



## Clinical efficacy of Diode Laser in Oral Pyogenic Granuloma

Ayman A. Najim\*, Tahrir N. Aldelaimi

*Oral and maxillofacial surgery department, College of dentistry, University of Anbar, Ramadi-Anbar province, Iraq.*

*\*Email address of the corresponding author: [aymanadnan.n.a@gmail.com](mailto:aymanadnan.n.a@gmail.com)*

**Article history:** Received 27 Dec. 2025, Accepted 28 Mar. 2026, Published online 15 Jun. 2026.

**Abstract:** Oral pyogenic granuloma (PG) is a benign but very vascular lesion that causes discomfort and bleeding. Conventional surgical excision is effective but has a high recurrence rate and postoperative pain. Diode laser excision is a less invasive procedure that offers precise tissue removal and better hemostasis. Our Objective is to evaluate the safety and efficacy of diode laser excision for the treatment of oral pyogenic granuloma. A total of sixteen patients (mean age 39.3; age range 15 - 74 years; 11 males and 5 females) with de novo oral PG were enrolled and all lesions were removed under local anesthesia using a continuous 1.5 W 980 nm diode laser with minimal bleeding, without the need for sutures and a 0.5 mm safety margin was kept. Patients were evaluated at one week and three weeks after surgery and on postoperative days one and three. Wound healing, hemostasis, pain and satisfaction were all assessed on every visit. The excised tissues were confirmed histopathologically. The diode laser provided better control over intraoperative bleeding, as any small amount of bleeding was easily controlled. Pain settled rapidly, as the majority of patients were comfortable by day three and completely pain-free within one week. The healing process progressed quickly, with satisfactory to excellent results by one week and full recovery by three. Nearly all patients expressed high satisfaction at the last follow-up. Diode laser excision is a safe and efficient treatment for oral PG that provides excellent hemostasis, less discomfort following surgery, quick healing, and high patient satisfaction. These findings corroborate the reliable clinical results of diode laser excision in current standard treatment.

**Keywords:** pyogenic granuloma, diode laser, benign tumor, laser surgery, oral swelling.

### 1. Introduction

Oral pyogenic granuloma is a benign proliferation of connective tissue characterized by excessive granulation tissue formation that most commonly affects the skin and mucosal surfaces, although it has been occasionally reported in subcutaneous tissues, intravascular locations, and rarely within the gastrointestinal tract. The etiopathogenesis of oral PG remains controversial and multifactorial; in some studies, it has an infectious origin, mainly related to the presence of staphylococci, streptococci, and other oral microorganisms in the case of ulcerated lesions, although their detection close to the surface of the lesion is often considered as secondary to contamination from the oral flora rather than a primary cause [1,2,3]. On the other hand, it is described by many authors as a reactive or reparative lesion that can be triggered by minor trauma, chronic irritation, and the presence of foreign bodies such as calculus, leading

to an excessive connective tissue proliferation [4, 5]. Trauma is widely recognized as a key factor that triggers the release of angiogenic mediators such as bFGF, which stimulate endothelial proliferation and angiogenesis during the granulation tissue formation [6, 2]. Clinically, oral PG typically presents as a soft, exophytic, pedunculated mass covered by a smooth, shiny mucosal surface. The lesion is highly vascular and bleeds easily even with minor trauma. In some cases, it may present as a sessile plaque rather than a pedunculated growth [8].

These lesions are generally painless and range in size from a few millimeters to several centimeters, often reaching their maximum dimensions within a few weeks to months, Jafarzadeh H [5]. Approximately 75% of oral PGs occur on the gingiva, most frequently in the interdental papilla of the maxillary anterior region, although other intraoral sites such as the lips, tongue, buccal mucosa, and palate may also be affected as seen by Regu P [9]. Lasers have emerged as one of the most impactful tools in modern dentistry, offering precision, control, and operative benefits that traditional scalpels often cannot match. By converting light energy into a highly focused beam, lasers can cut, ablate, or coagulate tissues with minimal trauma to surrounding structure as illustrated by Bernaola-Paredes WE [10]. This technology has the advantages of providing excellent hemostasis, reducing intraoperative pain, promoting faster postoperative recovery, giving the patient overall more comfort, all the qualities of great value, especially in oral surgery, where visibility and patient comfort are important [11]. Diode laser in oral surgery has certain advantages over conventional methods and other laser types, providing a precise, bloodless incision with excellent hemostasis without the need for sutures, minimizing postoperative pain, swelling, and scarring, and faster healing by secondary intention [12, 13].

The diode system is more compact, cost-effective, and easy to maneuver than CO<sub>2</sub> and erbium lasers, which makes it particularly well-suited to be used in routine clinical practice and as applied to the treatment of oral pyogenic granuloma, a benign but very vascular lesion that can cause discomfort, bleeding, and aesthetic concerns it brings distinct advantages. The inherent ability of lasers to seal blood vessels during excision minimizes intraoperative bleeding, thereby improving the surgeon's field of view and shortening operative time as noted by Azma E [12]. Moreover, the reduced mechanical trauma compared to scalpel surgery may lower recurrence rates, improve healing profiles, and enhance cosmetic outcomes in delicate oral tissues as demonstrated by Khan MK [14].

## 2. Materials and Methods

This prospective study was conducted in oral and maxillofacial department of Ramadi teaching hospital and oral and maxillofacial department of college of dentistry in university of Anbar, Anbar province, Iraq. The study included 16 participants: 11 males (=69 %) and 5 females (= 31%), aged 15 to 74 years (mean=39.31). All the participants had to meet a certain criteria before inclusion in the study, they must have de novo Pyogenic granuloma (not recurred) in any oral site, have no systemic disease that compromise the healing process or any condition that preclude laser use. A diode laser (Biolase, USA) of a wavelength 980/810nm was used with power output of 1.5 Watts delivered through a 400um fiber optic cable with an FC connector operating in continuous mode, both operator and patient were protected with laser goggles. Demographic and clinical data, including age, gender, medical and dental history, were documented. The surgical procedure was fairly explained to the patients and all patients signed consent form before operation. Pre-operative patient preparation included antimicrobial mouth wash and gowning. Local anesthesia technique was either Buccal and mental nerve block (lower gingiva), lingual nerve block (lateral tongue border) or infiltration (upper gingiva and tip of the tongue) using 2.2ml cartridge containing 2% lidocaine and 1:80.000 epinephrine. The margin of the lesion was outlined by simultaneous dual wavelength 980/810nm diode laser using repetitive strokes. The outline was 0.5 mm behind the lesion margin, and careful grasping of the lesion was performed during surgery by tissue forceps to avoid bleeding and tearing of tissue. Much attention was paid to lesion excision to prevent deterioration of the underling minor salivary glands. Following the outlined lesion margins, the lesion was excised with diode laser at 1.5W output and then elevated, the surgical site is left uncovered and un-



sutured as in (Figure 1), post-operative instructions were clarified to the patients, which focused on meticulous oral hygiene and avoiding trauma to the surgical site.

Clinical assessments were conducted to determine intraoperative bleeding and scored as: no bleeding=1, mild bleeding=2 (oozing requiring pressure), moderate bleeding=3 (requiring local hemostatic agents), severe bleeding=4 (requiring ligation). For pain and healing measurements, all the patients were assessed at fixed intervals postoperatively as follows, Day 1, Day 3, Week 1, Week 3. The intensity of pain was measured using verbal pain scale and expressed as: no pain=0, mild pain=1, moderate pain=2, severe pain=3. Tissue healing was assessed using the Landry, Turnbull, and Howley Healing Index. The scores are defined as follows: Score 1 – Very poor healing: Tissue color:  $\geq 50\%$  red, Bleeding on palpation: present, Granulation tissue: present, Epithelialization: absent. Score 2 – Poor healing: Tissue color:  $\geq 50\%$  red, Bleeding on palpation: present, Granulation tissue: present, Epithelialization: minimal. Score 3 – Good healing: Tissue color:  $\geq 25\%$  red, Bleeding on palpation: absent, Granulation tissue: absent, Epithelialization: present. Score 4 – Very good healing: Tissue color:  $< 25\%$  red, Bleeding on palpation: absent, Granulation tissue: absent Epithelialization: complete. Score 5 – Excellent healing: Tissue color: pink (normal) Bleeding on palpation: absent, Granulation tissue: absent, Epithelialization: complete.

All the samples in this study were put in 10% formalin plastic container and sent to histopathological examination for confirmation of diagnosis of pyogenic granuloma.

## 2.1 Statistical analysis

Data are presented as mean ranks and other descriptive statistics. Differences in intensity across the tested factors and follow-up time points were assessed using the Friedman test, a nonparametric alternative to repeated-measures ANOVA. Post hoc pairwise comparisons were performed using the Wilcoxon signed-rank test. Values of  $p > 0.05$  were considered statistically nonsignificant, while  $p \leq 0.05$  was considered significantly different. Statistical analysis was carried out using SPSS (v 20).

## 3. Results and discussion

Out of the total 16 documented cases, the upper gingiva was identified as the most frequently affected oral site, accounting for 5 cases. This was followed by the lower gingiva, where 4 cases were recorded. The dorsum of the tongue showed involvement in 3 cases, while the lateral border of the tongue and the lower lip were less commonly affected, with 2 cases each reported for both sites as shown in (Figure 2). Bleeding control during surgery worked well. 12 patients (75%) had no bleeding at all, showing just how effective the diode laser was at stopping blood flow. Of the remaining patients, three (18.8%) had mild bleeding that was easily managed with simple pressure, while one patient (6.2%) had moderate bleeding that was successfully controlled using the laser for coagulation. We followed the patients prospectively to track their pain levels from day one up to three weeks after surgery. The results showed pain scores dropping significantly as time went on. Statistical analysis using the Friedman test revealed a significant difference in pain across the follow-up periods ( $\chi^2 = 35.629$ ,  $p < 0.0001$ ) and effect size was calculated using Kendall's W at  $W=0.113$ , indicating small effect size all presented in (Table 1).

Further testing with Wilcoxon signed-rank tests confirmed that pain decreased significantly between each successive checkpoint. Interestingly, we found no real difference in pain between the first and third weeks, though pain intensity differed significantly at other measured time points as outlined in (Table 2). We also tracked how well patients healed during the same follow-up period, from the first day through the end of week three. The Friedman test showed highly significant results ( $\chi^2 = 45.73$ ,  $p < 0.0001$ ), Kendall' W effect size was  $W=0.143$ , indicating a small effect size as displayed in (Table 3). Wilcoxon signed-rank tests showed notable improvements in healing scores from one point to the next. Overall, our findings revealed highly significant improvements in recovery as time progressed [15], in which (Table 4) clearly illustrates. When it came to patient satisfaction on surgery day, most patients felt quite positive about their experience, with 10 patients rating it as good, and 4 patients calling it excellent, and only 2



patients saying fair or poor. By the next day, no patients reported poor outcomes, and most continued to rate the procedure as good (10 patients) or excellent (3 patients).

After three days, satisfaction shifted further toward excellent ratings (9 patients), with only a few remaining in the fair or good categories. By the end of the first week, all patients reported either good or excellent satisfaction, with most leaning toward excellent (11 patients). At the three-week follow-up, nearly all patients rated their satisfaction as excellent, with only a small minority describing it as good (2 patients) as shown in (Figure 3). The therapeutic efficacy of diode laser in the management of oral pyogenic granuloma is rooted in its photothermal mechanism of action, whereby laser energy emitted in the near-infrared spectrum (810–980 nm) is selectively absorbed by tissue chromophores principally oxyhemoglobin and melanin and converted into heat, producing temperature-dependent tissue effects [16,17]. What distinguishes this mechanism clinically is its inherent dose-dependence: at sub-ablative thermal thresholds, the resultant heat stimulates fibroblast activity and collagen remodeling through photobiomodulation pathways, while supra-lethal doses achieve coagulative necrosis and tissue vaporization [18, 19].

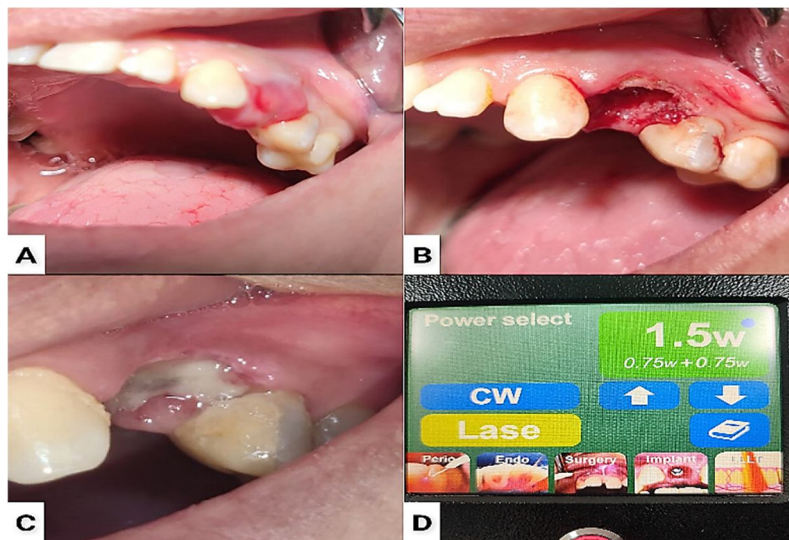
This biological duality is central to understanding both the appeal and the demands of diode laser surgery the same energy source that enables precise, bloodless excision can, if inadequately controlled, generate collateral thermal injury that compromises wound healing. It is worth noting that consensus on optimal laser parameters for pyogenic granuloma excision has not yet been established in the literature, and this methodological heterogeneity should be borne in mind when comparing outcomes across studies [18,19,20]. From a clinical standpoint, the advantages of laser-assisted excision over conventional cold blade surgery are well-grounded in these tissue-level mechanisms. Continuous photocoagulation of the lesion's feeding vessels during advancement of the fiber tip accounts for the superior intraoperative hemostasis that is consistently reported with diode laser use. Reduced mechanical traction on surrounding tissue minimizes collateral damage, while the bactericidal properties of the laser energy lower microbial contamination at the wound surface, a relevant consideration given the inflammatory microenvironment of pyogenic granuloma. Sealing of peripheral sensory nerve endings attenuates postoperative pain, and the combination of these effects typically results in cleaner wound healing, improved aesthetic outcomes, and elimination of the need for sutures in many cases [18, 19, 20].

The findings of the present study are broadly concordant with this body of evidence. Intraoperative hemostasis was consistently excellent, a finding of particular clinical relevance in patients with medical comorbidities predisposing to bleeding complications. Pain intensity showed a progressive and marked reduction across postoperative follow-up intervals, consistent with the conservative nature of laser tissue interaction. Wound healing assessments at one week demonstrated good-to-excellent outcomes in the majority of patients, and overall satisfaction already favorable on the day of surgery was sustained at subsequent follow-up visits. These results support the efficacy and safety of the diode laser protocol employed in this study and are in agreement with comparable single-arm and controlled investigations reported in the literature. However, intellectual honesty demands that these favorable findings be situated within a broader and more critical comparative context. A randomized controlled trial by Anwar et al. comparing diode laser with ethanolamine oleate sclerotherapy in 20 patients with oral pyogenic granuloma yielded findings that merit careful consideration [15]. Although intraoperative bleeding did not differ significantly between groups, postoperative pain was significantly lower in the sclerotherapy arm, and of greater clinical concern recurrence was documented exclusively among laser-treated patients across all follow-up intervals of three, six, and nine months, with no recurrences recorded in the sclerotherapy group. The authors concluded that sclerotherapy constitutes a simpler, less equipment-dependent modality with a more favorable recurrence profile. These findings do not negate the clinical utility of diode laser, but they underscore the importance of avoiding an uncritical endorsement of any single modality and highlight recurrence as an outcome that warrants close attention in laser-based management of pyogenic granuloma. Conventional surgical excision, while historically regarded as the

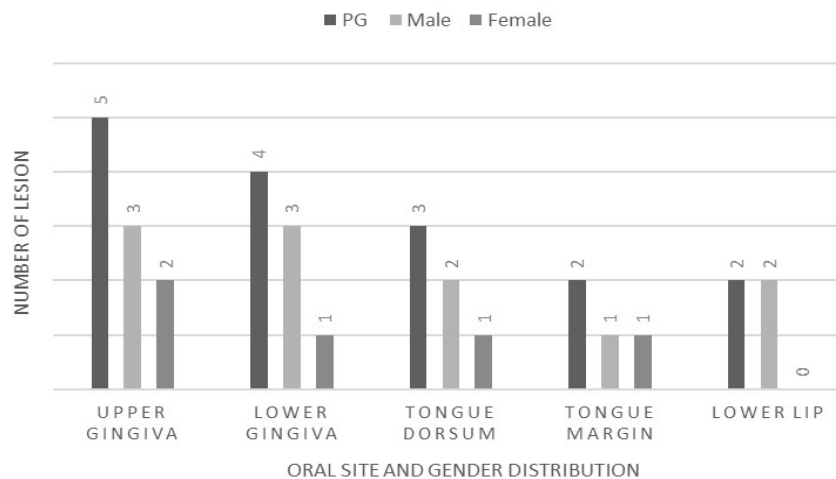


treatment of choice, is associated with recognized limitations that provide additional context for evaluating laser-based alternatives.

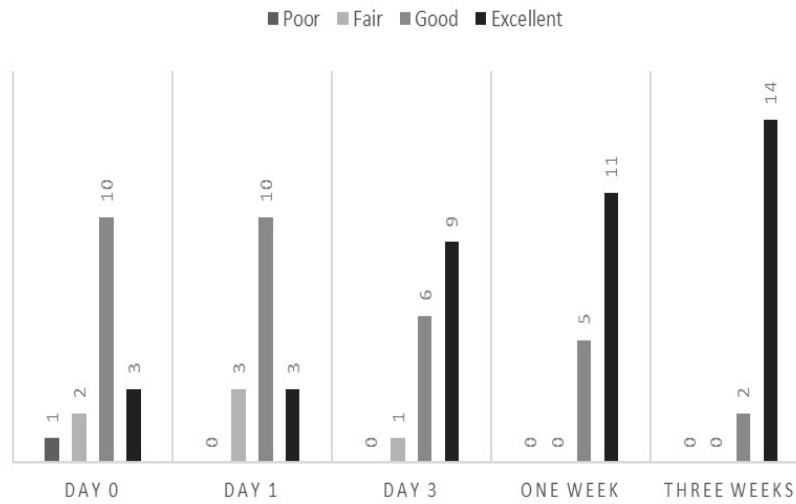
Recurrence following simple excision particularly when surgical margins are inadequate has been documented by Daif et al. [20] and Al-Noaman [22]. The highly vascular nature of pyogenic granuloma renders cold blade surgery susceptible to significant intraoperative and postoperative hemorrhage [5], and comparative data reported by Khan et al. [23] consistently demonstrate higher postoperative pain scores in patients managed by conventional excision relative to those treated by minimally invasive methods. In this context, diode laser represents a genuine therapeutic advance; yet it is most accurately understood as one modality within a spectrum of options, each carrying distinct trade-offs with respect to cost, equipment requirements, operator expertise, recurrence risk, and patient experience. Randomized controlled trials with larger sample sizes, standardized laser parameters, and extended follow-up periods remain necessary to consolidate the evidence base and guide evidence-informed clinical decision-making.



**Fig. 1:** Diode laser excision of gingival pyogenic granuloma in 30-years old female: (A) Initial situation, (B) immediately post-operative situation, (C) one week following diode laser excision, (D) Laser parameters.



**Fig. 2:** Distribution of pyogenic granuloma in the oral cavity of male and female patients.



**Fig. 3:** Satisfaction level during follow-up periods.

**Table 1.** Statistical analysis of pain score profile across four time periods.

Descriptive Statistics						Friedman Test
Pain durations	N	Mean	Std. Deviation	Minimum	Maximum	Mean ranks
One day	16	1.500	.96609	.00	3.00	3.75
Three days	16	.5625	.72744	.00	2.00	2.56
One week	16	.1250	.34157	.00	1.00	1.91
Three weeks	16	.0000	.00000	.00	.00	1.78

Chi-square ( $\chi^2$ ) 35, 629 P value=0.0001, W=0.113  
The result is significant at  $p \leq 0.05$

**Table 2.** Comparative statistical analysis of the relationship between pain scores and time.

Wilcoxon Signed Ranks Test						
Pain score	3 days – one day	one week - one day	3 weeks - one day	one week - 3 days	3 weeks - 3 days	3 weeks - one week
Z	-3.217	-3.372	-3.354	-2.646	-2.460	-1.414
Sig. (2-tailed)	0.001	0.001	0.001	0.008	0.014	0.157



**Table 3.** Statistical analysis of healing score profile across four time periods.

		Descriptive Statistics				Friedman Test
Healing durations	N	Mean	Std. Deviation	Minimum	Maximum	Mean ranks
One day	16	1.4375	.51235	1.00	2.00	1.13
Three days	16	2.3750	.61914	1.00	3.00	1.97
One week	16	3.3750	.61914	2.00	4.00	2.94
Three weeks	16	4.5000	.63246	3.00	5.00	3.97

Chi-square ( $X^2$ ) =45.73, P value=0.0001, W=0.143  
The result is significant at  $p \leq 0.05$

**Table 4.** Comparative statistical analysis of the relationship between healing scores and time.

Wilcoxon Signed Ranks Test						
Healing score	3 days – one day	one week - one day	3 weeks - one day	one week - 3 days	3 weeks- 3 days	3 weeks - one week
Z	-3.217	-3.598	-3.624	-3.358	-3.624	-3.626
Sig. (2-tailed)	0.001	0.0001	0.0001	0.001	0.0001	0.0001

## 4. Conclusion

In this study, good intraoperative hemostasis was achieved following diode laser application avoiding the use of sutures. Post-operative pain was also significantly reduced with excellent healing outcomes, thus the application of diode laser shows favorable results and can be used in the management of oral PG.

## Acknowledgment

The authors would like to express their deepest gratitude to all the staff in Ramadi Teaching hospital, department of oral and maxillofacial surgery and all the workers of oral and maxillofacial surgery clinics in college of dentistry, University of Anbar.

## Limitations

Lack of patient consistency during follow ups, absence of comparison group, no follow up period to identify recurrences.

## Ethics approval and consent for authors

This study was conducted in full accordance with the ethical principles outlined in the Declaration of Helsinki and its subsequent amendments. Ethical approval was obtained from the Ethical Committee at the University of Anbar under Ref 44 on 3/7/2025 prior to the commencement of the study. Written informed consent was obtained from all



participants prior to enrollment, and all patients were assured of their right to withdraw from the study at any time without consequence. Patient data were handled with strict confidentiality throughout all phases of the study.

### Author declaration

All authors declare that this work is original and done with full accordance to the declaration of Helsinki and ethical committee guidelines and had not been published nor submitted elsewhere.

### Funding

The authors declare there was no external source of funding in this study.

### Conflict of interests

The authors declare no conflict of interests

### Author contributions

Sample collection, data analysis, surgery, and writing were performed by AAN. Supervision, conceptualization, and methodology were made by TNA.

### References

- [1] L. D. Thompson, "Lobular capillary hemangioma (pyogenic granuloma) of the oral cavity," *Ear Nose Throat J.*, 96(7), p. 240 (2017). doi:10.1177/014556131709600716.
- [2] D. A. Kerr, "Granuloma pyogenicum," *Oral Surg. Oral Med. Oral Pathol.*, 4(2), pp. 158-176 (1951). doi:10.1016/0030-4220(51)90432-X.
- [3] R. Rajendran and B. Sivapathasundharam, *Shafer's Textbook of Oral Pathology*, 6th ed., Elsevier, New Delhi, pp. 126-130 (2009).
- [4] J. Regezi, J. Sciubba, and R. Jordan, *Oral Pathology: Clinical Pathologic Correlations*, 7th ed., Elsevier/Saunders, St. Louis, p. 118 (2016).
- [5] H. Jafarzadeh, M. Sanatkhan, and N. Mohtasham, "Oral pyogenic granuloma: a review," *J. Oral Sci.*, 48(4), pp. 167-175 (2006). doi:10.2334/josnurd.48.167.
- [6] M. Murata, K. Hara, and T. Saku, "Dynamic distribution of basic fibroblast growth factor during epulis formation: an immunohistochemical study in an enhanced healing process of the gingiva," *J. Oral Pathol. Med.*, 26(5), pp. 224-232 (1997). doi:10.1111/j.1600-0714.1997.tb01228.x.
- [7] S. Daoudi, S. Tabbai, and H. Ramdi, "Oral Pyogenic Granuloma in a Child: Suspected Hormonal and Traumatic Factors, Clinical Features, and Surgical Management," *Cureus*, 17(5), e84713 (2025). doi:10.7759/cureus.84713.
- [8] P. Sarwal and K. Lapumnuaypol, "Pyogenic Granuloma," in *StatPearls*, StatPearls Publishing, Treasure Island, FL (2025).
- [9] P. Regu, S. Aatman, and G. V. Murali, "Pyogenic granuloma of the tongue—a rare clinical finding," *Int. J. Dent. Case Rep.*, 3, pp. 57-61 (2013).
- [10] W. E. Bernalda-Paredes, M. B. da Silva Conceição, S. C. Moreira, A. M. A. Souza, P. S. Souza Pina, L. H. Azevedo, et al., "Clinical and histopathological features of congenital epulis in a newborn submitted to laser surgery," *J. Oral Maxillofac. Pathol.*, 26(Suppl. 1), pp. S77-S79 (2022). doi:10.4103/jomfp.jomfp\_449\_20.
- [11] S. Parker, "Laser regulation and safety in general dental practice," *Br. Dent. J.*, 202, pp. 523-532 (2007). doi:10.1038/bdj.2007.370.
- [12] E. Azma and N. Safavi, "Diode laser application in soft tissue oral surgery," *J. Lasers Med. Sci.*, 4(4), pp. 206-211 (2013).
- [13] D. De Falco, D. Di Venere, and E. Maiorano, "An overview of diode laser-assisted oral surgery," *Cureus*, 12(7), e9297 (2020).



- [14] M. K. Khan and M. K. Jindal, "Diode laser as minimal invasive treatment modality for oral pyogenic granuloma in a pediatric patient: A case report," *J. Pediatr. Dent.*, 7(3), p. 178 (2021).
- [15] S. K. Anwar, S. N. Edward, and N. M. ELayed, "Diode laser versus sclerotherapy: bloodless approaches in the treatment of oral pyogenic granuloma (randomised controlled clinical trial)," *Odontology*, 111(2), pp. 511-521 (2023). doi:10.1007/s10266-022-00759-9.
- [16] N. Silberberg, M. Goldstein, and A. Smidt, "Excessive gingival display-etiology, diagnosis, and treatment modalities," *Quintessence Int.*, 40(10), pp. 809-818 (2009).
- [17] E. İşiksal, S. Hazar, and S. Akyalçin, "Smile esthetics: perception and comparison of treated and untreated smiles," *Am. J. Orthod. Dentofacial Orthop.*, 129(1), pp. 8-16 (2006). doi:10.1016/j.ajodo.2005.07.004.
- [18] T. N. Aldelaimi, et al., "Gummy smile esthetic correction with 940 nm diode laser," 26(6), pp. 513-515 (2025).
- [19] A. A. Khalil, T. N. Aldelaimi, and S. M. Abdulkareem, "Pleomorphic adenoma of palatal minor salivary glands," *Rev. Esp. Cir. Oral Maxilofac.*, 46(3), pp. 145-150 (2024).
- [20] F. Alpiste-Illueca, "Dimensions of the dentogingival unit in maxillary anterior teeth: a new exploration technique (parallel profile radiograph)," *Int. J. Periodontics Restorative Dent.*, 24(4), pp. 386-396 (2004).
- [21] E. T. Daif, "Correlation of age, sex, and location with recurrence of oral giant pyogenic granuloma after surgical excision," *J. Craniofac. Surg.*, 27(5), pp. 433-435 (2016). doi:10.1097/SCS.0000000000002711.
- [22] A. S. Al-Noaman, "Pyogenic granuloma: clinicopathological and treatment scenario," *J. Indian Soc. Periodontol.*, 24(3), pp. 233-236 (2020). doi: 10.4103/jisp.jisp\_132\_19.
- [23] M. A. Khan, S. Nazir, M. U. Haider, M. Hameed, A. Shabbir, and B. Shirazi, "Surgical excision vs minimally invasive (scaling & curettage) treatment for oral pyogenic granuloma," *Ann. Punjab Med. Coll.*, 16(4), pp. 310-313 (2022). doi:10.29054/apmc/2022.1218.

## الفعالية السريرية لليزر الدايدوي في علاج الورم الحبيبي القيحي الفموي

ايمن عدنان نجم\*, تحرير نزال الداليمي

قسم جراحة الفم و الوجه و الفكين، كلية طب الاسنان، جامعة الانبار، الرمادي-محافظة الانبار، العراق.

للباحث البريد الالكتروني: [aymanadnan.n.a@gmail.com](mailto:aymanadnan.n.a@gmail.com)

**الخلاصة:** الورم الحبيبي القيحي (Pyogenic Granuloma, PG) هو آفة فموية حميدة شديدة الوعائية، تتظاهر عادة بعدم الارتياح وحدوث نزف متكرر. ويعد الاستئصال الجراحي التقليدي علاجاً فعالاً، إلا أنه غالباً ما يرتبط بألم ما بعد الجراحة واحتمالية النكس. ويوفر الاستئصال باستخدام ليزر الدايدوي بديلاً علاجياً قليل التداخل، يتميز بالدقة العالية في إزالة النسيج وتحقيق إرقاء ممتاز. الأهداف: تقييم فعالية وسلامة الاستئصال باستخدام ليزر الدايدوي في تدبير الورم الحبيبي القيحي الفموي.

المواد وطرائق العمل: شملت الدراسة ستة عشر مريضاً مصابين بورم حبيبي قيحي فموي حديث الظهور (11 ذكور و 5 إناث)، تراوحت أعمارهم بين 15 و 74 سنة، بمتوسط عمري قدره 39.3 سنة. تم استئصال جميع الأفات تحت التخدير الموضعي باستخدام ليزر دايدوي بطول موجي 980 نانومتر وباستطاعة 1.5 واط في النمط المستمر. تم الحفاظ على هامش أمان مقداره 0.5 مم، وأسهم النزف الطفيف في الاستغناء عن الخياطة الجراحية. جرى تقييم المرضى في اليومين الأول والثالث بعد الجراحة، ثم بعد أسبوع وثلاثة أسابيع. وتم تسجيل شدة الألم، ومستوى الإرقاء، وسير التئام الجرح، ودرجة رضا المرضى في كل زيارة. كما خضعت النسيج المستأصلة للفحص النسيجي المرضي لتأكيد التشخيص. النتائج: أظهر ليزر الدايدوي قدرة ممتازة على التحكم بالنزف أثناء الجراحة، حيث كان أي نزف طفيف سهل السيطرة عليه. وانخفضت شدة الألم بسرعة، إذ شعر معظم المرضى بالراحة بحلول اليوم الثالث، وأصبحوا خالين تماماً من الألم خلال أسبوع واحد. وتقدم التئام الجروح بشكل سريع، مع نتائج جيدة إلى ممتازة بعد أسبوع، وشفاء كامل خلال ثلاثة أسابيع. وأفاد معظم المرضى بدرجة عالية من الرضا في المتابعة النهائية. الاستنتاج: يعد الاستئصال باستخدام ليزر الدايدوي وسيلة علاجية آمنة وفعالة للورم الحبيبي القيحي الفموي، لما يوفره من إرقاء متفوق، وانخفاض في الانزعاج بعد الجراحة، وتسارع في التئام الجروح، وارتفاع مستوى رضا المرضى. وتدعم هذه النتائج الأداء السريري المتسق لليزر الدايدوي كخيار علاجي موثوق في الممارسة السريرية الروتينية المعاصرة.

