

**Case Report**

# Management of Oral Telangiectatic Granuloma with 810 nm Diode Laser in a Medically Compromised Patient: A Case Report

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## Abstract

Telangiectatic granuloma is a commonly occurring benign hyperplastic growth in the oral cavity. The causative factors can be trauma or local irritation. Many other terms for pyogenic granuloma, such as granuloma gravidarum/pregnancy tumour (in females), Crocker and Hartzell's disease, vascular epulis, benign vascular tumour, hemangiomatosis granuloma, epulis telangiectatic granulomatosa, and lobular capillary haemangioma, have been coined in the past. OTG (Oral Telangiectatic Granuloma) is mostly seen with a female predilection in the upper anterior gingiva.

The Diode laser with wavelengths from 810 nm to 980 nm in a continuous/pulsed mode can be used with great efficiency in periodontal surgery. It can be used for various purposes such as excision of growths, frenectomy, crown lengthening procedures etc. The advantages of diode laser are that it provides a relatively bloodless field and post-surgical healing follows with minimal scarring and swelling.

Low level laser therapy is based on a principle of supplying direct biostimulative light energy to the cells of the body. Cellular photoreceptors such as cytochromophores can absorb low level laser light and pass it on to the power house of the cells i.e. mitochondria which promptly turn this to ATP. The most widely recommended use of LLLT is wound healing.

**Keywords:** Telangiectatic granuloma; Vascular epulis; Benign vascular tumour

## Case Presentation

A 65 year old patient, who had undergone angioplasty 10 years ago and is on Ecosprin 75 mg, presented to the department of Periodontology and Oral Implantology with the chief complaint of swelling in the lower left region since over a year. The swelling started much smaller in size but had grown to reach the present size which was causing difficulty in mastication. Patient was unable to maintain his oral hygiene. There was no dental history associated with the lesion (Figure 1) [1-5].

The growth was initially not interfering with occlusion, but since the past few months, the occluding teeth had started impinging on the swelling (Figure 2).

Intra-oral examination showed a partially movable, reddish-pink enlargement/growth which was attached to the underlying gingiva to a firm stalk. The dimensions of the swelling were 1.5 cm (height) × 1 cm (breadth) and 1 cm (Bucco-lingually) extending from the lower left lateral to the canine. There was presence of bleeding on probing but no purulent discharge was noticed in the region of the swelling.

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Figure 1: Clinical picture before treatment (Frontal view).



Figure 2: Occlusal view of the lesion.

A provisional diagnosis of pyogenic granuloma was given based on the clinical findings.

The initial line of treatment constituted of Phase I prophylactic therapy including ultrasonic scaling and root planing followed by a 2 weeks of maintenance with proper brushing techniques and oral mouth rinse of 0.12% Chlorhexidine twice daily till the next follow up. Routine

hemogram was advised prior to the surgical removal and a written informed consent was taken from the patient. Patient was asked to discontinue anti-platelet drug five days prior to the surgical procedure with fitness certificate duly signed by the physician (Figures 3-5).



**Figure 3:** Immediately post prophylaxis (Frontal view).



**Figure 4:** Immediately post-prophylaxis (occlusal view).



**Figure 5:** Application of 810nm Diode laser for excision.

In the following surgical phase, local anaesthesia (2% lignocaine with 1:80,000 adrenaline) was infiltrated in the adjacent tissues. Adrenaline was used for its vasoconstrictive property aiding in haemostasis for highly vascular lesions. The 810 nm Diode laser was used to surgically excise the entire lesion from the peduncle. The settings of the laser were 2 W with CW and 400 nm fibre tip was used. After excision, Low Level Laser Therapy (LLLT) was performed by 810 nm Diode laser at 0.5 W in focussed mode in a circular motion. The application time was 3 min. This LLLT aids in healing of the region by accelerating neovascularization and reduction in pain.

Complete laser safety was maintained throughout the procedure and aseptic surgical protocol was followed. The excised tissue was sent for histopathological analysis (Figures 6 and 7).

Histopathological sections revealed presence of para-keratinized stratified squamous epithelium which was hyperplastic in nature evidenced by long, slender and branching rete pegs. There was evidence of ulceration and the surface was covered by a fibro purulent

membrane. The underlying connective tissue was highly cellular comprising of numerous budding endothelial cells. Numerous blood vessels of various shapes and sizes each lined by plump endothelial cells. Dense mixed inflammatory cell infiltrate chiefly comprising of lymphocytes, plasma cells and neutrophils were noted. Collagen fibre bundles were noted in the connective tissue.



**Figure 6:** Immediately post excision.



**Figure 7:** Excised tissue.

All these findings were suggestive of telangiectatic granuloma (Figures 8 and 9).

Follow up was performed one week, 15 days and 1 month post-surgery. Oral hygiene was reinforced at each visit as patient was not able to maintain his oral hygiene.

Over all findings after the histopathological examination suggested Oral Telangiectatic Granuloma (OTG)

## Discussion

Telangiectatic granuloma is a localized tumour like growth which is reactive in nature caused by local irritational factors such as plaque or calculus. It is found mainly on the gingiva, alveolar mucosa and lips. It can manifest as a painless, sessile or pedunculated lesion.

Telangiectatic granuloma can be surgically excised with the scalpel, but that could lead to excess of bleeding as it is a highly vascular lesion



**Figure 8:** Tissue kept in formalin immediately after removal.



Figure 9: level laser therapy in progress.



Figure 10: Histopathological section.



Figure 11: 15 days post-surgery.



Figure 12: 1 month recall.

and in this case, as the patient was medically compromised, lasers was the best treatment solution. A study done by on a pregnant woman in her third trimester shows that it is one of the safest treatment modality. Therefore lasers are a preferred choice of treatment. Other protocols include the use of flash lamp dye laser, cryosurgery, injection of ethanol, sodium tetradecyl sulphate sclerotherapy and intralesional corticosteroid injections immunohistochemical features. CO<sub>2</sub> lasers also can be used for the excision of such tumour like growths. A case report by Sigtia et al. [6] shows that the 10,600 nm laser can efficiently excise the pyogenic granuloma with little or no bleeding. Lasers offer

advantages of providing an aseptic field, good haemostasis (preferred for such a case where the patient is on anti-coagulants), good tissue management with less time involved for the procedure, reduced postoperative pain, swelling and bacteraemia.

LLLT also has the added effect on the microcirculation that reduces the oedema by changing the hydrostatic pressure within the microvasculature. Optimum dose of LLLT leads to the formation of new endothelium and angiogenesis that will help in formation of granulation tissue and accelerated healing (Figures 9-12) [7].

## Conclusion

The 810 nm diode laser is a good tool that can be used for the excision of telangiectatic granuloma specially in cases where the patient is medically compromised such as in this case and a relatively bloodless field is required. Low level laser therapy is used to accelerate the wound healing process. Though there are many advantages of the Diode laser, the expensive equipment makes it impossible to be present in all circumstances.

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