

# Treatment of Telangiectatic Granuloma by Electrocautery and Its Review

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**Abstract:** *The telangiectatic granuloma also known as pyogenic granuloma which develops as a pediculated or solitary tumor-like growth that bleeds easily. It's a non-neoplastic lesion which is known by various names depending on its etiopathogenesis. Removal of the etiological factor, followed by surgical excision is the preferred treatment for Telangiectatic granuloma. But relapses can occur. For this reason, treatment with other techniques such as cryotherapy, electrocautery and laser has been investigated. The present article describes treatment of telangiectatic granuloma by removal of the etiological factor the mobile tooth with local factors by surgical excision of the lesion using electrocautery.*

**Keywords:** Pyogenic granuloma, Telangiectatic granuloma, Drug induced gingival overgrowth, electrocautery, excisional biopsy, Gingival hyperplasia.

## 1. Introduction

Telangiectatic granuloma is popularly also referred to as pyogenic granuloma, it's a benign, hyperplastic, inflammatory, fast growing lesion of the soft tissues that easily bleeds<sup>1</sup>, on provocation and may be dermatological or oral origin affecting the skin, oral mucosa, gingiva, lips, tongue. It is a common reactive neof ormation<sup>2</sup> that develops as a response to varied stimuli such as hormonal factors, local trauma and certain drugs or chronic irritation creating a repair tissue (granulation) produced by the body as a defense mechanism<sup>3</sup>.

Various names are given to this entity, till now are: benign pedunculated granuloma, botryomycosis hominis, benign vascular tumor botryomycoma, telangiectatic granuloma, vascular epulis, pseudobotryomycosis, fibroangioma, croker and Hartzell disease, septic granuloma, hemangiomas granuloma, lobular capillary hemangioma, Eruption capillary hemangioma, granuloma pyogenicum.<sup>3-5</sup>

The first case of pyogenic granuloma was reported by Hullihen in 1844. In 1903 Crocker was the one who named Pyogenic granuloma<sup>6</sup>. However, few researchers believe that in 1904 Hartzell introduced the term "pyogenic granuloma" that is widely used. Although, the name pyogenic granuloma is a misnomer since it's not related with pus formation and does not represent a granuloma histopathologically.

Angelopoulos AP suggested the term "hemangiomas granuloma" that expressed histopathologically like

hemangioma and the inflammatory nature (granuloma) of oral pyogenic granuloma.<sup>7</sup>

Cawson et al, due to presence of various blood vessels in oral pyogenic granuloma, suggested the term 'Granuloma Telangiectaticum'.<sup>8</sup>

This article reports a case of telangiectatic granuloma observed within the lower front region of jaw.

## 2. Case Report

A 50-year-old female patient presented to Department of Periodontology and Oral Implantology with a chief complaint of swelling in the lower front region of jaw for the past 4-5 months. Initially the swelling appeared as a round, small growth which gradually increased in size to the current size. The swelling was not related to pain and showed occasional spontaneous bleeding. There was no history of any similar lesions in the past. Patient reported with a positive medical history of hypertensive since 6 years and was on Tab Atenolol-50, Tab Ecosprin-AV-75/10 mg and Tab Atrvastatin 10mg.

On Intraoral examination (Fig:1) a tumor like growth, spherical-shaped, pedunculated, with an irregular border that bleed spontaneously on manipulation. The lesion was located in right para – midline region of the mandibular arch with an approximate size of 30 mm (length) × 23mm (width) in diameter. The lesion was smooth and soft in consistency, and blanched on pressure application. Grade III mobility noticed

with the associated teeth. The lesion was generally painless unless traumatized with tooth-brushing or mastication. The outer part of lesion appeared pinkish-red while inner part was reddish. Thus this features led to a clinical suspicion of vascular malformation.

For this reason, Color Doppler (carotid Doppler) and USG screening of the region was carried out which revealed well defined hypoechoic lesion measuring 31x23x15 mm surrounded with few mobile teeth, and no significant arterial or venous vascularization was seen.

Radiographic examination (Fig:2) showed bone loss and floating teeth appearance in lower front tooth region. Routine hematological investigations were performed. The patient was informed and a written consent was obtained. Patient was asked to obtain fitness certificate duly signed by the physician and to discontinue anti-platelet drug 5 days prior to the surgical procedure.

The surgical phase (Fig:3), 2% lignocaine hydrochloride local anaesthesia was infiltrated in the adjacent tissues excisional biopsy was executed using the electrocautery in cutting mode, and the residual wound was sutured. The excised specimen (Fig:4) was fixed in 10% formalin and was submitted to the department of oral pathology for histopathological analysis. Patient was recalled for assessment of healing at one week and six months was done to confirm uneventful healing and any recurrence. Further patient was referred for oral rehabilitation, together with replacement of drug for hypertension which can be one amongst the possible reasons for gingival enlargement.



Figure 3: Intra-operative view



Figure 4: Excised lesion

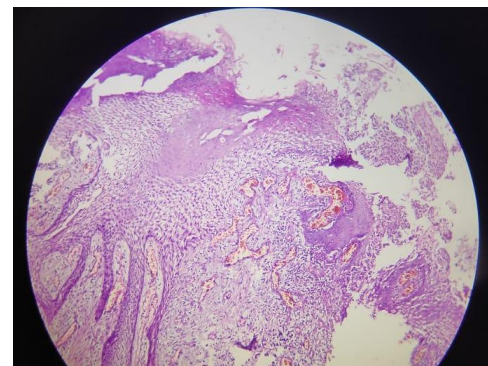


Figure 5: Histopathology images (10x) – telangiectatic granuloma



Figure 1: Clinical picture before treatment (frontal and occlusal view)



Figure 2: Orthopantomogram (OPG) showing presence of floating teeth and bone loss



Figure 6: Immediate post operative view

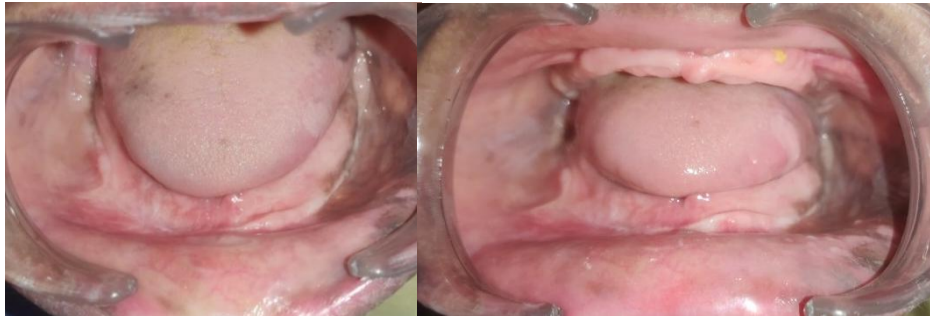


Figure 7: After 6 months

### Provisional Diagnosis

Based on the patients underlying medical history and clinical presentation of the lesion, the provisional diagnosis of Drug induced gingival overgrowth with local factors was made.

### Differential Diagnosis

The differential diagnosis was capillary hemangioma, fibroma, and peripheral giant cell granuloma.

### Histological Examination:

The histopathological sections (Fig 5) shows presence of epithelium and connective tissue only. The overlying epithelium revealed a hyperplastic, parakeratinized stratified squamous in nature along with ulcerated fibro purulent membrane. The underlying connective tissue composed of dense collagen fibers, intervened by plump fibroblasts and comprised of budding endothelial cells. Numerous dilated and engorged capillaries of a variable shapes and sizes, and diffuse chronic inflammatory cell infiltrate chiefly comprising of lymphocytes and plasma cells. Rest of the surrounding tissue appeared loose and hypocellular. Overall findings are suggestive of "Telangiectatic Granuloma".

### Final Diagnosis

Based on clinico-pathologic correlation, the lesion was diagnosed as Telangiectatic Granuloma.

## 3. Discussion

Usually clinically Telangiectatic granuloma are commonly characterized as a pedunculated or sessile growth with a smooth or lobulated surface. The lesion may vary from red to pink in colour depending upon the maturity of the lesion, and the surface may be ulcerated. The size of the lesion varies from a few millimeters to a larger size and occupies a big part of the oral cavity. The most common intra-oral site of occurrence is the gingiva, but lesions have been reported on palate, buccal mucosa, tongue, and lips. Extraorally, it occurs on the skin of neck, face, upper and lower extremities, and mucous membrane of nose and eyelids.<sup>9</sup>

The etiology of this disease is related to local irritants or to traumatic factors<sup>3</sup>. Females are affected more commonly during puberty, pregnancy, and menopause probably due to the vascular effects of the sex hormones such as estrogen, progesterone and testosterone<sup>10</sup>. Removal of the etiological

factor is the preferred treatment for Telangiectatic granuloma, followed by surgical excision, which can be performed using either a conventional scalpel technique, electrocautery, cryotherapy or various soft tissue lasers such as diode CO<sub>2</sub> laser, etc<sup>14</sup>.

Treatment of telangiectatic granuloma is usually full surgical excision with sub-periosteal curettage. However, the recurrence rate of lesions is up to 16% after surgical excision<sup>12</sup> and the relapse rates (3% – 8.2%)<sup>14</sup>.

To prevent recurrence other surgical treatment options such as Lasers and electrocautery are rapidly replacing the conventional treatment modalities. Lasers are been used due to their advantages of improved visualization, minimal or no bleeding, reduced patient discomfort and pain, and reduced healing time.<sup>12</sup>

Ghodkeet al<sup>3</sup> in 2019 treated a case of telangiectatic granuloma in a medically compromised patient by using 810nm diode laser for excisional biopsy of lesion and further Low level laser therapy was performed so as to aids in healing process by accelerating neovascularization and reduction in pain.

Similarly Dhande et al in 2021 conducted an excision of inflammatory fibrous hyperplastic lesion of the oral mucosa area using an 810 nm diode laser<sup>14</sup>.

Though there are many advantages of the diode laser, the expensive equipment set up and need of skilled operator makes it difficult to be used in all circumstances<sup>3</sup>.

Var H et al<sup>13</sup> in 2020 reported a case of recurrent pyogenic granuloma caused by intraosseous vessels where in magnetic resonance imaging (MRI) was used to identify the feeder vessel. Further the vessel was exposed and cauterized by electrocautery as a line of treatment.

Electrocautery is defined as the passage of high-frequency wave forms, or currents, through the tissues of the body to achieve a surgical effect. The coagulative effect of electrocautery ensures a bloodless area and clear view of the operative field.<sup>13</sup>

Electrocautery and Laser can create areas of char and necrosis of tissue, increasing the possibilities of infection, and damaging wound edge which can be lead to impaired healing.<sup>11,13</sup>

Study has shown that the lateral heat damage with the use of lasers in histological sections was found to be 28.3 - 98  $\mu$ m<sup>16</sup> and with the electrosurgery is 0.12-0.31 mm.<sup>15</sup>

As a result, this case report supports the electrocautery over conventional scalpel surgical treatment because of its advantages of being less invasive, with adequate hemostasis, fast, economic and satisfactory wound healing.

#### 4. Conclusion

Thus, in the present case, telangiectatic granuloma had been treated by electrocautery which showed a successful and complete healing with no reoccurrence with a six month follow up. Electrocautery is less invasive, provides a precise excision and adequate hemostasis throughout the procedure, for complete excision of the lesion from its base hence it's a safe and efficient alternative to conventional scalpel.

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