



## TREATMENT OF ORAL HEMANGIOMAS USING SCLEROTHERAPY: A CONSERVATIVE APPROACH- CASE REPORT.

### Dental Science

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### ABSTRACT

Most of the vascular tumors in the maxillofacial region are hemangiomas. Hemangiomas are basically benign lesions of a vascular origin characterized microscopically by proliferation of blood vessels. The congenital hemangioma is often present at birth and may become more apparent throughout life. They are probably developmental rather than neoplastic in origin. They can cause esthetic and functional impairment, depending on location. Despite their benign origin and behavior, hemangiomas in the oral cavity are always of clinical importance to the dental profession and require appropriate clinical management as sometimes it is associated with complications like bleeding and ulceration. Treatment is primarily dependent on correct diagnosis of the lesion and on its anatomic location. This case report presents a case of hemangioma in the edentulous region of maxillary right molar in 47-year-old male and its treatment using sclerosing agent.

### KEYWORDS

Hemangioma, Sclerosing agents, Sodium tetradecyl sulphate

### INTRODUCTION

Hemangiomas are one of the most common benign vasoformative tumors of infancy and are present in a variety of fashions, occasionally appearing in the oral cavity. These lesions are characterized by an excess of blood vessels in an area of sub mucosal connective tissue. Presentation may occur within the first few weeks immediately after birth and may become more apparent during life<sup>1</sup>. Many modes of therapy have been advised for hemangiomas, which include cryotherapy, LASERS, cautery, radiotherapy and sclerosing agents. Most these techniques can cause unavoidable tissue damage and subsequent fibrosis. Sclerosing agents have high response rate, they are less expensive and very easy to obtain. However, various sclerosing agents like ethanol, boiling contrast media, sodium morrhuate, sodium tetradecyl sulphate (STS), and bleomycin have been used successfully in management of these type of lesions. These agents sometimes cause marked tissue irritation and thrombosis with subsequent local inflammation. Intra-lesional injection of 3% sodium tetradecyl sulphate has been used since many years for the treatment of varicose veins, hemorrhoids, and hemangioma<sup>2</sup>. Sclerotherapy is one of the best treatment option that has been used with great success on small lesions located in sites with esthetic impact, where surgery could leave unattractive scarring.

### Case Report

A 47 years old male patient reported to the department of oral and maxillofacial surgery with the chief complaint of gingival bleeding while brushing which was accompanied by swelling in the right maxillary molar region since 2 months. The swelling was painless and small in size initially which gradually progressed to present size. On history, Patient revealed that, he had presented with similar complaint 2 yrs back, where he underwent surgical excision of the lesion along with extraction of the right maxillary second molar under local anesthesia.

Excised lesion was sent for histopathological examination and the report was given as Capillary hemangioma as the tissue showed smooth capillary proliferation lined by stratified epithelium with focal ulceration. Sub epithelial tissue showed smooth capillary proliferation lined by endothelial cells and Most of the capillaries showing red blood cells in the lumen with no evidence of dysplasia or malignancy.

On clinical examination of the present condition of the patient, extra orally there was no facial asymmetry, Intraoral examination revealed a solitary, sessile, well-defined, roughly oval shaped lesion on buccal surface of right maxillary molar region, covering almost the edentulous space of maxillary right second molar region measuring about 1.5x1.5 cm approximately (Figure 1). The color of the mucosa

over the swelling was erythematous. The swelling was tender on palpation, soft to firm in consistency with a smooth surface and non reducible.

The swelling was compressible and blanching was noted on the application of pressure with a slight bleed on provocation, and no pulsations were felt. Diagnostic Intraoral periapical radiograph revealed that there was localized crestal bone destruction in the area of the lesion (Figure 2).

Based on previous history and histopathological report of the patient, final diagnosis of recurrent capillary hemangioma was made.

Considering the age of the patient, size and extent of the lesion, to reduce surgical morbidity, it was planned to treat the patient with intralesional sclerotherapy with 3% sodium tetra decylsulphate under local anesthesia in three visits. Before starting the treatment, complete hematological profile of the patient was advised and the results were within the normal limits.

In the first visit, Under aseptic condition, after anesthetizing the area with local anesthesia, 3ml of intralesional sclerosing agent (sodium tetra decylsulphate) was injected intralesionally in a circumferential manner around the lesion at multiple sites using 25gauge needle (Figure 4).

Patient was kept on course of antibiotics and analgesics and advised to use chlorhexidine mouth wash. Patient was recalled after 2 weeks for second visit.

In the second visit, on examination of the lesion, the size of the lesion decreased when compared from the patient's first visit and there were no fresh complaints from the patient (Figure 3). So again the same procedure was repeated.

After the procedure, patient was complaining of burning sensation at the site of injection but that subsided within hours. No other adverse complications were noted. Patient was recalled after 2 week for third visit.

In the third visit, on examination of the lesion, satisfactory results were obtained and the patient was recalled after 1 week for review. At the end of 5<sup>th</sup> week, the lesion had virtually disappeared without scarring and no further injections were necessary. The patient was asymptomatic since then without any complaints.



**Figure 1: Clinical photograph showing swelling in the edentulous area of right maxillary second molar region.**



**Figure 2: Intra oral periapical radiograph showing crestal bone loss in the edentulous area.**



**Figure 3: Clinical photograph showing decrease in swelling after using 3% sodium tetradecyl sulphate. (mirror image)**



**Figure 4: Syringe and sclerosing agent**

## DISCUSSION

Hemangiomas are defined as vascular tumors occurring in infancy that undergo a rapid phase of growth and expansion followed by a period of slow and sustained growth during childhood<sup>3</sup>. The word "hemangioma" has been widely used in the medical and dental literature in reference to a variety of different vascular anomalies, which has traditionally led to a significant amount of confusion regarding the nomenclature of these lesions. In 1982, Mulliken and Glowacki described a classification scheme which is presently accepted. These tumors are classified under 2 broad headings of hemangioma and vascular malformation<sup>4</sup>. Hemangioma is further subclassified based on their histological appearance as: (1) capillary lesions; (2) cavernous lesions; and (3) mixed lesions.

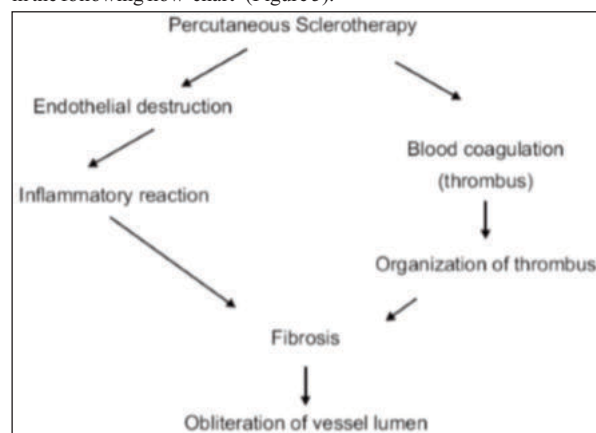
Although capillary hemangiomas are benign, significant subsets are life altering. Complications may include: (1) pain; (2) scarring; (3) disfigurement; and (4) (less commonly) infection and anemia secondary to bleeding<sup>5</sup>.

Clinically, haemangioma appears as soft mass, smooth or lobulated, and sessile or pedunculated. Hemangiomas range from a few millimeters to several centimeters in diameter<sup>6</sup>. They are usually deep red and may blanch on the application of pressure and if large in size, might interfere with mastication.

The diagnosis of hemangiomas are made from the history and clinical examination. The management of hemangiomas of the oral mucosa varies according to the age of the patient, the size of the lesion, the site of involvement and the clinical nature of the hemangioma. The range of treatment includes steroid therapy, Carbon dioxide(CO<sub>2</sub>) or Argon LASER therapy, sclerosing agents, surgical excision with or without ligation of vessels and embolization<sup>7</sup>. If the lesion is accessible surgically, surgical excision is the gold standard treatment. However there are several obstacles when considering surgery such as: 1) Complete excision is not possible; 2) Dissection is often complicated by excessive bleeding; 3) Recurrence; 4) Functional impairment of vital functions like swallowing; 5) Morbidity of surgical procedure; These issues have led people to seek alternative treatment of these malformations like cryotherapy, cautery, radiotherapy and sclerosing agents<sup>8</sup>.

Sclerotherapy is the safest method, offering partial or total regression of the lesion, facilitating resection in a subsequent surgical intervention, if this proves necessary. In some cases, sclerotherapy may be the definitive treatment, achieving total regression of the lesion. Possible sclerosing agents include sodium morrhuate, sodium psylliate, hypertonic glucose solution, sodium tetradecyl sulphate and ethanolamine oleate<sup>9</sup>. These sclerosing agents are tissue irritants that cause vascular thrombosis and endothelial damage, leading to

endofibrosis and vascular obliteration when injected into or adjacent to blood vessels. The action of this sclerosing agent has been summarized in the following flow-chart<sup>10</sup>(Figure 5).



**Figure 5: Flowchart Showing The Action Of Sclerosing Agent.**

The most versatile and effective sclerosant available is 1% and 3% sodium tetradecyl sulphate, which is the detergent solution of the sclerosing agent. The advantages sodium tetradecyl sulphate detergent sclerosants are the absence of pain with intravascular injection and a very low incidence of allergic reactions. There is also no hemolysis as a direct effect of the drug and, therefore, the less potential for hyperpigmentation<sup>11</sup>.

Although sclerotherapy may be a simple technique that is apparently free from complications, special precautions must be taken. The sclerosing agent should be administered using an insulin needle, injecting the solution into the middle of the lesion, to avoid necrosis of surrounding tissues. The quantity injected will depend upon the dimensions of the lesion, but, as a rule, shouldn't exceed 2 mL. Treatment may involve one or more applications, depending on the extent of the lesion and on the results, which should be evaluated when the next dose is administered, after an interval of 1 to 2 weeks<sup>9</sup>.

## CONCLUSION

Vascular lesions within the head and neck are complex pathologies that are unlikely to be resolved if inappropriate treatment is chosen. Sclerotherapy is, without doubt, a feasible treatment method can effectively resolve this type of vascular neoplasm, providing it is correctly indicated on the basis of its benefits and limitations. In the case described here, administration of the sclerosing agent sodium tetradecyl sulphate resulted rapid and safe involution of the lesion, using a non-surgical method that is more likely to lead to the patient's esthetic recovery.

## Conflicts of interest

There are no conflicts of interest.

## Acknowledgment

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