

Resolving Functional Impairment from a Pregnancy Tumor in the Third Trimester: A Case for Laser Surgery

Abstract:

This case report describes a 21-year-old female in her third trimester of pregnancy who presented with a one-month history of a bleeding gingival growth causing difficulty in chewing. Clinical examination revealed a 2x3 cm, pedunculated, deep red mass on the mandibular anterior gingiva, consistent with a pregnancy tumor (pyogenic granuloma). The lesion was successfully excised using a diode laser under local anaesthesia without vasoconstrictors, ensuring minimal bleeding and optimal patient safety. Histopathological examination confirmed the diagnosis of pyogenic granuloma. The case highlights the impact of hormonal changes on oral health in pregnancy and demonstrates the efficacy and safety of diode laser surgery as a treatment modality for managing such reactive lesions during gestation, providing immediate relief with excellent postoperative outcomes.

Key-words: Pregnancy Tumor, Pyogenic Granuloma, Granuloma Gravidarum, Diode Laser

Introduction:

Pregnancy brings about major physiological and hormonal shifts that have a notable impact on oral health. Elevated levels of oestrogen and progesterone can alter the gingival tissue response to local irritants, leading to conditions such as pregnancy gingivitis and, in more pronounced cases, pregnancy epulis or "pregnancy tumor"[1]. This lesion is a specific variant of a pyogenic granuloma (lobular capillary haemangioma) that develops during gestation. Despite its name, it is not a true neoplasm but rather a benign, reactive inflammatory hyperplasia.[2]

Pregnancy tumors typically present with rapid enlargement, a reddish appearance, a marked tendency for bleeding, and a pedunculated growth pattern. They typically occur after the first trimester, with an estimated prevalence of 0.2% to 9.6% among pregnant women.[3] While often asymptomatic, they can cause functional impairments in chewing and speaking, aesthetic concerns, and anxiety for the expectant mother. Although spontaneous regression postpartum is possible, many symptomatic lesions require intervention during pregnancy to alleviate discomfort and rule out other pathologies.[4]

The management of such lesions requires a careful approach that prioritizes both maternal comfort and foetal safety. Surgical excision remains the definitive treatment, and the advent of laser surgery offers significant advantages, including superior haemostasis, reduced postoperative pain, and minimal scarring.[5] This case report details the clinical presentation, diagnostic process, and successful laser-assisted management of a pyogenic granuloma in a 21-year-old patient in her third trimester, highlighting the considerations essential for treating pregnant patients.

¹RANJEETA MEHTA, ²ANSHUMAN JHA, ³SUSHMA DARNAL, ⁴S. KARPAGAVALLI

¹⁻⁴Department of Oral Medicine & Radiology, Seema Dental College and Hospital, Rishikesh, Uttarakhand

Address for Correspondence: Dr. Ranjeeta Mehta
MDS

Professor & Head

Department of Oral Medicine & Radiology

Seema Dental College and Hospital, Rishikesh

Email: ranjeetamehta20@gmail.com

Received : 27 Sept., 2025, **Published :** 30 Sept., 2025

Access this article online	
Website: www.ujds.in	Quick Response Code 
DOI: https://doi.org/10.21276/ujds.2025.v11.i3.9	

How to cite this article: Mehta, R., Jha, A., Darnal, S., & S Karpagavalli. (2025). Resolving Functional Impairment from a Pregnancy Tumor in the Third Trimester. UNIVERSITY JOURNAL OF DENTAL SCIENCES, 11(3).

2. Case Report:

2.1. Patient Information and History:

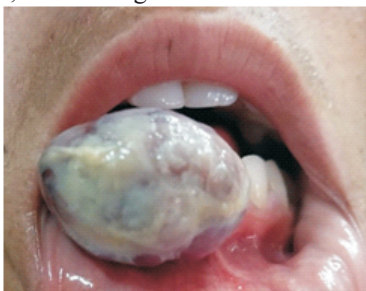
A 21-year-old female, in the 36th week of pregnancy, presented to the outpatient department with a chief complaint of a growth on the gums in her lower front tooth region of one month's duration. The lesion had an insidious onset, gradually increasing in size without any periods of regression. Although not painful, it caused noticeable difficulty during mastication and bled spontaneously during tooth brushing. The patient had not sought any prior medical or dental consultation for this condition and had not used any topical applications or medications.

Her past medical history was significant only for her current, uneventful full-term pregnancy. Her personal history revealed she was a non-smoker, non-alcoholic, followed a mixed diet, and maintained a fair oral hygiene routine of brushing once daily. There was no significant family history of similar lesions or consanguineous marriage.

2.2. Clinical Findings:

General examination revealed a moderately built and nourished, conscious, and cooperative patient. Her vital signs were within normal limits and a review of all systems was unremarkable.

Intraoral examination revealed a solitary, well-defined, oval-shaped growth measuring approximately 2x3 cm on the marginal and interdental gingiva associated with teeth #41, #42, and #43 (mandibular right lateral incisor, canine, and first premolar). The surface was smooth and the lesion was a deep red hue, contrasting with the surrounding pale pink gingiva



(Figure 1 Clinical presentation of the pyogenic granuloma showing its large size, pedunculated base, and erythematous appearance).

On palpation, the mass was tender, firm in consistency, and mobile. It bled readily on gentle provocation. The patient's dentition was mostly complete with moderate calculus and

mild stains. No other soft tissue abnormalities were noted.

2.3. Diagnostic Assessment:

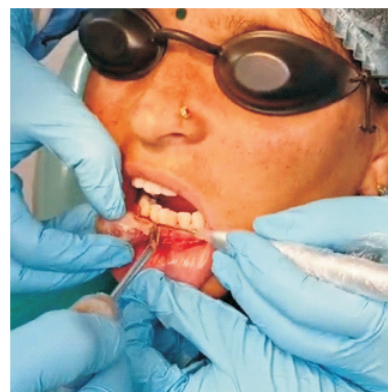
Based on the classic clinical presentation—a rapidly growing, vascular, pedunculated gingival mass in a pregnant patient—a provisional diagnosis of Pyogenic Granuloma (Pregnancy Tumor) was made. The primary differential diagnosis considered was Peripheral Ossifying Fibroma, which can appear similar but is often firmer and more common in younger adolescents, not necessarily associated with pregnancy.

Routine haematological investigation was performed to assess the patient's overall health and rule out anaemia, which can be common in pregnancy. The results were within normal limits: Haemoglobin 12.8 g/dL, Total Leucocyte Count 8200 cells/mm³, and a Differential Leucocyte Count of P-62%, L-34%, E-1%, M-2%.

2.4. Therapeutic Intervention:

After obtaining informed consent and in consultation with her obstetrician, a decision was made to excise the lesion. The procedure was performed under local anaesthesia using 2% Lignocaine hydrochloride (without adrenaline to avoid vasoconstrictor use in pregnancy).

A 810nm diode laser was selected for the excision due to its precise cutting ability, excellent coagulative properties ensuring a bloodless field, and bactericidal effect, which promotes better healing. The pedunculated mass was excised at its base



(Figure 2- Intraoperative view of the laser-assisted excision of the lesion).

The excised tissue was sent for histopathological examination to confirm the diagnosis.

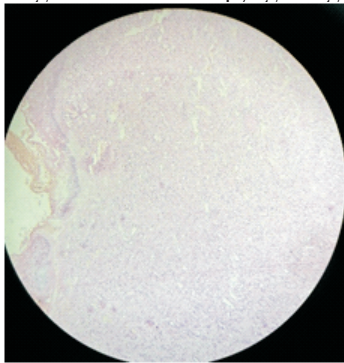
2.5. Follow-up and Outcomes

The postoperative



(Figure 3- The surgical site immediately after the excision, showing effective haemostasis.)

The patient was instructed on maintaining good oral hygiene and followed a soft diet for a few days. The biopsy report confirmed the clinical diagnosis, showing a proliferation of small capillary vessels in a lobular pattern within an edematous stroma, accompanied by a mixed inflammatory infiltrate—findings consistent with pyogenic granuloma.



(Figure 4- Histopathological slide confirming the diagnosis of a pyogenic granuloma, showing a proliferation of capillary vessels)

The patient reported complete resolution of her functional complaints. She was subsequently referred for a dental prophylaxis to remove the underlying calculus and plaque, which are known etiological factors.

3. Discussion:

This case exemplifies a typical presentation and modern management approach for a common oral lesion in pregnancy. The term "pregnancy tumor" is a misnomer, as the lesion is reactive, not neoplastic. Its pathogenesis is linked to the heightened response of gingival tissues to minor irritants like plaque and calculus, amplified by the elevated levels of estrogen and progesterone.[6] These hormones cause increased vascular permeability, proliferation, and dilation of capillaries, creating an ideal environment for such

hyperplastic reactions.[7]

The clinical presentation in this case—location in the anterior mandible, rapid growth, red colour, and bleeding tendency—is classic. The mandibular anterior region is a common site due to its susceptibility to plaque accumulation. The differential diagnosis primarily included peripheral ossifying fibroma (POF). While both can appear similar, POF is typically more fibrous and may show calcifications on histology. Other entities like peripheral giant cell granuloma or metastatic tumors were considered less likely based on clinical context.

The management of pregnancy tumors is guided by the severity of symptoms and the trimester of pregnancy. Small, asymptomatic lesions can often be monitored, as many regress after parturition. However, for lesions causing functional impairment, bleeding, or patient anxiety, excision during the second or third trimester is considered safe and beneficial[8]. The second trimester is often ideal, but this patient presented late in the third trimester, and intervention was still deemed necessary.

The choice of a diode laser was a key aspect of this case's successful outcome. Compared to conventional scalpel surgery, laser excision offers numerous advantages in such scenarios:

- **Superior Haemostasis:** The laser seals blood vessels as it cuts, providing a nearly bloodless surgical field. This is crucial in highly vascular lesions like pyogenic granulomas and minimizes the need for sutures.
- **Reduced Postoperative Pain and Swelling:** The laser coagulates nerve endings and lymphatics, leading to less postoperative discomfort and edema.
- **Sterilization of the Surgical Site:** The laser's bactericidal effect reduces the risk of infection.
- **Enhanced Patient Comfort:** The procedure is often quicker and associated with less noise and vibration than a drill or scalpel, reducing patient anxiety.[9,10]

This case also underscores the critical importance of interdisciplinary care. Coordination with the patient's obstetrician ensured that the chosen anaesthetic and timing of the procedure posed no risk to the foetus. Furthermore, addressing the underlying local irritants through postoperative prophylaxis is essential to prevent recurrence, emphasizing that treatment is not complete without

preventive oral health care.

Conclusion:

Pregnancy tumors, while benign, can significantly impact a patient's quality of life during pregnancy. A thorough clinical examination, careful differential diagnosis, and the use of modern techniques like laser surgery allow for safe, effective, and comfortable management. This approach ensures optimal outcomes for both the expectant mother and the foetus.

References:

1. Jawed ST, Jawed KT. Understanding the Link Between Hormonal Changes and Gingival Health in Women: A Review. *Cureus*. 2025 Jun 3;17(6).
2. Sarwal P, Lapumnuaypol K. Pyogenic Granuloma. [Updated 2024 Sep 10]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025
3. Chikkaboraiah S, Puttaswamaiah RN, Galgali SR. Pregnancy Tumor. *Journal of Health Sciences & Research*. 2016 Dec 1;7(1):23-7.
4. Alshuhail O, Alharbi AS, Alakeel N, Alakeel NS. A Persistent Oral Pyogenic Granuloma: A Case Report With Review of Literature. *Cureus*. 2023 Nov 24;15(11).
5. Kaleeny JD, Janis JE. Pyogenic granuloma diagnosis and management: a practical review. *Plastic and Reconstructive Surgery–Global Open*. 2024 Sep 1;12(9):e6160.
6. Sachelarie L, Iman AE, Romina MV, Huniadi A, Hurjui LL. Impact of hormones and lifestyle on oral health during pregnancy: a prospective observational regression-based study. *Medicina*. 2024 Oct 30;60(11):1773.
7. Lomeli Martinez SM, Carrillo Contreras NG, Gómez Sandoval JR, Zepeda Nuño JS, Gomez Mireles JC, Varela Hernández JJ et al. Oral pyogenic granuloma: a narrative review. *International journal of molecular sciences*. 2023 Nov 28;24(23):16885.
8. Sharma A, Mathur VP, Sardana D. Effective Management of a pregnancy tumour using a soft tissue diode laser: a case Report. *Laser Therapy*. 2014;23(4):279-82.
9. Al-Otaibi LM, Al-Ali MM, AlOtaibi LM, AlAli MM. The use of diode laser for the surgical removal of pyogenic granuloma of the dorsum of the tongue: a case report. *Cureus*. 2023 Sep 12;15(9).
10. Shivhare P, Haidry N, Sah N, Kumar A, Gupta A, Singh A et al. Comparative evaluation of efficacy and safety of the diode laser (980 nm) and sclerotherapy in the treatment of oral vascular malformations. *International Journal of Vascular Medicine*. 2022;2022(1)