DENTAL

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# Peri-implant Peripheral Giant Cell Granuloma; A Case Report with Follow-Up

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**ABSTRACT**

**Aim:** In the literature, there are few reported cases of peri-implant peripheral giant cell granuloma (PGCG). Peripheral giant cell granuloma (PGCG) is an uncommon, non-malignant growth found within the gingival tissues of the oral cavity. While its precise etiology remains elusive, it is generally thought to be triggered by local factors such as trauma or infection.

The purpose of the study was to report the case of a peri-implant PGCG in a patient and to describe the successful treatment of this case.

**Case Report:** A 45 years old female patient reported to the outpatient department with a chief complaint of a mass in left upper posterior region (#25, implant) for last two months. It was managed by an excision biopsy and was diagnosed as peri-implant PGCG after histopathological analysis.

**Results:** Fifteen days after surgery healing was occurred and three and six months later area of the lesion appeared completely normal as clinically.

**Conclusion:** Peri-implant PGCG in most cases is benign conditions, diagnosed based on clinical and histopathological examination. Clinically, the lesion appears as a painless swelling on the upper or lower jaw and is typically asymptomatic. The patient reviewed for the next three and six mounts revealed complete satisfactory healing and no recurrence.

**Keywords:** Peripheral Giant Cell Granuloma, Peri-Implant Peripheral Giant Cell Granuloma, Dental Implant, Periodontal Debridement, Gingival Enlargement, Periodontal Surgery

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## INTRODUCTION

Peripheral giant cell granuloma (PGCG) is a reactive oral lesion that occurs in the gingiva or alveolar ridge mucosa. It has been reported that 58% of PGCG cases occur in the mandible, 44% in the anterior regions of the arches, and 83% are associated with teeth, whereas 2% of cases develop around dental implants [1,2]. Clinically, PGCG usually presents as a red, purple, or bluish nodular lesion and may have either a sessile or pedunculated base. Although most lesions are asymptomatic, superficial ulceration and bleeding may occur [2-4].

Local irritation and trauma, as well as dental plaque, calculus, inappropriate restorations, and repeated mechanical trauma caused by prostheses have been reported as etiological factors in PGCG [2,3,5]. In peri-implant PGCG cases, factors such as local irritation, inappropriate prosthetic components, and inadequate local hygiene may contribute to lesion development [2,5,6].

The peri-implant lesions are nonspecific inflammation, pyogenic granuloma, and PGCG. PGCG is an uncommon, non-malignant growth. Abofoul et al. [6] reported a total of 335 peri-implant biopsies including nonspecific inflammation, pyogenic granuloma, and PGCG, of which 52 (15.5%) were diagnosed as peri-implant PGCG. In addition, bone involvement may occur in 51.2% of peri-implant PGCG cases and recurrence in 46.1%, and stated that these lesions may exhibit clinically locally aggressive behavior [6]. Hirshberg et al. [3] reported a total of 25 peri-implant biopsies, of which 3 (12%) were diagnosed as peri-implant PGCG [3].

However, since the clinical appearance of peri-implant PGCG may resemble that of other oral lesions, histopathological examination is important for establishing an accurate diagnosis [4,6]. Histopathologically, PGCG is characterized by the presence of numerous multinucleated giant cells and is thought to originate from cells derived from the periodontal ligament or periosteum [3-6].

This case report aimed to present the clinical and histopathological features, surgical treatment, and six-month follow-up outcomes of a peri-implant PGCG case.

This case report was prepared and reported in accordance with the CaReL guidelines [7].

## CASE REPORT

A 45-year-old female patient presented to our clinic with complaints of gingival bleeding, enlargement, and discomfort during mastication around the dental implant in the upper left posterior region (#25), which had been present for approximately two months. Medical history revealed no systemic diseases, allergies, or routine medication use.

Dental history indicated that the implant at site #25 was placed approximately two years ago, and the peri-implant region had been subjected to mechanical trauma due to recurrent decementation of the porcelain crown.

Clinical examination revealed a red-purple, nodular, and firm gingival enlargement, approximately 20mm in diameter, surrounding the #25 implant **(Figure 1A).** Radiographic evaluation demonstrated bone loss around the #25 implant **(Figure 1B).** Based on the clinical and radiographic evaluation, a provisional diagnosis of peripheral giant cell granuloma (PGCG) was made, which was subsequently confirmed by histopathological examination **(Figure 1D).**

The treatment protocol comprised oral hygiene instructions, initial periodontal therapy, and complete excision of the lesion.

### Surgical Procedure

Following local anesthesia, a full-thickness flap was elevated around the implant, and the lesion was completely excised and separated from the flap before being submitted for histopathological examination **(Figure 1C).** The peri-implant area was carefully curetted and irrigated with a povidone-iodine solution. Despite peri-implant bone loss, implant stability was found to be maintained. The full-thickness flap was released and sutured to achieve primary closure while thoroughly encircling the implant **(Figure 1E).**

Postoperatively, an analgesic (Ibuprofen 200 mg, b.i.d.) and an antiplaque spray (Chlorhexidine spray, q.i.d.) were prescribed. Postoperative instructions and oral hygiene measures were provided both verbally and in writing.

Surgical sutures were removed on the 15th postoperative day, with no observed complications **(Figure 1F)**. At the 30-day follow-up, the surgical site exhibited excellent clinical healing, with no signs of edema, erythema, or patient discomfort **(Figure 1G).** At the 3- and 6-month postoperative follow-ups, the peri-implant region presented a clinically normal appearance with no evidence of recurrence, and the patient maintained adequate plaque control **(Figure 1H).**



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This case report was conducted in accordance with the ethical principles of the Declaration of Helsinki (2013 revision). Written informed consent was obtained from the patient for the publication of clinical data and accompanying images.

## DISCUSSION

Peri-implant PGCG is a rare, painless, benign, reactive soft tissue lesion that develops around dental implants with their increasing clinical use. Peri-implant PGCG has been predominantly reported in adult females and in the premolar region [4,6,8]. The demographic and clinical characteristics observed in our patient are consistent with those reported in the literature.

Although the exact etiology of peri-implant PGCG remains to be fully elucidated, inadequate oral hygiene, ill-fitting prosthetic restorations, local irritation, and trauma are considered potential etiologic factors [9,10]. Hirshberg et al. [3] evaluated three cases of PGCG associated with dental implants and stated that these lesions represent reactive processes secondary to local irritation or trauma [3]. In our case, repetitive mechanical trauma resulting from an ill-fitting implant-supported prosthesis can be considered a local etiologic irritant.

Clinically, peri-implant PGCG usually presents as a reddish-purple, nodular or exophytic, and mostly asymptomatic lesion. In a case series reported by Lester et al. [1], the mean lesion size was observed to be 12.7mm, with superficial ulceration present in a significant proportion of cases [1]. Hirshberg et al. also reported that lesion size could exceed 30mm[3]. In our case, red-purple, nodular, firm peri-implant gingival enlargement of approximately 20mm in diameter was observed. These clinical features align with peri-implant PGCG reported in the literature.

Radiographically, although peri-implant PGCG can cause superficial bone erosion and, less frequently, damage to adjacent teeth, it is primarily a soft tissue lesion that often spares the underlying hard tissues [11]. In their investigation of 25 peri-implant lesions, Hirshberg et al. [3] identified three cases of PGCG and reported that while the implants were initially stable, two implants were subsequently removed due to surrounding bone loss or recurrent lesions [3]. In a study of 335 peri-implant biopsy specimens, Abofoul et al. identified 52 cases of peri-implant PGCG and reported bone involvement in 51.2% and recurrence in 46.1% of these cases [6]. In the present case, despite the preservation of implant stability, alveolar bone loss was radiographically detected.

Peri-implant lesions commonly manifest as nonspecific inflammation, pyogenic granuloma, or PGCG; therefore, the definitive differential diagnosis of peri-implant PGCG must be established histopathologically. In this case, histopathological examination revealed a moderately collagenized connective tissue stroma covered by ulcerated and hyperplastic stratified squamous epithelium, containing young fibroblasts, scattered multinucleated giant cells, and diffuse chronic inflammatory cell infiltrate. These findings are consistent with the histopathological features described in the literatüre [8].

The primary therapeutic approach for peri-implant PGCG involves the elimination of local irritants and complete surgical excision of the lesion. Bischof et al. [13] performed complete lesion excision along with curettage and mechanical debridement around the implant in a case of peri-implant PGCG, reporting no recurrence after a 3-year follow-up [13]. Similarly, Baesso et al. [5] performed an excisional biopsy and surgical curettage in a peri-implant PGCG case, reporting that osseointegration was maintained and no recurrence occurred at the 6-month follow-up [5]. Abofoul et al. [6] emphasized that peri-implant PGCG may be associated with bone involvement and recurrence, highlighting the importance of total excision and local irritant removal [6]. In our case, following initial periodontal therapy, the lesion was completely excised, mechanical debridement of the peri-implant area was performed, and irrigation with an antiseptic solution was carried out. At the routine 1-month, 3-month and 6-month follow-up visits, healing was uneventful and no signs of recurrence were observed.



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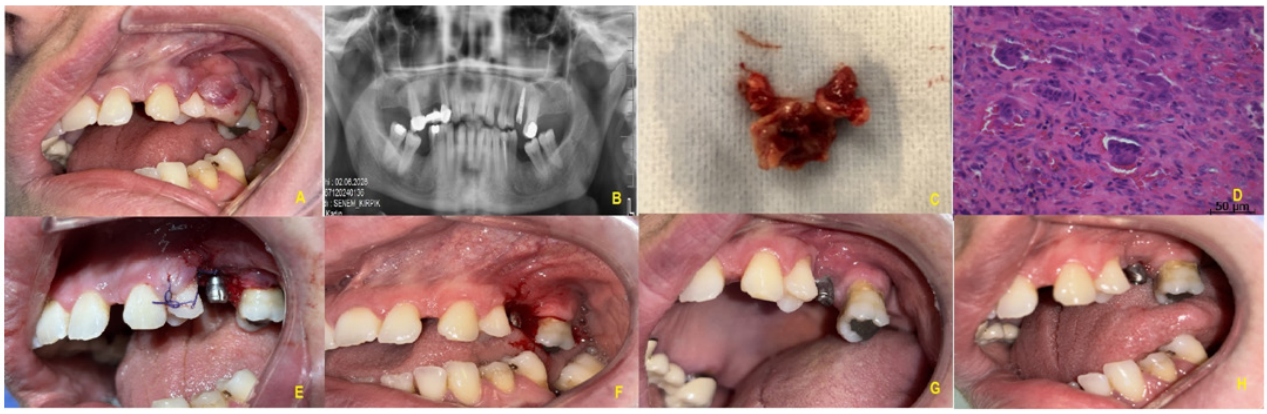


**Figure 1:** Management of Peri-implant peripheral giant cell granuloma

**A:** Preoperative intraoral view

**B:** Orthopantomographic image

**C:** Excised lesion obtained following surgical resection

**D:** Histopathological appearance of the lesion

**E:** Immediate postoperative view

**F:** Follow-up view at 15 days

**G:** Follow-up view at 1 month

**H:** Follow-up view at 3 months

## CONCLUSIONS

Peri-implant PGCG in most cases is benign conditions, diagnosed based on clinical and histopathological examination. Clinically, the lesion appears as a painless swelling on the upper or lower jaw and is typically asymptomatic. The patient reviewed for the next three and six mounts revealed complete satisfactory healing and no recurrence. Long-term clinical follow-up is recommended to monitor for potential recurrence.

## REFERENCES


1. Lester SR, Cordell KG, Rosebush MS, Palaiologou AA, Maney P. (2014) Peripheral giant cell granulomas: a series of 279 cases. Oral Surg Oral Med Oral Pathol Oral Radiol. 118(4):475-482.

2. Michalis I, Tasiopoulos K, Christou N, Mitsika I, Silvestros S. (2025). Surgical and prosthetic management of a peripheral giant cell granuloma around dental implants: a case report and review of the literature. Cureus. 17(11):e96837.

3. Hirshberg A, Kozlovsky A, Schwartz-Arad D, Mardinger O, Kaplan I. (2003). Peripheral giant cell granuloma associated with dental implants. J Periodontol. 74(9):1381-1384.

4. Sánchez-Torres A, Pérez-Amate B, Javier AN, Cercadillo-Ibarguren I, Figueiredo R, Tucci R, et al. (2021). Peripheral giant cell granuloma associated with a dental implant: A case report. J Clin Exp Dent. 13(10):e1049-e1052.

5. Baesso RCP, de Lima Jacy Monteiro Barki MC, de Souza Azevedo R, da Costa Fontes KBF, Pereira DL, et al. (2019). Peripheral giant cell granuloma associated with a dental implant. BMC Oral Health. 19(1):283.

6. Abofoul S, Zlotogorski Hurvitz A, Koren-Grienstein O, Shuster A, Vered M, et al. (2022) Peripheral giant cell granuloma associated with dental implants: case-series. Clin Implant Dent Relat Res. 24(1):133-137.

7. Prasad S, Nassar M, Azzam AY, Jose FG, Jamee M, Rim Sliman RKA, et al. (2024). CaReL Guidelines: A Consensus-Based Guidelines on Case Reports and Literature Review (CaReL). Barw Medical Journal. 2(2):13-19.

ISSN: 2690-3970

8. Dilsiz A, Demirtas R, Turksoy A, Tanas A, Bekdas F. (2026). Immunohistochemical analysis of lymphocyte subpopulation in peri-implant peripheral giant cell granuloma. Eurasian J Med. 58(4):1-6.

9. Fligelstone S, Ashworth D. (2024). Peripheral giant cell granuloma: a case series and brief review. Ann R Coll Surg Engl. 106(7):649-651.

10. Brown AL, Camargo de Moraes P, Sperandio M, Borges Soares A, Araújo VC, et al. (2015). Peripheral giant cell granuloma associated with a dental implant: a case report and review of the literature. Case Rep Dent. 2015:697673.

11. Etoz OA, Demirbas AE, Bulbul M, Akay E. (2010) The peripheral giant cell granuloma in edentulous patients: Report of three unique cases. Eur J Dent. 4:329–33.

12. Hernández G, López-Pintor RM, Torres J, de Vicente JC. (2009). Clinical outcomes of peri-implant peripheral giant cell granuloma: a report of three cases. J Periodontol. 80(7):1184-1191.

13. Bischof M, Nedir R, Lombardi T. (2004). Peripheral giant cell granuloma associated with a dental implant. Int J Oral Maxillofac Implants. 19(2):295-299.