Recurrent oral granuloma gravidarum during two pregnancies of a patient with orthodontic treatment: A case report

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ABSTRACT

The aim of this article was to present the medical management and follow-up of a recurrent oral granuloma gravidarum (OGG). OGG is a common benign tumour that can occur during pregnancy in response to poor oral hygiene and hormonal factors. Its identification and management by primary health care professionals is necessary, including an orientation to a dentist, if needed. Indeed, this lesion may induce troubles such as gingival bleeding, oral hygiene difficulties, and sometimes pain or eating difficulties, but also presents a high risk of relapse. An early twenties woman consulted several times during two pregnancies for an OGG presented in the same proximal maxillary gingival area. The patient reported dental hygiene difficulties because of orthodontic treatment and developed this recurrent tumour four times in two years, despite surgical excisions. Oral hygiene, and information continuously provided by healthcare professionals are required to prevent gingival inflammation and recurrence of OGG. This tumour usually regresses spontaneously post-partum, except in the presence of aggravating factors such as orthodontics treatment and mouth breathing. Surgery of OGG is required when it interferes with normal oral functions.

KEYWORDS: Oral granuloma, orthodontics, periodontology, pregnancy, recurrence

Introduction

Benign and mostly resolving spontaneously in post-partum¹,² oral granuloma gravidarum (OGG) is a recurrent chief complaint to a family physician, a midwife, or a gynaecologist from the future parturient woman. Among the 11.6% of women presenting oral mucosa disorders during their pregnancy, 3% develop OGG.³ This benign red to reddish-purple tumour can grow rapidly and bleed easily. It is a smooth or exophytic, sessile or pedunculated, usually solitary but sometimes multiple, and its surface is frequently ulcerated.¹⁴ Its most common site is the gingiva (more frequently in the upper maxilla), followed by lips, tongue, buccal, and palate mucosa. Patients mainly complain of bleeding and painless swelling.¹⁸ Primary health care professionals have an important position in diet and lifestyle advice during pregnancy and in referring to a dentist in some clinical situation. The aim of this article is to trace the case of a patient who developed a recurrent tumour four times during two pregnancies, despite several surgical excisions.

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Case History

A six-month pregnant woman in her early twenties consulted the dental emergency department with gingival overgrowth, which appeared during the second trimester of pregnancy, associated with pain, eating difficulties, and bleeding during tooth-brushing and chewing for three weeks (history and dental treatments of OGG are summarised in Figure 1). A biological analysis only revealed chronic microcytic hypochromic anaemia. Her orthodontic multiband appliance made dental hygiene difficult. Intra-oral examination showed general gingivitis due to high dental plaque level, worsened by mouth breathing and by steroidal sexual hormones, modified during pregnancy.[7] Between the first and second molar of the right maxillary appeared a pedunculated non-tender lobulated gingival overgrowth. This gingival overgrowth was large (1.5 × 1 × 0.4 cm) and bleeding on touch, which made chewing difficult because of the trauma induced by the opposite teeth [Figure 2]. Based on these clinical findings, the gingival overgrowth was diagnosed as OGG. Oral hygiene education and complete surgical excision were performed [Figure 3]. A prescription of paracetamol and chlorhexidine 0.2% mouthwash was given with post-operative instructions. Histopathological analysis confirmed OGG diagnosis [Figure 4].

At one-week post-surgery, recurrence of the OGG was observed, needing a second surgery. After seven days, the patient presented a reduction of gingival inflammation [Figure 5].

A year and a half later, the patient, in the fifth month of her second pregnancy consulted for the same reason with similar symptoms as previously described [Figure 6]. The patient received further dental hygiene instruction and a third surgical excision.

One month later, the patient presented a smaller and slightly less painful gingival overgrowth. The control of both OGG evolution and improvement of dental hygiene was performed, and dental scaling was carried out. This overgrowth did not regress spontaneously after childbirth. A fourth surgery was performed four months after delivery when the orthodontic treatment was over. No recurrence was observed at one-month follow-up [Figure 7].

Discussion

Case reports and case series of OGGs are published regularly, but to our knowledge, a case with several recurrences during two successive pregnancies associated with orthodontics treatment has never been reported.

OGG is a hyper-reactive inflammatory lesion that occurs during pregnancy whose etiopathogenesis remains unclear.[13] OGG needs particular care not only by a dentist but also by every health care professional intervening during the pregnant women's care pathway. The differential diagnosis of OGG includes peripheral giant cell granuloma, peripheral ossifying fibroma, fibroma, peripheral odontogenic fibroma, hemangioma, conventional granulation tissue, hyperplastic gingival inflammation, angiosarcoma, Kaposis sarcoma, and non-Hodgkin's lymphoma.[14] Steroid hormones produced during pregnancy play a pivotal role in the proliferation of this vascular lesion,[15] and in most cases, OGG regresses spontaneously post-partum. Oestrogens and progesterone have a dual impact, increasing the expression of angiogenic factors in inflamed tissue and decreasing the apoptosis of granuloma cells to extend the angiogenic effect.[16] The impact of these molecular factors is increased by bacterial build-up. Indeed, dental plaque induces gingival inflammation that contributes to OGG onset and development.[9] Additional risk factors such as trauma, chronic local irritation, and drugs may enhance gingival overgrowth.[10] In this case report, the patient presented poor oral hygiene, as found in many pregnant women,[17] and orthodontic treatment, that are both known to favour gingival overgrowth. Moreover, mouth breathing has also been reported to play a role in gingival inflammation and the healing of buccal lesions.[18] Failure to comply with the hygiene instructions is a real problem, particularly during orthodontic treatment,[13,14] and may cause OGG recurrence after surgical excision.[15] The recurrence of OGG rises between 15 and 22% of removed lesions.[16,17] The objective of the treatment is to remove the causal factors: Plaque, calculus, foreign bodies, and source of trauma. If the lesion is large and symptomatic, surgical excision is indicated. If the lesion is small, painless, and free of bleeding, clinical observation and follow-up are sufficient.[18] While lesions can persist after childbirth, spontaneous regression in post-partum is usually expected.[18,19]

OGG is a common benign tumour that can occur during pregnancy. Its development is caused by hormonal modification
and favoured by poor oral hygiene. Orthodontic treatment leads to oral hygiene difficulties and can increase the risk of OGG. In this context, the surgical excision of the OGG may not be enough and lead to recurrences.

OGG may be associated with eating difficulties, bleeding, bone loss, and sometimes pain, hence the need for detection and referral to a dentist, thus avoiding self-medication of painkillers. Surgical excision of OGG is required when it interferes with normal oral function, mastication, and elocution.
Regular dental appointments to check oral hygiene and the use of a soft brush and interdental cleaning devices are required to prevent gingival inflammation and recurrence of OGG. OGG usually regresses spontaneously post-partum but may persist for some months after childbirth.

**Key points**
- Oral hygiene and regular medical and dental appointments are important to prevent OGG.
- OGG mostly regresses spontaneously after childbirth.
- Surgery excision is sometimes necessary when OGG interferes with oral functions.
- Multiple recurrences can occur in the same spot during several successive pregnancies.

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**Conflicts of interest**
There are no conflicts of interest.

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