Case Report

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Ossifying fibroma from surgical excision to periodontal management: case report

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Introduction and importance: Peripheral ossifying fibroma is one of the commonly occurring reactive benign lesions that occurs in the gingiva, predominantly in females, especially in the anterior maxillary region of young women and in pediatric patients. It causes unsatisfactory esthetics, difficulty in maintaining good oral hygiene and difficulty in mastication. The importance of this clinical case is to emphasize the interest of early management of the residual defect after the removal of the gum growth.

Case presentation: A 39-year-old female patient was referred to the clinical department of periodontology, with the chief complaint of bleeding gingiva, unsatisfactory esthetics and gum growth on the interproximal area in relation to left maxillary canine and premolar region, with the size ~2 cm × 1.5 cm.

Clinical discussion: This article describes an atypical case of peripheral ossifying fibroma with the clinical, histopathologic, and radiographic features in the posterior maxilla in an adult female patient. Treatment consisted of complete surgical excision, gingival curettage, and management of keratinezed gingiva by utilizing laterally displaced flap. Clinical healing was satisfactory at 2 weeks, and excellent coverage of residual mucogingival defect with no evidence of recurrence was achieved 3 weeks postoperatively. The patient was satisfied with case resolution with a follow-up of 1 year.

Conclusion: Although surgical excision is the treatment of choice, sometimes it may induce residual soft tissue defect, which may further precipitate functional and esthetic discrepancies if not managed.

Keywords: case report, laterally displaced flap, ossifying fibroma, surgical excision

Introduction

Peripheral ossifying fibroma (POF) is a benign fibro-osseous lesion mainly occurring in young adults and seems to originate from the cells of the periodontal ligament[1].

It is generally considered to be solitary lesion with the majority found in the maxilla, specifically the incisor and canine areas[2,3]. Clinically, POF appears as a small gingival growth with a sessile or pedunculated base, usually arising from interdental papilla[4].

This lesion usually occurs as a response to mild chronic irritation associated with dental calculus, plaque, micro-organisms and poorly adapted prosthetic and orthodontic appliances.

The standard treatment protocol involves surgical excision followed by the biopsy of lesion. However, sometimes, if the excised lesion is large, it may create a residual soft tissue defect, which may further precipitate functional and esthetic discrepancies if not managed immediately.

The present case not only describes the method of assessment and diagnosis of POF but also harmonizes the repair of residual gingival defect by laterally displaced flap (LDF) technique in the posterior region.

This case report has been reported in line with the Surgical CAse REport (SCARE) criteria[5].

HIGHLIGHTS

- Peripheral ossifying fibroma is one of the commonly occurring reactive benign lesions that occurs in the gingiva.
- Prevalence of peripheral ossifying fibroma among females is higher and observed in the third and fourth decades of life, especially in the anterior upper gingiva.
- Laterally displaced flap was a promising surgical technique for repairing the unesthetic appearance of gingiva and functional difficulties that might be associated with residual mucogingival defect.

Case report

A 39-year-old female patient was referred to the clinical department of periodontology, with the chief complaint of gum growth.

The patient noticed that the growth had begun 6 months previously and gradually progressed to the present size. She was suffering from swollen and bleeding gingiva, unsatisfactory esthetics, and difficulty in maintaining good oral hygiene.

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The patient appeared apparently healthy with no significant medical history.

An intraoral examination revealed weak oral plaque control: Her Löe and Silness plaque index (PI) was 1.60 and her Löe and Silness gingival index (GI) was 2.75.

Intraoral examination showed a pedunculated, focal mass on the interproximal area in relation to left maxillary canine and premolar region, the size was approximately around 2 cm × 1.5 cm. The growth was pinkish red, soft with a smooth surface and was not ulcerated (Fig. 1A).

There was no spontaneous bleeding, but the growth was slight bleeding on gentle probing indicating inflamed and engorged tissue.

Intraoral radiographs showed initial interdental alveolar bone loss between 23 and 24 (Fig. 1B).

A provisional diagnosis of pyogenic granuloma and differential diagnosis of irritational fibroma and POF were considered on the basis of anatomic location and clinical presentation.

The initial periodontal management consisted of nonsurgical periodontal therapy by motivating the patient to undertake successful removal of supragingival dental biofilm and risk factor control, combined with controlling (reducing/eliminating) the subgingival biofilm and calculus (subgingival instrumentation).

Three weeks after initial periodontal therapy, lesion was slightly reduced in size (Fig. 2).

Under local anesthesia, the lesion was excised 0.5–1 mm beyond its clinical to clear the cells of origin including the associated periodontal ligament and periosteum and the underlying surface was also cleaned to avoid any source of irritation for recurrence of the lesion. Scaling and root planning were performed on the affected root surface (Fig. 3A).

The residual mucogingival defect, which resulted from complete excision of POF was managed by LDF. A partial thickness flap was raised using the 15c blade beyond MGJ with the special care given to leave the periosteum to protect the underlying bone. The flap is then moved laterally to cover the exposed root, leaving the donor site exposed. It was necessary to make a short oblique releasing incision at the base of the flap to avoid any tension that may impair the vascular circulation when the flap is positioned. The flap is then secured using 4-0 single interrupted sutures (Fig. 3B).

Patient was discharged with necessary postoperative instructions. Analgesics (Ibuprofen 200–400 mg) were prescribed to be taken as and when required and 0.2% chlorhexidine mouth rinse after 24 h were advised for 10 days postsurgical.

The pathological examination confirmed the diagnosis of POF by showing a benign tumor lesion of osteo-fibrous nature made of bone lamellae of variable size and shape, most often anastomosed, more at least immature, lined on the surface by an osteoblastic border. The fibrous component is richly cellular with regular fusiform cells without atypies. This lesion appears limited with no mitotic activity.

The diagnosis of POF was established on the basis of clinical and histological findings.

The patient presented for follow-up examination 10 days' postoperatively. the sutures were removed and the surgical site appeared to be healing well. The patient was reviewed for regular periodontal maintenance at the rate of one session per week. The motivation for oral hygiene was renewed each time to ensure the perinity of the results.

At 1 month postoperatively the surgical site had healed completely and complete coverage was observed. The flap was well adapted to the underlying bone with physiologically scalloped contours.

The maintenance therapy showed a stability of results over a period of 1 year and no evidence of recurrence was reported (Fig. 4).

Discussion

POF is a common inflammatory reactive lesion exclusively observed in the periodontal tissues. It is suggested to originate from the superficial periodontal ligament or from the soft tissue overlying alveolar process (periosteum)[6].

Prevalence of POF among females is higher and observed in the third and fourth decades of life, especially in the anterior upper gingiva, similar findings were observed in the present case[7].

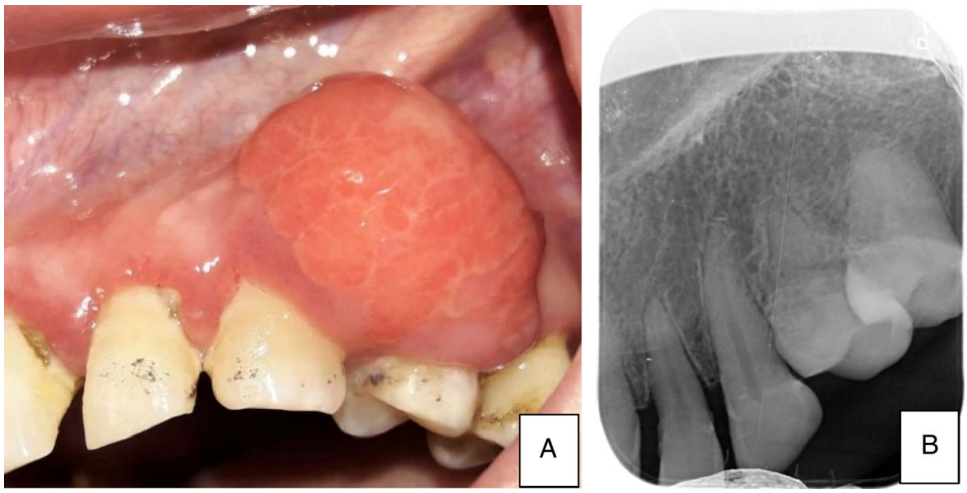

Figure 1. A: Preoperative view showed Gingival growth measuring about 2 cm – 1.5 cm in size. B: Intraoral periapical radiograph showing initial interdental alveolar bone loss between 23 and 24.

Figure 2. Lesion appeared as reddish growth which reduced in size.

Figure 4. Complete healing of residual mucogingival defect 12 months postoperatively.

Usually, POF presents as a slow-growing small nodular lesion, not exceeding 2 cm, asymptomatic, well-delimited, and with a pedunculated or sessile base[1]. However, in the present case, it was a growth of 2 cm × 1.5 cm.

The rationale of the present sequence of therapy is not only to diagnose and treat existing gingival reactive lesion but also to do simultaneous correction of anticipated residual mucogingival defect by LDF.

It is always challenging for the clinician to treat reactive gingival lesions because residual defect might induce large residual soft tissue defect, which may provoke postoperative discomfort, unesthetic appearance of gingiva, sensitivity, and difficulty in maintaining oral hygiene[4,8].

In our case, we planned an immediate reconstruction of the anticipated residual defect. The lesion was then excised extensively down to the bone, including the involved underlying periosteum and periodontal ligament, followed by removal of local irritating factors[8].

Various surgical techniques have been described in the literature for the management of mucogingival defects, including a subepithelial connective tissue graft (SCTG), coronally advanced flap (CAF), LDF, free gingival graft, and platelet-rich fibrin, etc., alone or in combinations[9].

SCTG has excellent predictability for correcting gingival recession with perfect color blend to adjacent tissues. But, SCTG needs secondary donor site and is technique sensitive too[10]. That is why, SCTG was not opted.

Although, CAF used alone or in combination with platelet-rich fibrin or other materials provides excellent outcomes for the management of such defect[10], but CAF also have certain limitations that it cannot be performed in area with limited or no keratinized gingiva apical to recession defect as observed in the present case.

So, LDF can be alternative to CAF to obtained predictable root coverage[11]. In the present case report, the prime requisite for LDF is a wide band of keratinized gingiva with thick gingival biotype at immediate adjacent site to recession. This flap enables excellent blood supply from the pedicle and yields an excellent color blend with adjacent tissue without eliciting dehiscence or fenestration at donor site[10].

The beneficial effects of LDF in management of single or multiple gingival recessions have been reported with high rate ranging from 74 to 96%, which is comparable to the root coverage rate of CAF or CAF + SCTG as cited in report of Cairo *et al.*[10].

The most common complication is a slight recession at the donor site. This is most likely to occur if the periodontium is thin (thin biotype), with thin gingiva and thin underlying alveolar bone. Another complication is necrosis or loosening of the flap. This happens if the flap is too thin, in a partial thickness flap, because of faulty technique or inadequate anatomy. The flap will loosen if the dissection was insufficient, and the flap was sutured with tension.

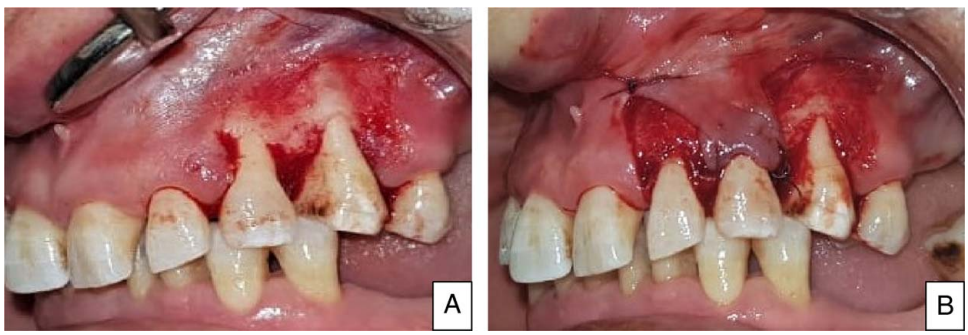

Figure 3. A: Excision of lesion from the base. B: Laterally displaced flap after suturing.

In this case report, complete residual gingival defect coverage was achieved without any complication. The flap was well adapted with an adequate color match and gingival contour.

The literature reports recurrence rates to range from 8 to 20%[6]. The patient was followed up for 12 months post-operatively, but no reoccurrence of lesion was observed.

The patient was satisfied with the result esthetically as well as functionally.

Conclusion

In conclusion, POF is a slowly progressive lesion generally with limited growth. The diagnosis of PCOF based only on clinical features is very difficult, radiographs and histopathological examination are essential for accurate diagnosis. The initial treatment is based on the elimination of the inflammation, while the surgical treatment insists on the exeresis of the gingival mass. However, in the absence of keratinized gingiva, the esthetic result is often compromised, hence the need for mucogingival management using periodontal plastic surgery.

LDF was a promising surgical technique for repairing the unesthetic appearance of gingiva and functional difficulties that might be associated with residual mucogingival defect, following thorough surgical excision of POF.

Ethical approval

It was not required because that it was just a clinical case treated in the periodontology department. Therefore, we did not need ethical statement.

Consent

The patient was informed about the use the clinical data and figures by the health care team for scientific purposes.

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Author contribution

E.A.H.: conceptualization, data curation, formal analysis, visualization, writing – original draft, and writing – review and editing; A.S.: supervision; S.Z.: conceptualization; C.A.: supervision, validation, and visualization.

Conflicts of interest disclosure

There are no conflicts of interest.

Research registration unique identifying number (UIN)

Not applicable because this is not a study but a case report.

Guarantor

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Data availability statement

Not applicable.

Provenance and peer review

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References

[1] Baněčková M, Agaimy A. SATB2 is frequently expressed in ossifying and non-ossifying peripheral oral fibroma of the gingival region but not in reactive fibromatous lesions from other intraoral sites. Ann Diagn Pathol 2020;46:151510.

[2] Mergoni G, Meleti M, Magnolo S, *et al*. Peripheral ossifying fibroma: a clinicopathologic study of 27 cases and review of the literature with emphasis on histomorphologic features. J Indian Soc Periodontol 2015; 19:83–7.

[3] Maymone MBC, Greer RO, Burdine LK, *et al*. Benign oral mucosal lesions: clinical and pathological findings. J Am Acad Dermatol 2019;81: 43–56.

[4] Salaria SK, Gupta N, Bhatia V, *et al*. Management of residual mucogingival defect resulting from the excision of recurrent peripheral ossifying fibroma by periodontal plastic surgical procedure. Contemp Clin Dent 2015;6(Suppl 1):S274–7.

[5] Agha RA, Franchi T, Sohrabi C, *et al*for the SCARE Group. The SCARE 2020 guideline: updating consensus Surgical CAse REport (SCARE) guidelines. Int J Surg 2020;84:226–30.

[6] Lázare H, Peteiro A, Pérez Sayáns M, *et al*. Clinicopathological features of peripheral ossifying fibroma in a series of 41 patients. Br J Oral Maxillofac Surg 2019;57:1081–5.

[7] Cavalcante IL, Barros CC, Cruz VM, *et al*. Peripheral ossifying fibroma: a 20-year retrospective study with focus on clinical and morphological features. Med Oral Patol Oral Cir Bucal 2022;27:e460–7.

[8] Shahrabi-Farahani S, Pencarinha DM, Anderson M. SATB2 Immunoexpression in peripheral ossifying fibroma and peripheral odontogenic fibroma. Head Neck Pathol 2022;16:339–43.

[9] Henriques PSG, Okajima LS, Nunes MP, *et al*. Coverage root after removing peripheral ossifying fibroma: 5-year follow-up case report. Case Rep Dent 2016;2016:6874235.

[10] Cairo F, Nieri M, Pagliaro U. Efficacy of periodontal plastic surgery procedures in the treatment of localized facial gingival recessions. A systematic review. J Clin Periodontol 2014;41(Suppl 15):S44–62.

[11] Zucchelli G, Cesari C, Amore C, *et al*. Laterally moved, coronally advanced flap: a modified surgical approach for isolated recession-type defects. J Periodontol 2004;75:1734–41.