

# Intraoral Hemangioma: An overview of the clinical entity

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## ABSTRACT

Hemangiomas are common tumors 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. 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. Surgery and other treatment modalities are not always satisfactory and have a higher morbidity, recurrence, and complication rate. This case report presents a case of hemangioma of mandibular left lower region in 47-year-old female and its treatment using sclerosing agent.

**Key words:** Hemangioma, sclerotherapy, sodium tetradecyl sulfate

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## INTRODUCTION

Hemangiomas are benign, vascular tumors that can lead to disfigurement or may become life-threatening. They are usually classified into capillary, cavernous, or mixed hemangiomas. Oral mucosa and skin are most commonly affected, followed by bone and muscles within the oral cavity. These appear as flat or raised deep blue in color over the surface of the mucosa.<sup>[1]</sup> Many modes of therapy have been advised for hemangiomas, which include cautery, cryotherapy, radiotherapy, and sclerosing agents. Most these techniques cause unavoidable tissue damage and subsequent fibrosis.

Sclerosing agents have high response rate, they are less expensive and 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 lesions. These agents sometimes cause marked tissue irritation and thrombosis with subsequent local inflammation. Intra-lesional injection of 3% STS has been used since many years for the treatment of varicose veins, hemorrhoids, and hemangioma.<sup>[2]</sup>

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## CASE REPORT

A 47-year-old woman reported to our clinic with a chief complaint of gingival bleeding on brushing. On examination, a painless bluish purple maculopapular lesion, irregular in shape and measuring approximately 6 × 5 mm was seen on the mandibular left buccal mucosa and vestibule, extending between canine and first molar [Figure 1]. It was present since birth and increased progressively with age. The lesion was blanching on applying pressure. There were no visible pulsations neither was there any bruit felt. There was frank blood noted on aspiration through the swelling [Figure 2]. Because of close proximity of mental neurovascular bundle, second aspiration was done to rule out accidental vascular puncture. Repeat aspirations also yielded frank blood. These clinical findings were strongly suggestive of a vascular malformation. Diagnostic panoramic radiograph revealed no radiolucent area at the periapical region of premolar teeth [Figure 3]. Provisional diagnosis of vascular malformation was done and planned for ultrasonography (USG). An arteriography was planned but could not be performed because of the small size of the lesion as well as the absence of a well-defined nutritional vessel.

The USG findings revealed a small hypo-echoic sub-mucosal lesion, which showed mild vascularity likely to represent a benign lesion [Figure 4].



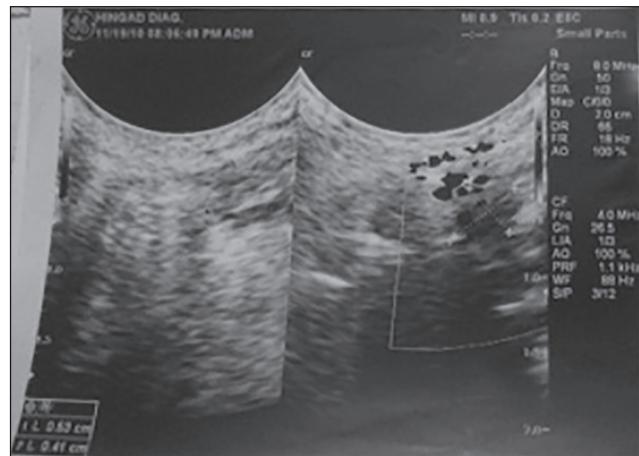
**Figure 1:** Intraoral lesion



**Figure 2:** Blood aspirate



**Figure 3:** Panoramic radiograph



**Figure 4:** Ultra sonographic Image showing hypo echoic areas

Histopathological correlation was required but patient was not willing for it.

We decided to treat the lesion using sclerosing agent i.e., STS injection (3%). A 0.1 ml of STS injection (3%) was given intra-lesionally with tuberculin syringe [Figure 5], directly into mucosa, at multiple sites and contained within the lesion using manual compression for 15-20 minutes. Post sclerotherapy, antibiotics, analgesics, and anti-trypsin preparations were given along with ice-pack applications. The injections were repeated after an interval of 3 weeks depending upon the merit of individual case, up to the maximum of five sessions. After 6 months following the injections, the affected area had almost healed [Figure 6].

## DISCUSSION

The venous malformations are the commonest of all the vascular anomalies and have a propensity for the head and neck.<sup>[1]</sup> They can cause pain, bleeding, restriction of movement, pressure on adjacent structures, consumptive coagulopathy, and aesthetic concern. They may be discrete or extensive. The overall incidence of venous

malformations is reported to be 1-4% of the population. Sclerotherapy alone or in combination with surgical excision is now the accepted treatment modality in symptomatic venous malformations. Localized areas can be treated without an incision and diffuse, extensive lesions may be symptomatically palliated. Conservative management with numerous sclerosing agents (boiling water, alcohol, sodium morrhuate, quinine, urethane, silver nitrate, iron, zinc chloride, liquid vegetable protein) have been used since the 18<sup>th</sup> century for the treatment of a wide variety of vascular anomalies.<sup>[3]</sup> Sclerosing agents basically are irritants that injure the endothelial surfaces, ultimately resulting in obliteration of the space between these surface.<sup>[4]</sup> Sclerosing agents have been classified into three groups based on the mechanism of action causing the injury to the endothelium.<sup>[5]</sup>

- a. Detergents: Polidocanol, STS, sodium morrhuate, and ethanolamine Oleate. The detergents cause injury by altering the surface tension surrounding endothelial cells.
- b. Osmotic agents: Hypertonic saline, hypertonic saline/dextrose. They act through endothelial damage through dehydration.



**Figure 5:** Syringe and sclerosing solution

c. Chemical irritants: Chromated glycerin, poly-iodinated iodide.

The chemical irritants include the corrosives, which act by a cauterizing action and those which injure cells by a heavy metal effect.

However, Sclerotherapy of major venous malformations is dangerous and must be performed by a skilled and experienced interventional radiologist. There are no randomized studies that have compared the various sclerosing agents. We have chosen STS as it is an easily available effective sclerosant, which is well-tolerated and is without systemic side-effects. STS is a synthetic surface-acting substance. It is a long chain fatty acid set of an alkali metal with the property of soap. It is a clear, no viscous liquid with low surface tension. Sclerosing solutions are both tissue irritants and thrombogenic agents that provoke an inflammatory reaction, which causes fibrosis and obliteration of vascular channels.

The action of STS is considered to be that of irritant to the intima of the vein wall, so that compression of the vein, fibrosis takes place and the vein is permanently occluded by the development of fibrosis in the wall, and across the lumen of the compressed vein.<sup>[6]</sup>

## CONCLUSION

The management of venous malformations becomes increasingly complex as they often involve adjacent neurovascular structures. Surgery and other treatment modalities are often not feasible or not attempted alone because of the associated morbidity. Conservative management in form of sclerotherapy with STS has been



**Figure 6:** Six months after injections

found to be an inexpensive, readily available outpatient procedure. It is quite safe and especially useful in areas where surgery is hazardous. Though it does not resolve larger venous malformations it does decrease the size and vascularity to facilitate future surgery or act as a palliative treatment.

To summarize, percutaneous STS when used either alone or as adjunct to surgery is a safe, effective, and inexpensive agent in the treatment of venous malformations. However, proper case selection, evaluation, and careful planning is necessary to reduce unwarranted risks and complications.

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