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Case Report

Knife or light? A case report of recurrent telangiectatic granuloma

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Abstract

This paper intends to highlight the importance of LASERS (Light Amplification by Stimulated Emission of Radiation) in the treatment of recurrent telangiectatic granuloma.

A Diode soft tissue cutting LASER of 810 nm wavelength, 1.8 W, contact LASER was used in continuous mode to excise recurrent telangiectatic granuloma. The lesion was successfully excised with no recurrence and postoperative complications thereafter.

Telangiectatic granuloma has a tendency to bleed profusely due to its rich vascular supply, with scalpel surgery handling of the tissue becomes cumbersome and there is an increased chance of leaving behind a tissue remnant leading to recurrence of the lesion if not excised or curetted completely. On the other hand, LASER has an advantage of much lesser intra operative bleeding making the procedure easier which enables to excise and curette the tissue completely and hence no recurrence. It does not need administration of local anaesthesia and application of sutures thus avoiding the use of needles. It is a painless, fearless and bloodless procedure. Hence, although scalpel (knife) can be used to excise the lesion, LASER (light) has many more advantages that makes it a preferred choice for the treatment.

Keywords: Pyogenic granuloma; Telangiectatic granuloma; Recurrent, Diode LASER; LASER.

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1. Introduction

Telangiectatic granuloma which is traditionally called as ‘pyogenic granuloma’ is a benign vascular tumorlike growth noted on skin and oral mucosa. The most common site of occurrence is the gingiva (75%) followed by lips, tongue, buccal mucosa and occasionally on other areas. The term ‘pyogenic granuloma’ is a Latin term which means producing or generating pus by an infectious agent is considered a misnomer. ‘Telangiectatic granuloma’ is a Greek term which means dilated capillary vessels is considered a more appropriate term.[1] The etiology of the lesion is usually considered as some form of trauma to the tissues which paves a pathway for the invasion of nonspecific types of microorganisms. The tissues respond in a characteristic manner to these organisms of low virulence by the overzealous proliferation of a vascular type of connective tissue. The lesion appears as a reddish blue smooth or lobulated growth the surface of which maybe ulcerated. The growth maybe sessile or pedunculated involving most commonly the facial aspect of maxillary anterior gingiva including the interdental gingiva.[2] The size of the lesion may grow upto a considerable size which becomes a matter of concern due to its resemblance to a cancerous growth or some vascular malformation and it becomes necessary to excise a lesion and do a histopathology for the same. The lesion may get traumatized posing a difficulty in eating and talking and it also affects the aesthetics of the patient. Moreover, the patient gets anxious about it being a cancerous growth and hence it is necessary to treat it and reassure the patient. The recurrence rate of telangiectatic granuloma is 16%.[3] Surgical scalpel excision and curettage is the conventional method of approaching the lesion. Other methods of treatment used are electrocautery, chemical cautery with silver nitrate without excision, cryotherapy, LASER excision using diode LASER, carbon dioxide LASER, Nd:YAG LASER, medical management including topical imiquimod cream, alitretinoin

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gel, timolol, propranolol and intralesional therapy with corticosteroids and sclerosants such as ethanolamine oleate, sodium tetradecyl sulfate, polidocanol, and bleomycin.[4] In this case report we will look into a successfully treated case of recurrent telangiectatic granuloma with diode laser. It was previously excised surgically using a scalpel which failed and the lesion recurred. This case report highlights the importance of taking appropriate measure to treat telangiectatic granuloma using diode LASER which alleviates the problems and complications associated with traditional methods.

2. Case Report

A 30 years old female patient reported to the department of Oral Medicine and Radiology with the chief complain of painless tumor like growth in the gums of the upper front teeth region of the jaw.

The history of present illness revealed that the patient was apparently alright two months back when the patient experienced small growth in the gingiva in the upper front region of the jaw which increased gradually. The patient then underwent scalpel surgical excision of the lesion past one month after which the lesion recurred within 15 days. The lesion was smaller in size and grew larger gradually. There was associated bleeding on brushing or slightest provocation of the growth. There was no relevant medical history as given by the patient. Past dental history was the scalpel surgical excision of the gingival growth. No habit history was given by the patient. No history of pregnancy or administration of oral contraceptives, hormonal pills was given.

On careful clinical examination a small, reddish pink, firm, lobulated, pedunculated gingival growth was seen in between maxillary right and left central incisor involving the interdental gingiva. The growth measured 1 cm x 1cm approximately. The surface of the growth was smooth and ulcerated in some region. The adjacent areas of the teeth and gingiva showed plaque retention. Bleeding on provocation was noted. **(Figure 1)**

Figure 1: A small, discrete, reddish pink, firm, lobulated, pedunculated gingival growth in between maxillary right and left central incisor involving the interdental gingiva measuring 1cm x 1cm approximately.

Based on the clinical findings a provisional diagnosis of pyogenic granuloma was given. Differential diagnosis included peripheral giant cell granuloma, inflammatory gingival enlargement, haemangioma, vascular malformation. Chairside investigation of diascopy test and palpation of the lesion for bruit helped us rule out the possibility of vascular malformation.

A radiograph of the maxillary right and left central incisor was made using intra oral periapical technique to rule out any severe bony changes which is usually associated with peripheral giant cell granuloma. A mild bone loss in the interdental crestal region was noted between maxillary right and left central incisor and radiographic inference of mild periodontal bone loss was given. **(Figure 2)**

Figure 2: Radiograph of maxillary right and left central incisors showing mild interdental bone loss in the crestal region.

A LASER excision of the lesion was proposed as a treatment plan. The patient was explained about the lesion and its treatment procedure in detail. Investigations such as complete blood count, bleeding time and clotting time was advised and the patient was appointed for the LASER excision procedure.

Localized scaling in the maxillary anterior region was performed a week before the LASER excision to eliminate the local irritant. The patient reported with the investigations of complete blood count, bleeding time and clotting time all of which was within normal physiological limits. Informed consent of the patient and the accompanying relative was taken. The procedure was explained in detail to the patient. The patient was conscious and well oriented with time, place and person.

The lesion was excised in to using a soft tissue cutting diode LASER of 810 nm wavelength and 1.8 W power. The tip of the LASER was kept in contact of the mass and was used intermittently in swaying motion. The LASER was used in a continuous mode. The interdental region and the margin

of the lesion was curetted carefully. Suturing was not required as the wound created was small and there was very less and controlled intra operative bleeding. The postoperative wound was allowed to heal by secondary intention. The tissue specimen was kept in 10% formalin solution and then sent for histopathological evaluation to the Department of Oral and maxillofacial microbiology and pathology. **(Figure 3a,b)**

Figure 3: Excised specimen and postoperative clinical picture after LASER excision of the lesion.

After the completion of the procedure the patient was kept under observation for an hour. The patient was given postoperative instructions to maintain oral hygiene and rinse the oral cavity using chlorhexidine 0.2% mouthwash thrice a day, apply choline salicylate (8.7%) and lidocaine 2% gel on the site of operation thrice a day for three days, and take Tab. Diclofenac sodium 50 mg stat. There was no immediate postoperative complication reported.

The patient was recalled after three days for the follow up and the monitoring the healing of the lesion. The healing followed a normal course, with fibrin formation at the site. **(Figure 4)**

Figure 4: Clinical picture on the third day of follow up.

The patient reported after a month with complete healing of the lesion and no recurrence of the growth was noted. Reformation of interdental papilla was noted. The patient was advised to undergo complete oral prophylaxis and maintenance of oral hygiene. The patient reported after two months with no recurrence, complete healing and maintained oral hygiene. **(Figure 5,6)**

Figure 5: Clinical picture after one month of follow up.

Figure 6: Clinical picture after two months of follow up.

Histopathological report showed haematoxylin and eosin-stained section under scanner view showed parakeratinized stratified squamous epithelium of varying thickness. Connective tissue stroma is fibrocellular with dense bundles of collagen fibres arranged haphazardly interspersed with spindle and plump shaped fibroblast. Diffuse, dense, chronic inflammatory infiltrate are also noted. Numerous dilated endothelial lined blood vessels engorged with red blood cells are noted. Areas of haemorrhage and hemosiderin pigment is also noted. Areas of degeneration and necrosis also noted. Overall features suggested the lesion as 'telangiectatic granuloma'. **(Figure 7)**

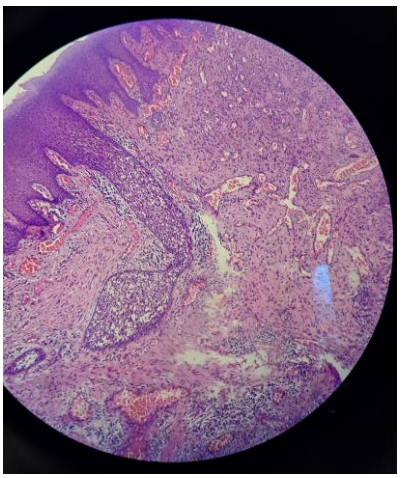

Figure 7: 4x view H & E-stained section under scanner view showing parakeratinized epithelium, fibrocellular connective tissue stroma, chronic inflammatory infiltrate and endothelial lined blood vessels engorged with red blood cells.

3. Discussion

According to the WHO classification of 2015, telangiectatic granuloma is a vascular entity that is included in the gingival disorders and edentulous alveolar ridges subgroup.[5] Pyogenic granuloma is a common benign mucocutaneous lesion. It was first described by Poncet and Dor in 1897. The term pyogenic granuloma is now considered a misnomer as it

does not produce pus.[6] In literature various names have been given to this lesion; botryomycosis hominis, botryomycoma, telangiectatic granuloma, benign pedunculated granuloma, pseudobotryomycosis, fibroangioma, Croker and Hartzell disease, septic granuloma, hemangiomatous granuloma, lobular capillary hemangioma, eruption capillary hemangioma.[7-9] Due to the histopathological appearance of capillaries engorged with red blood cells which literally means 'telangiectasia' as seen in our case, it would be more appropriate to call the lesion as 'telangiectatic granuloma'.

Clinically telangiectatic granuloma appears as a dull reddish pink or blue, sessile, or pedunculated smooth surfaced nodule that may easily bleed, crust, or ulcerate. Lesions may grow rapidly, reach its maximum size, and remain static.[10] The most common site affected is gingiva as seen in the present case, which accounts for 75% of all cases. Poor oral hygiene and presence of local irritational factors acts a precipitating factor predisposing to the inflammation. The lip, tongue, and buccal mucosa are the next most common sites. Minor trauma or chronic irritation to the tissue is found as a precipitating factor in majority of the cases.[11] Other factors which contribute to the etiopathogenesis are; viral oncogenes, hormonal influences, microscopic arteriovenous malformation along with inclusion bodies and gene depression in fibroblasts.[12]

Telangiectatic granuloma may appear at any age, 60% cases are observed between the ages of 10 and 40. Peak incidence is seen during the third decade of life. Female predilection is twice as that in male, as seen in this case. It is more common in children and young adults.[13] Endothelial cells are able to proliferate under inflammatory stimuli by increased secretion of angiogenetic growth factors such as VEGF (vascular endothelial growth factor) and basic fibroblast growth factor. Female sex hormones such as oestrogen and progesterone may stimulate the secretion of these factors from activated monocytes/macrophages that protects from apoptosis and leads to the development telangiectatic granuloma by vascular proliferation. The incidence of telangiectatic granuloma is a common finding in pregnant women in the first trimester, also called as 'pregnancy tumor' or 'granuloma gravidarum'.[14] Hence, it is very important to take careful history of pregnancy or administration of any hormonal pills or oral contraceptive agents.

Differential diagnosis includes haemangioma, peripheral giant cell granuloma, peripheral ossifying fibroma and metastatic carcinoma, and amelanotic melanoma.[15]

Surgical scalpel excision and curettage is the conventional method of approaching the lesion. Other methods of treatment used are electrocautery, chemical cautery with silver nitrate without excision, cryotherapy, LASER excision using diode LASER, carbon dioxide LASER, Nd:YAG LASER, medical management including topical imiquimod cream, alitretinoin gel, timolol, propranolol and intralesional therapy with corticosteroids and sclerosants such as ethanolamine oleate, sodium tetradecyl sulfate, polidocanol, and bleomycin.[16]

The principle behind working of LASER is selective photo thermolysis. The light energy absorbed by the tissues is converted into the heat energy. The heat energy diffuses through the tissues causing mechanical injury to the blood vessels due to photocoagulation. The Diode LASER works on "hot-tip" effect. Accumulation of heat at the fibre tip results into thick layer of coagulation on treated surface area.[17]

4. Conclusion

The mainstay of the treatment of telangiectatic granuloma is that the lesion has to be completely excised and curetted leaving no amount of remnant tissue behind which would then tend to recur later. It can be achieved by both scalpel surgical excision (knife) and LASER excision (light) effectively. LASER excision however, has got an added advantage of relatively bloodless surgery and ease of handling the tissue as telangiectatic granuloma is a highly vascular lesion that bleeds easily on slightest provocation. It is a painless procedure which does not need an administration of local anaesthesia thereby warding off the fear of needle prick in patients. Postoperative healing is excellent which does not necessitate the use of sutures. Also, there is minimal swelling, scarring and coagulation, reduction in surgical time and less or no postsurgical pain and complications in healing making it a better choice of treatment.

5. Ethics Approval

No ethical approval is required as this is not a research involving humans or animals.

6. Consent to Participate

Written informed consent was obtained from the concerned patient and relative.

7. Consent to Publish

The authors affirm that participants provided informed consent for publication of the images in figures 1-7 and the clinical details.

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9. Conflict of Interest

None.

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