

Case Report

Periodontics

Electrocautery-Assisted Excision of Giant Cell Fibroma in a Pediatric Patient: A Case Report

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DOI: <https://doi.org/10.36348/sjodr.2026.v11i10.002>

| Received: 12.08.2026 | Accepted: 03.10.2026 | Published: 07.10.2026

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Abstract

Background: Giant cell fibroma is a relatively uncommon benign fibrous lesion of the oral cavity, frequently seen in the 2nd and 3rd decades of life. It is often asymptomatic but may require removal for functional or esthetic reasons. **Case Presentation:** A 5-year-old female patient presented with a localized gingival growth in the Lower Anterior region for 2 Months. Clinical and radiographic evaluation followed by biopsy confirmed the diagnosis of giant cell fibroma. The lesion was excised using electrocautery under local anesthesia. **Management and Outcome:** The procedure was uneventful with minimal bleeding. Histopathological examination confirmed the diagnosis. Postoperative healing was satisfactory with no recurrence at 7-day and 3 Month follow-up. **Conclusion:** Electrocautery is an effective and minimally invasive modality for excision of giant cell fibroma in pediatric patients, offering advantages such as reduced bleeding and better patient compliance.

Keywords: Giant cell fibroma, pediatric dentistry, electrocautery, gingival lesion, oral pathology.

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INTRODUCTION

Several fibrous soft tissue lesions commonly occur in the oral cavity and are mostly reactive or reparative in nature rather than neoplastic. One such lesion is giant cell fibroma, first described by Weathers and Callihan in 1974 [1]. Giant cell fibroma (GCF), which can be either a sessile or pedunculated benign oral mucosal lesion, is frequently observed in individuals in their first 30 years, with a trivial female predilection, and is rarely seen in children [2]. These lesions represent about 1% of all oral biopsies and constitute nearly 5% of all fibrous lesions involving the oral mucosa [3]. Common sites of occurrence of giant cell fibromas are the gingiva, followed by the tongue and buccal mucosa. Mandibular gingiva is more commonly affected than the maxillary gingiva. The unique histological feature of giant cell fibroma is the presence of large spindle-shaped or stellate mononuclear or multinucleated fibroblasts

within the fibrous connective tissue stroma [4]. Treatment of fibroma involves surgical excision using a scalpel, electrocautery, and laser. Recurrence is rare. This article presents the diagnosis and management of a giant cell Fibroma in a 5-year-old female child. The lesion was successfully treated using electrocautery, followed by uneventful healing during the subsequent weeks of follow-up. No evidence of recurrence was observed throughout the follow-up period.

CASE PRESENTATION

A 5-year-old female patient presented to the department with a chief complaint of a gingival growth in the mandibular anterior region for the past 2 months. The growth was associated with increasing difficulty during mastication. According to the patient's parents, the lesion initially appeared as a small, painless growth and gradually increased in size to reach approximately 2.5 × 3 cm at the time of presentation.

Citation: Arbaaz, B. R., Prakash, N., Karunanithi, A., Harini, G., Peter, S., & Aurthi. (2026). Electrocautery-Assisted Excision of Giant Cell Fibroma in a Pediatric Patient: A Case Report. *Saudi J Oral Dent Res*, 11(10), 363-367. <https://doi.org/10.36348/sjodr.2026.v11i10.002>

On intraoral examination, a solitary, pedunculated gingival growth was observed involving the labial and lingual aspects of the gingiva between teeth 72 and 73 [Figure 1(a, b)]. The lesion was well-defined and firm in consistency, with no tenderness or spontaneous bleeding on palpation. The surrounding gingival tissues appeared clinically unremarkable.

An intraoral periapical radiograph (RVG) of the mandibular anterior region revealed no evidence of underlying alveolar bone involvement or pathological changes in the adjacent structures [Figure 2]. Routine blood investigations were performed.

Based on the clinical characteristics and radiographic findings, a provisional diagnosis of fibrous hyperplasia/fibroma was considered. Following informed consent from their Parents, an excisional biopsy was planned under local anaesthesia. The lesion was completely excised using electrocautery, which facilitated removal of the lesion with effective haemostasis and minimal intraoperative bleeding [Figure 3]. The excised tissue was immediately preserved and submitted for histopathological examination.

Histopathological examination revealed orthokeratinized stratified squamous epithelium overlying a fibrocellular connective tissue stroma, with thin and elongated rete ridges. The underlying connective tissue consisted predominantly of dense, haphazardly arranged collagen fibres along with numerous uninucleated, stellate-shaped giant fibroblasts. A few endothelial-lined blood vessels and a mild inflammatory cell infiltrate, predominantly composed of lymphocytes, were also observed. These characteristic histopathological findings confirmed the diagnosis of Giant Cell Fibroma (GCF) [Figure 4].

The postoperative period was uneventful, with satisfactory healing of the surgical site. The patient was recalled for follow-up after one week and at three months postoperatively. Clinical examination revealed good soft-tissue healing with no evidence of recurrence or postoperative complications, as illustrated in Figures 5 and 6.

DISCUSSION

The GCF is an uncommon Pathological entity in young children, being more prevalent in Teenagers

and young Adults (2nd and 3rd Decade of Life) [5,6]. Giant cell fibroma accounts for about 1% of oral biopsies and 5% of all oral mucosal fibrous lesions. The lesions are usually <1 cm in diameter and the more common sites include the mandibular gingiva, followed in descending order by the maxillary gingiva, tongue, palate, buccal mucosa, lips and floor of the mouth [5, 7].

Giant cell fibromas are mostly asymptomatic and appear as sessile or pedunculated masses that are typically of normal mucosal color unless traumatized during mastication or oral hygiene procedures [8]. The treatment of choice for the lesion is surgical excision [9]. Incomplete removal of the lesion can lead to recurrence. Several modalities have been proposed for the treatment of Giant Cell Fibroma, comprising surgical excision, electrocautery and Laser depending upon the clinical and anatomic considerations. Lasers such as CO₂, neodymium-doped yttrium aluminium garnet (Nd: YAG), erbium-doped YAG (Er: YAG) and Diode lasers have been successfully employed in the treatment of several intra-oral soft tissue lesions including fibroma, papilloma, pyogenic granuloma, gingival hyperplasia, etc [10, 11]. In the present case report, the lesion was excised by electrosurgery. Notable advantages of electrosurgery over the surgical scalpel include rapid dissection, precise tissue cutting with the self-disinfecting tip without the use of manual pressure, immediate and consistent hemostasis that does not obscure the operative field, reduced overall operative blood loss, and scar-free wound healing [12, 13].

When compared to dental lasers, electrosurgery provides a number of advantages. It provides excellent cutting performance and is much cheaper than laser therapy. Furthermore, the electrode can cut on its side as well as the tip and can be angulated, thereby enabling easy contouring of the tissue, especially in areas difficult of access. All of the above considerations made us choose electrosurgery as the preferred mode of treatment over the scalpel and laser [12].

Like all other devices, electrocautery has many disadvantages, including the necessity of preoperative anesthesia, the inevitable burning smell, poor tactile sensitivity, and increased thermal damage to surrounding tissues (including bone). Patients with pacemakers or implants cannot use electrosurgery [14]. Complete excision of the mass was achieved, and no recurrence was noted on review at 7 days and 3 Months.



Figure 1: Preoperative Image A)Labial View B)Occlusal View



Figure 2: (RVG) of the mandibular anterior region



Figure 3: Immediate Postoperative After Excision

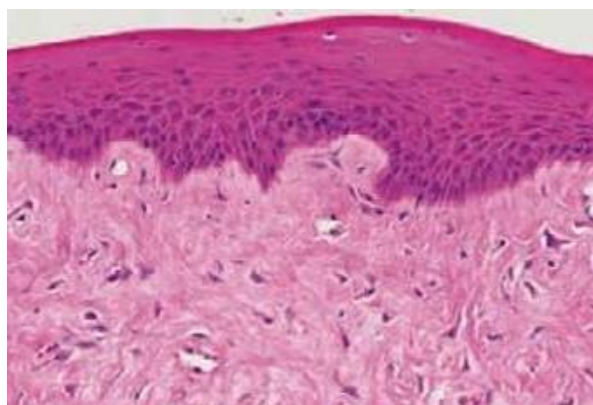


Figure 4: Histopathologic Magnification under medium power (original magnification, 25×)



Figure 5: Review After 7 Days



Figure 6: 3-month postoperative follow-up

CONCLUSION

Giant Cell Fibroma is a rare benign fibrous lesion of the oral cavity that may clinically resemble other reactive and fibrous lesions, particularly conventional fibroma and fibroepithelial polyp. Although its clinical presentation may be nonspecific, the characteristic histopathological features are essential for establishing a definitive diagnosis. In the present case, accurate clinical and histopathological evaluation facilitated appropriate diagnosis and successful management using electrocautery. The patient demonstrated satisfactory postoperative healing without complications or evidence of recurrence during follow-up. This case highlights the importance of considering Giant Cell Fibroma in the differential diagnosis of gingival growths in pediatric patients and emphasizes the role of thorough clinical examination, histopathological assessment, and appropriate surgical management in achieving favorable outcomes.

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