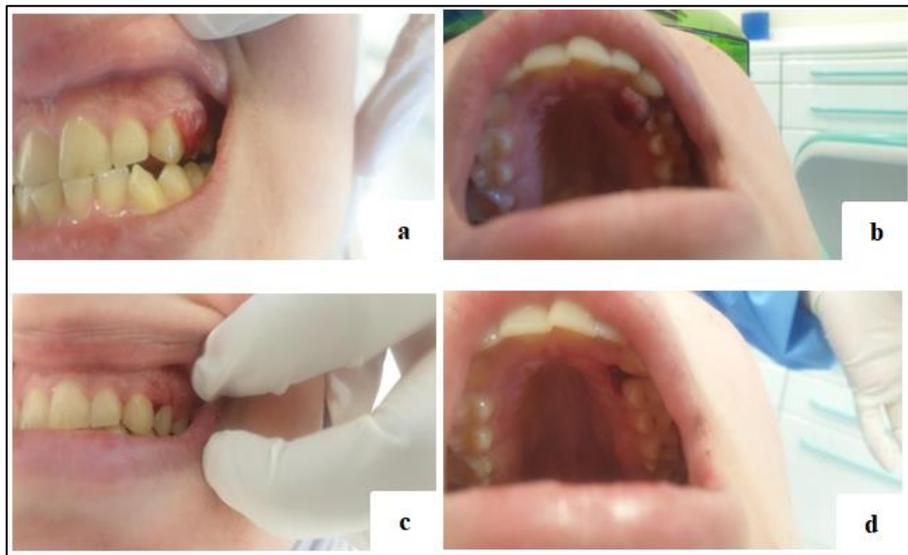
Under local anesthesia with lidocaine with epinephrine, the lesion was initially treated with interstitial intralesional laser therapy using a 980-nm diode laser at 3 W continuous wave with a 200-micrometer optical fiber. After the optical fiber was inserted into the lesion tangentially to the tooth and root surface, the laser was irradiated for five seconds. The lesion became pale and harder, indicating that coagulation was achieved. Immediately following this treatment, a diode laser with a wavelength of 635 nm was used over an 8-mm optical fiber (100 mW) to achieve photo biomodulation and hemostasis and to disinfect the wound. The patient was discharged with instructions on how to maintain good oral hygiene and use of safe analgesics.

A specimen obtained with excisional biopsy using a diode laser of 980 nm at 4 W continuous wave

with a 320-micron optical fiber as shown in Figure 1 confirmed the diagnosis of pyogenic granuloma with histopathologic features showing focally congested mucosal fragments with a total size of 1.8\*1.3\*0.5 cm. Follow-up examination after 3 days showed good wound healing and hemostasis.

The patient presented again on 24/12/2022 after 29 weeks of gestation with a larger swelling of 2\*2 cm buccally and lingually, which bled profusely and was very painful when touched lightly as shown in Figure 2. After reassuring the patient and educating her about the recurrence of this lesion, the removal was repeated with the DIOD laser in the same steps but wasn't sent again for tissue pathology.

Follow-up examinations at 3 days, 1 week, and 3 weeks revealed good healing and no bleeding. The patient didn't come back to the surgical clinic again and delivered safely on 25/03/2022 without recurrence.



**Figure 1 (a, b, c and d): Diagnosis of pyogenic granuloma**



**Figure 2 (a, b, c): Recurrence of the pyogenic granuloma in the patient after one-month of the initial treatment**

## CONCLUSION

In this case-report, a pyogenic granuloma in a pregnant woman was successfully managed using interstitial-intralesional laser therapy. Follow-up of 3 weeks post-procedure indicated no recurrence and absence of complications. This suggests that the use of laser therapy is very effective and well-tolerated in treating pyogenic granuloma during pregnancy.

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