CASE REPORT

Management of haemangioma with sclerosing agent: a case report

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SUMMARY

The use of multiple weekly intralesional injections of 3% sodium tetradecyl sulfate as a sclerosing agent for the management of facial haemangiomas is a safe treatment with acceptable results. As presented in this case report, this technique offers the patient considerable relief of symptoms with minimal complications. However, the possibility of second-stage surgery to correct residual deformity is still considered. Sclerotherapy with 3% sodium tetradecyl sulfate provides a good preparation for further surgery.

BACKGROUND

Soft tissue haemangiomas are non-malignant lesions that can be conveniently categorised as capillary, venous and cavernous. Management of haemangiomas of the head and neck poses too many problems that one-set solution obviously becomes impossible. Consideration must be given to the type of the lesion, the depth of the lesion, the relationship of the lesion to adjacent vital structures and the patient's age. Very often local infarction and thrombosis will result in the spontaneous resolution of a haemangioma.

Several modes of treatment may be considered, such as radiotherapy, electrocoagulation, surgery, cryosurgery, carbon dioxide snow, silver nitrate and sclerosing solutions.

Sclerosing solutions have been used in the management of haemangiomas for more than 100 years. Many different sclerosing agents with varying degrees of success are used. Among these are sodium tetradecyl sulfate (3% sterol), sodium morrhuate, sodium citrate, monoethanol amine oleate, invert sugar, boiling water and sodium psyllate.

This case report of a haemangioma of the right upper lip, successfully treated with multiple weekly injections of 3% sterol.

CASE PRESENTATION

A 47-years-old male patient reported to the department of oral medicine and radiology with a symptom of swelling in the upper right lip from past 32 years. The dental and medical histories were non-contributory. The patient was moderately built and moderately nourished, conscious, cooperative at the time of general physical examination. All the vital signs were under normal limits. Extraoral examination revealed facial asymmetry and discrepancy between the upper and lower lips on the right side of the face. A comprehensive intraoral examination revealed a localised multiple submucous nodules coated with normal mucosa

with well-defined margins. The two distinct lobes measured about 1 cm×1 cm and 1 cm×2 cm in diameter. They were firm and rubbery in texture. No surface ulceration or secondary infection was noted, exhibit the typical purplish colour of a haemangioma. Blanchin on the application of pressure was also noticed. Provisional diagnosis was given as a haemangioma of the right upper lip with differential diagnosis of arteriovenous malformation and lymphangioma.

INVESTIGATIONS

Investigation procedures employed in the present case are routine blood examination and ultrasound spectral Doppler flow. Routine blood examination showed normal value limits except lower value of haemoglobin (10.8 mg%).

An ultrasound spectral Doppler flow of the upper lip was performed with high-frequency probe. A small hypoechoic mass was noted in the upper lip on the right side. The mass was situated deep in the subcutaneous tissue and was superficial to the muscle. A colour Doppler showed increased flow in the mass (arterial & venous) while underlying bone appeared normal. An impression of the ultrasound spectral Doppler flow was vascular malformation in the upper lip on the right side.

Final diagnosis was performed according to the impression of colour Doppler test as vascular malformation in the upper lip on the right side.

DIFFERENTIAL DIAGNOSIS

Arteriovenous malformation and lymphangioma.

TREATMENT

We used STEROL-3% (sodium tetradecyl sulfate) a sclerosing agent as intralesional injection.

First visit (figure 1): After anaesthetising the area, intralesional sclerosing agent, 0.1–0.5 mL of 3% setrol is injected using a 25 gauge needle at multiple sites (figure 2). It is repeated after a 2-week interval (figure 3).

Final visit: A satisfactory result in the patient, with minimal adverse effects such as mild tolerable burning sensation at the site of the injection that subsided within hours and an ulcer at the site of the injection (figures 4 and 5) that healed by 3–4 days in each visit. Disappearance of the lesion without scarring was noticed at the end of sixth visit (figure 6).

OUTCOME AND FOLLOW-UP

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Figure 1 Extraoral lesion at first visit.

within hours and an ulcer at the site of the injection (figures 2 and 4) that healed by 3–4 days in each visit. Disappearance of the lesion without scarring was noticed at the end of sixth visit (figure 6).

DISCUSSION

Haemangiomas are tumour-like malformations composed of seemingly disorganised masses of endothelium-lined vessels that are filled with blood and connected to the main blood vascular

Figure 2 Ulceration at the site of injection in second visit.

Figure 3 Intraoral lesion at first visit.

system. They have been described in almost all locations in the body. Haemangioma can be either congenital or traumatic in origin, can be of any size and are of two types, cavernous and capillary.^{1–3}

Angiogenesis probably plays a role in the vascular excess present. During the proliferative phase of the haemangiomas there is a high concentration of type IV collagenase and vascular endothelial growth factor. Basic fibroblast growth factor urokinase may be present. In contrast these markers are not present in the vascular malformations.

Other markers being evaluated include E-selectin and transforming growth factor α . According to Mulliken and Glowacki vascular lesions are classified either as a haemangioma or vascular malformation. Vascular malformations are structural anomalies of blood vessels without endothelial proliferation. By definition vascular malformations are present at birth and persist throughout life.⁴ They can be categorised according to the type of vessels involved (capillary, venous, arterial) and according to haemodynamic features (low flow or high flow). Staining for nerve bundles histologically distinguishes between a haemangioma and a vascular malformation. Nerve bundles are consistently present in the vascular malformation and absent in the haemangioma.⁵

A Doppler sonography may show high vessel density and high peak arterial Doppler shift in the haemangioma but not in the vascular malformations.^{6 7}

Figure 4 Decreased size of the lesion at fourth visit.

Figure 5 Reduced ulcer size at injection sites at fifth visit.

Treatment modalities of haemangioma consist of sclerotherapy, cryosurgery, electrocoagulation embolisation, radiation, curttage, compression, antimetabolites, corticosteroids, interferon α -2a and laser surgery.⁸

In the present case, the patient had not undergone any type of treatment since the perception of the first indications of the nodule and only sought treatment for aesthetic reasons. The affected patients generally seek treatment due to aesthetic or functional problems.^{8 9} In the case reported here, the tumour was located in the orbicular muscle of the upper lip, with a nodular appearance and the absence of pain symptoms. However, such tumours may be accompanied by pain.⁹

Figure 6 Complete regression of the lesion at final visit.

Sclerotherapy and surgery are the most often employed techniques in the treatment of hemangiomas of the mouth.

Sclerosing agent

This has been used in the management of haemangiomas for more than 100 years. Sclerotherapy is an effective and conservative technique for the treatment of benign vascular lesions. Sodium tetradecyl sulfate, an alkyl sulfate, has been described as a powerful almost ideal sclerosing agent and its administration is associated with minimal systemic and local reactions and sclerosing technique is contraindicated in cases of superimposed local infection or uncontrolled diabetes.¹⁰

The treatment employed in the present case was sclerotherapy. However, before choosing the adequate type of treatment for a haemangioma, a number of characteristics should be considered, such as duration, size, location and number of tumours, patient age and the haemodynamics of the tumour. Moreover, the viability of the intended technique must also be assessed.^{11 12}

Action of sclerosing agent

Sodium tetradecyl sulfate

↓

Localised inflammatory reaction

↓

With resultant obliterative thrombosis of haemangiomatous space

↓

Subsequent fibrosis of the endothelial spaces

↓

Regression of the lesion without affecting bone repair^{13 14}

Advantages of sclerosing agent

Simple and inexpensive

No loss of blood

No hospitalisation required

Disadvantages of sclerosing agent

Postoperative pain and the patient must be managed with moderate-level analgesic

Anaphylactic reaction

Tissue necrosis and sloughing (4%)

Temporary myoglobinuria (2%)

Airway compromise (1%)

Learning points

- ▶ Use of multiple weekly intralesional injections of 3% sodium tetradecyl sulphate as sclerosing agent is a safe mode of treatment for facial hemangiomas.
- ▶ The above technique offers the patient with considerable relief with minimal complications.
- ▶ Possibility of second surgery to correct residual deformity is still considered.

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Competing interests None.

Patient consent Obtained.

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