

STS SCLEROTHERAPY IN THE TREATMENT OF VASCULAR MALFORMATION OF TONGUE- A CASE REPORT

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ABSTRACT

INTRODUCTION: Vascular malformations in the head and neck region present a difficult management challenge. The first line treatment for most venous malformations (VMs) and some lymphatic malformations is Sclerotherapy. Injection sclerotherapy using STS offers an effective treatment option when managing patients presenting with venous malformations (VM) in the oral cavity. A single treatment may be adequate for small lesions but the procedure may be safely repeated until a satisfactory result is obtained. Here we present a case report of venous malformation at the tip of the tongue with 3% sodium tetradecylsulphate (STS) and describe our experience.

KEY WORDS

Sclerotherapy, venous malformation (VMs), Sodium tetradecylsulphate (STS)

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INTRODUCTION

Vascular malformations are congenital anomalies of the vascular system. Venous malformations are formed because of an arrested development of the venous system during the embryogenesis.¹ It is advised to classify vascular malformations according to the modified Hamburg Classification of congenital vascular malformations into: arterial malformations, venous malformations, arteriovenous malformations, lymphatic malformations, capillary malformations and combined vascular malformations (TABLE 1)²

They are benign lesions consisting of low flow ectatic endothelial lined venous channels. Familial and syndromic association of the vascular malformations are there, but the majority of cases are sporadic with an overall incidence of approximately 1/10 000.³

In the head and neck region VMs may be particularly difficult to treat due to a propensity to involve deeper structures such as the parapharyngeal space, muscles, orbit and bone. Functional effects of VMs in the head and neck may include swallowing difficulties, obstructive sleep apnoea and airway compromise.⁴

Vascular malformations are present in <1% of all babies born worldwide, while LM occur in 0.5%.^{4,5} Venous malformations (VMs) comprise 44-64% of all vascular malformations and arteriovenous fistulae make up 33%. Arterial defects are the least common, representing only 1-2% of all vascular malformations.

Formal resection of VMs presents an extremely difficult and potentially dangerous surgical challenge. Injection sclerotherapy (IS) has gained in popularity as a non-surgical management option. Injections may be performed transcutaneously or via endoscopic techniques.

We describe our experience of utilizing 3% sodium tetradecylsulphate percutaneously to treat patients with vascular malformations in the oral region as an alternative to surgical resection.

Table 1 The modified Hamburg Classification of congenital vascular malformations. Modified from Lee et al.

Primary classification

- Arterial malformations
- Venous malformations
- Arteriovenous malformations
- Lymphatic malformations
- Capillary malformation
- Combined vascular malformations

CASE REPORT

A 22 year old female reported in the Department of oral and maxillofacial surgery, Haldia Institute of Dental Sciences and Research, with a complaint of painless swelling at the tip of tongue involving both dorsum and the ventral surface (Fig. 1,2). On clinical examination it was found that the swelling is bluish in colour and of size 3×2 cm. The texture of the swelling was glossy and de-papillation of the area was noticed. Magnetic Resonance Imaging (MRI) helped confirm the diagnosis and display the extent and relationship of the lesion with surrounding structures.⁵ The treatment plan decided was to treat the malformation with 3% sodium tetradecylsulphate (Setrol) mixed with 2% lignocaine with 1:80000 adrenaline delivered into the affected area with an insulin syringe after skin prick test. Patient was advised to take analgesics if required and recalled after 2 days.

On first follow up of the treatment we noticed that the swelling was reduced in size and also lost its bluish tinge and the swelling was covered with white slough (Fig 3). No percutaneous injection was

injected and instead we decided to wait and watch and the patient was recalled after 2 days. After 5th day on the 3rd follow up we noticed that the swelling has regressed completely and normal texture and color of the affected area has returned (Fig 4, Fig 5).

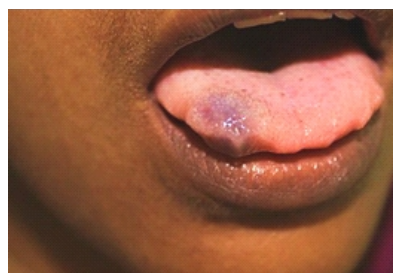
The outcome of the treatment showed re-papillation of the area and normal margins without any deformity, eliminating the need of any surgical intervention in a more conservative way.

DISCUSSION

A handful of management options exist for treating VMs. Management options will depend upon the site and size of the lesion, patient factors such as co-morbid conditions and availability of particular techniques and materials.⁶ There is no fixed treatment modalities for treating vascular malformations and patient may require the need of various treatment modalities for complete regression of the malformation.⁷ So a multidisciplinary approach is required to treat a VMs in an appropriate setting. Surgical excision was primarily the treatment of choice and may still offer the best treatment option where possible. Over recent years there has been a move toward less invasive therapies. This is largely owing to the fact that surgery is often difficult when there is diffuse involvement of critical structures and may be dangerous due to severe haemorrhage. Modification of medications may also be helpful. For example, VMs may expand during adolescence and due to the angiogenic effects of oestrogen therapy,



Pre-operative front view
Profile Photograph



Pre-operative photograph of
lesion Dorsum Surface (Fig 1)



Pre-operative photograph of
lesion Ventral Surface (Fig 2)



Picture of lesion after 2 days
of STS injection (Fig 3)



Clinical picture of lesion
on 5th day (Fig 4)



Clinical picture of lesion
on 5th day (Fig 5)

progesterone-only oral contraceptive agents may be preferred in females with problematic lesions.

LASER therapy has been shown to be effective for superficial cutaneous and mucosal VMs. A number of authors have described their experience of using the Nd:YAG LASER for surface lesions but also using interstitial probes to treat submucosal disease up to a depth of approximately 8 mm.

STS is a detergent based sclerosant that acts on endothelial lipid molecules causing surface damage and collagen exposure. This creates an inflammatory response with resultant fibrosis, scarring and shrinkage of the VM with minimal thrombus formation⁸. It has been used extensively since the 1940s for the treatment of other low flow vascular lesions such as varicose veins and oesophageal varices. STS has a well documented safety profile and is generally preferred over ethanol as an initial option for sclerotherapy. The injection of STS is thought to be more beneficial by preventing washout and layering whilst providing optimal sclerosant contact with endothelial surfaces within the VM over a period of up to several weeks.

In our case report only 1 injection was required and after only single treatment with STS, complete resolution of the swelling was observed. Risks of using STS are similar to those of other sclerosants and include pain, swelling and local ulceration. Rarer complications include extravasation, anaphylaxis and cardiovascular collapse.^{9,10} But no significant complication is noticed in our case.

CONCLUSION

Injection sclerotherapy using STS offers a safe and effective treatment option when managing patients presenting with head and neck venous malformations. It is cheap, accessible and avoids the risks of complex surgical intervention. A single treatment may be adequate but the procedure may be safely repeated until a satisfactory result is obtained.

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