

Treatment of Oral Hemangioma with 3% Sodium Tetradecyl Sulfate: Study of 20 Cases

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Received: 6 April 2010 / Accepted: 13 June 2010 / Published online: 13 April 2011
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Abstract Hemangiomas possess an extremely challenging treatment dilemma for surgeons and the patients. Most of the hemangiomas involute but if they don't involute or impair the vital functions or occur in adults they need intervention. Present study was conducted to evaluate and discuss the response of sclerosing agent 3% sodium tetradecyl sulfate (STDS) in oral hemangioma. All 20 cases of hemangioma were diagnosed clinically and were treated with 3% sodium tetradecyl sulfate (STDS) injections locally at regular intervals depending upon the size of the lesion. Hemangioma regressed in all the cases with considerable relief of symptoms with minimal complications. When used in appropriate doses, Sclerosing agent, 3% sodium tetradecyl sulfate (STD), is very effective for treatment of oral hemangioma.

Keywords Oral hemangioma · Capillary hemangioma · Vascular malformation · Sclerosing agents · Sodium tetradecyl sulfate

Introduction

Hemangiomas are often present at birth but may become more apparent during later life. They appear as a flat or raised reddish blue lesion and are generally solitary. Hemangiomas invariably involute however at least 10–20% cases needs active intervention [1] because of their tendency to bleed and become ulcerated. Hemangiomas of the oral

cavity are not common but amongst them, the head and neck is the common site [2].

Incidence of Hemangioma ranges from 1–12% depending on age and population studied [3]. Injection of sclerosing agents into these lesions can serve as therapy as well as a preoperative treatment. The present study was conducted by using 3% sodium tetradecyl sulfate (STDS) intralesionally.

Materials and Methods

The present study was conducted in the department of ENT, SMS Medical College, Jaipur, between 2003 and 2007 on 20 cases of oral hemangioma (Table 1). All the cases were diagnosed clinically and all cases were treated with sodium tetradecyl sulfate (STDS). Surface anesthesia was given by 15% xylocaine spray. 3% sodium tetradecyl sulphate was injected intralesionally at multiple sites, first at the periphery and then into the centre of the lesion with insulin syringe. 0.1–1 ml of STS was injected in one sitting depending upon the size of lesion. Manual compression was applied to the lesion to ensure stasis wherever it was possible. Injection was repeated after an interval of 2 weeks. Up to 10 injections were given in larger lesions.

All the patients complained of pain and mild local inflammatory reaction was noted in all cases. For pain they were given analgesics and anti inflammatory tablets for 5–7 days.

Results

Hemangioma regressed in all the cases with considerable relief of symptoms and minimal complications (Fig. 1). One Patient had palatal perforation and two patients had

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Table 1 Results

Site of lesion	Number of cases	Total regression	Partial regression
Tongue	17	16	1
Lip	1	1	0
Palate	2	2	0

excessive sloughing and ulceration of tongue but they recovered within 2 weeks (Table 2). Total regression was seen in all the cases except in one case of hemangioma tongue. This was a case of recurrence after cryosurgery. Although the patient's complaint of bleeding was treated after giving intralesional 3% sodium tetradecyl sulfate but she had a residual mass.

Discussion

The term hemangioma has been commonly used to describe a large number of vasoformative tumours. They are benign, vascular tumour that can lead to disfigurement or life threatening consequences. Hemangiomas are usually classified into capillary, cavernous and mixed hemangioma. In oral cavity the bone and muscles are affected as well as the mucosa and skin. The diagnoses of hemangioma are straightforward from the history and clinical examination. The differential diagnoses are limited [2]. In a superficial, localized lesion such as one in the tongue, imaging study is usually not indicated [4].

If the lesion is accessible surgically, surgical excision is the gold standard treatment [5].

However there are several obstacles when considering surgery

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 cautery, cryotherapy, radiotherapy, sclerosing agents [5].

Table 2 Complications

Complication	Number
Pain	20
Sloughing and ulceration	2
Palatal perforation	1

Sclerosing agent causes marked tissue irritation and/or thrombosis with subsequent local inflammation and tissue necrosis. The inflammation and tissue necrosis result in fibrosis with tissue contracture [5].

Various sclerosing agents are—absolute ethanol, boiling contrast media, polidocanol, sodium morrhuate, sodium tetradecyl sulfate, OK432 and bleomycin. Absolute ethanol causes strong endothelial damage. Response rate is high, less expensive and easy to obtain but the injection is very painful and has high complication rate. Penetrative effect on deep vascular layer is also high. Polidocanol leads to overhydration of endothelial cells and is almost painless but it may induce irreversible cardiac arrest [6].

Sodium tetradecyl sulfate (sotradecol) is the sclerosing agent which has been used for years in the treatment of varicose vein, hemorrhoids and hemangioma [7]. Intravenous injection causes intima inflammation and thrombus formation. This usually occludes the injected vein and subsequent formation of fibrous tissue results in partial or complete vein obliteration that may or may not be permanent.

Minkow used a technique of intralesional injection of 0.1–0.5 ml of 3% STS in intraoral hemangioma at the interval of 2–4 weeks [7]. Satisfactory results were reported in all patients with minimum side effects and disappearance of the lesions without scarring. The number of injections varied according to the size of lesion. The interval between the injections was usually 2–4 weeks. It allows the induration and inflammatory reaction to subside [4]. In our study up to ten injections at an interval of 2–4 weeks were given to treat bigger lesion (Fig. 2).

Use of laser therapy for the treatment of hemangioma has gained popularity. Laser leads to selective photothermolysis rather than non selective tissue destruction. Oral mucosa can be amenable to yellow light laser (578–585 nm) as these are selectively absorbed by hemoglobin. The tunable dye laser can ablate superficial ecstastic

Fig. 1 Hemangioma tongue regressed completely with the use of 3% STDS





Fig. 2 Larger lesions like this needed up to 10 injections for almost complete regression

blood vessels without significant epidermal damage or scarring.

Nd:YAG laser has less selectivity for any particular chromophore and use on nonmucosal surface is reported to result in more scarring. Argon laser has limited depth of penetration so it can be used for superficial bleeding [2].

To conclude Sclerosing agent 3% sodium tetradecyl sulfate is very effective for treatment of oral hemangioma. Dosage and site of injection should be precisely decided according to the size of the lesion to prevent complications.

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