

A Case of Laser Assisted Surgery for a Large Gingival Fibroma

DEEPIKA AJIT MASURKAR¹, PRIYANKA JAISWAL², BHAIRAVI KALE³, AISHWARYA RATHOD⁴**Keywords:** Biolase, Cautery, Periodontal pack

A 22-year-old female patient reported to the Department of Periodontics with a chief complaint of swollen gums in the lower front jaw region since six months, not associated with pain. Patient was apparently alright six months back, then she noticed a small growth in the mandibular anterior region of jaw. Patient gave a history of trauma six months back, at the same region due to fall on stairs. The condition was causing difficulty in mastication and poor aesthetics. The growth was sluggish at first, then progressed slowly until it reached its current size of 15×10 mm intraorally, with no extraoral swelling. In regard to tooth numbers 31, 32, 33 and the growth was pink in colour, firm, clearly defined, mobile, pedunculated, non pulsating, and smooth surfaced [Table/Fig-1,2]. The swelling was not associated with tenderness. Generalised bleeding on probing was present.

**[Table/Fig-1]:** Preoperative view.**[Table/Fig-2]:** Size of the lesion 15×10 mm. (Images from left to right)

Based on history and clinical features the growth was provisionally diagnosed as generalised chronic gingivitis with gingival fibroma. Differential diagnosis were gingival epulis, Pyogenic Granuloma (PG), peripheral ossifying fibroma, traumatic fibroma, peripheral giant cell granuloma, haemangioma and metastatic cancer.

The patient was informed about the growth and the treatment options were explained such as such as excision of overgrowth using scalpel, cautery and lasers. Prior to treatment, informed consent was obtained from the patient. The results of blood tests such as haemoglobin (12.8 gm%), bleeding time (1 minute and 30 seconds) and clotting time (2 minutes) were all within acceptable and physiological limits.

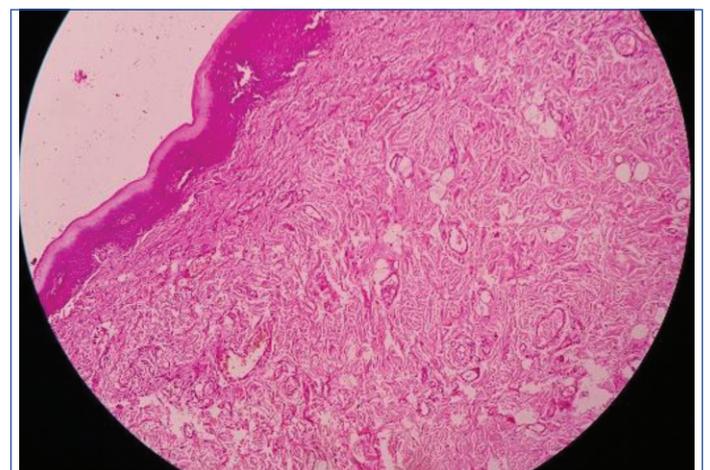
Under local anaesthesia (Lignox 2% with Adrenaline- 1:80000), the overgrowth was slightly elevated with the help of floss to determine the base or attachment of the overgrowth on gingiva [Table/Fig-3]. The growth was entirely excised from its base using a soft tissue 920 nm diode laser (BIOLASE) in pulse mode with protective armamentarium. During surgery, the fiber's tip came into contact with the borders of the lesion [Table/Fig-4,5]. Proper scalloping of the gingival margins was done [Table/Fig-6]. There was no suturing

**[Table/Fig-3]:** Thread tied at base of growth. **[Table/Fig-4]:** Tip of diode laser applied to base of the growth. (Images from left to right)**[Table/Fig-5]:** Immediate postoperative view.**[Table/Fig-6]:** After complete excision of growth. (Images from left to right)

done. Periodontal pack was applied [Table/Fig-7]. Brufen 400 mg was prescribed from the day of operation three times a day for three days as a postoperative medicine. The patient was given instructions that included, caring for the surgery site, eating soft diet for one day and maintaining good dental hygiene including brushing at non surgical site twice daily and use of chlorhexidine mouthwash twice daily [Table/Fig-8]. Following the surgery, the patient experienced no pain or discomfort. There was no sign of the lesion at recall visit.

**[Table/Fig-7]:** Postoperative periodontal pack applied.**[Table/Fig-8]:** Postoperative view after 60 days. (Images from left to right)

The tissue was sent for histological examination after the complete surgical removal of the lesion. Haematoxyllin and Eosin (H&E) stained tissue section showed lesional connective tissue stroma. It comprised of densely packed parallelly arranged collagen fibres. At places, these collagen fibers are haphazardly arranged. The fibroblasts showed spindle shaped elongated nuclei. Severe chronic inflammatory cell infiltration was seen, suggestive of fibroma [Table/Fig-9].

**[Table/Fig-9]:** Histopathological view (H&E,10X).

Fibroma is the most frequent benign development in the mouth cavity [1]. Traumatic fibroma is a frequent, benign and slow growing, soft tissue tumour [2]. This mass is normally asymptomatic and increases in size over time [3]. These lesions can be caused by irritants such as plaque, calculus, overhanging edges, and restorations. Fibroma can develop as a result of an injury or local inflammation caused by fibrous hyperplasia [4].

A histologic examination of the lesion, can help rule out other benign and malignant fibroma-like tumours. Irritation fibromas, according to Arya S et al., and, Barker DS and Lucas RB, expressed two patterns of collagen arrangements, namely (a) radiating pattern and (b) circular pattern, depending on the site and level of irritation experienced by the lesion [2,3]. As a result, the authors concluded that static areas with greater stress, such as the palate, produced radiating patterns, but flexible areas (such as the buccal mucosa) with less trauma caused circular patterns [3]. According to Gupta D et al., true fibromas did not show this pattern [4].

Surgical excision is commonly used to treat fibroma, and recurrence is unlikely unless the source of irritation/trauma is entirely eradicated. Women account for 66% of all bothersome fibromas. It is unusual

in the first 10 years of life. It is possible that the lesion is sessile or has a pedunculated base and it normally grows slowly over several months to reach its maximum size. The highest size is rarely more than 1.5 cm [5]. The lesion in the present case, however, was significantly greater in comparison. In the absence of malignant change, it is usually self-limiting. On the other hand, long term surveillance is essential to detect transformation and recurrence of such lesions [5]. The laser employed in the present case was extremely effective, safe, and straight-forward to operate, resulting in a predictable outcome with little difficulties.

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PARTICULARS OF CONTRIBUTORS:

1. Postgraduate Student, Department of Periodontology, Datta Meghe Institute of Medical Sciences, Wardha, Maharashtra, India.
2. Professor, Department of Periodontology, Datta Meghe Institute of Medical Sciences, Wardha, Maharashtra, India.
3. Assistant Professor, Department of Periodontology, Datta Meghe Institute of Medical Sciences, Wardha, Maharashtra, India.
4. Postgraduate Student, Department of Periodontology, Datta Meghe Institute of Medical Sciences, Wardha, Maharashtra, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Deepika Ajit Masurkar,
Postgraduate Student, Department of Periodontology, Datta Meghe Institute of
Medical Sciences, Wardha, Maharashtra, India.
E-mail: dipika.masurkar@gmail.com

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