

## Venous Malformation in the Lower Lip Treated with Sclerotherapy and Surgery–A Case Report

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### ABSTRACT

Vascular malformations in the maxillofacial region present several challenges; Sclerotherapy with ethanolamine oleate (EO) is an effective and recommended treatment modality. A 6-year-old girl presented to our institution with an enlarged lower lip and was diagnosed as a low-flow venous malformation. 5% EO was injected as the sclerosing agent. The patient underwent a total of 4 sessions of sclerotherapy, separated by intervals of 2 weeks and when the lesion had decreased in size surgical recontouring under general anesthesia was performed. Postoperative aesthetic and functional outcomes were excellent without recurrence. The findings of this case suggest that sclerotherapy followed by surgery is a very efficient method of treatment of venous malformation.

**Key words:** Venous malformation, Lip, Ethanolamine oleate

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### INTRODUCTION

Vascular anomalies are abnormalities of blood vessels or endothelial cells. The two most common types are hemangiomas and vascular malformations which may appear to be remarkably similar but differ in their pathogenesis and clinical behavior and subsequently the treatment modalities. Vascular malformations are irregular vascular networks defined by their blood vessel type; they are present at birth, slow-growing, infiltrative, and destructive. Intervention is usually required for almost all vascular malformations while may be needed for nearly 40% of hemangiomas [1].

### CASE PRESENTATION

A 6-year-old girl presented to the Department of Oral and Maxillofacial Surgery at Khartoum Teaching Dental Hospital complaining of a diffuse swelling in the lower lip. The swelling had been noticed by the patient's mother at birth, it started as a small nodule that increased in size gradually

with time, No history of trauma was given by the parents. The lesion was not associated with pain or pus discharge, it bled occasionally due to trauma. The patient did not undergo any treatment as the case was misdiagnosed by another surgeon as being a case of haemangioma that may undergo spontaneous involution and should be conservatively monitored without intervention.

On examination, a diffuse swelling involving the whole lip was present resulting in it prolapse. On palpation, the swelling was ill-defined, soft in consistency and non-tender. Affected mucosa was pinkish in color, with a smooth and thickened surface (Figure 1A).

### Differential diagnosis

The differential diagnosis was either: vascular malformation or hemangioma. However vascular low-flow malformation was considered due to the pinkish-purple aspect, consistency, and absence of vascular pulsation. CT Angiography showed a flow through the lower lip and the feeding vessel was the inferior labial vein (Figure 1B). The lesion was diagnosed as a low-flow-type vascular malformation (venous malformation). The treatment plan was to reduce the size of the lesion using a sclerosing agent followed by



Figure 1A: Pretreatment findings-Frontal view and lateral view.



Figure 1B: Pretreatment findings-CT angiogram showing venous malformation with the feeding vessel.

surgical recontouring of the lip.

### Management

Sclerotherapy was performed using 5% ethanolamine oleate. An infiltration of local anesthesia (2% Lidocaine) was given with rubbing a cotton swab on the surface of the anomaly to minimize puncture discomfort, then the drug was injected with a Short Needle Insulin Syringe with manual pressure on the lip during injection to interrupt blood flow and prevent leakage of the sclerosing agent. The sclerosing agent was administered 4 times at 2 weeks of interval. Each time, 2 ml of the sclerosing agent was injected. A decrease in the size of the lesion with localized fibrosis was apparent after each session.

Total excision of the residual lesion was performed under general anesthesia. Superficial mucosa and muscular layer were excised along with the lesion by locally ligating the inferior labial vessels, lip plasty was performed, Bleeding was locally controlled with suction and diathermy, the defect was primarily closed. The patient has since been followed, with no signs of recurrence (Figure 2).

### DISCUSSION

Vascular malformations are abnormal development of blood vessels. Clinically lesions present as soft, non-pulsating mass. The lesions fill with dependency and are compressible [2,3]. Patients' complaints usually include progressive



Figure 2A: Post treatment: Extraoral frontal views.



Figure 2B: Post treatment: Intraoral view.

growth, disfigurement, pain, shortness of breath, and dysphagia [4].

Sclerotherapy is an effective and minimally invasive technique, it is the first-line treatment for vascular malformations, providing healing rates of 70% -100%. The low flow rate of venous malformation makes sclerotherapy an effective treatment, allowing effective concentrations of sclerosing agents to remain nearly constant when delivered directly to the lesion [5-8].

Although many sclerosing agents are available, such as sodium morrhuate, sodium psyllate, Ethanolamine oleate is particularly useful because of its low toxicity compared to other sclerosis inducing agents [6,9,10]. Ethanolamine oleate is an anionic detergent when applied intravenously damages the endothelium by its detergent action and induces inflammation and fibrosis by the formation of intravascular thrombi [11].

Previous studies on the effectiveness of sclerotherapy with ethanolamine oleate confirm that it is a well-tolerated and sufficient method with a high success rate and high patient satisfaction. It has good sclerosing action, as well as its minor adverse effects [5,12-18]. Even when the sclerotherapy with monoethanolamine reduced the lesion only partially, it provided good preparation for further surgery either for excision of residual lesion or esthetic improvement by excision of scar tissues [19,20].

Although benign lesions, venous malformation can present a diagnostic and management challenge. A multidisciplinary approach

is strongly recommended as there is no single superior treatment modality. Surgery remains one of the most superior treatment options and may offer a cure for localized venous malformation. However, excision of complex lesions remains difficult secondary to intraoperative bleeding and undesirable functional and cosmetic outcomes. On the other hand, although sclerotherapy is one of the most effective treatment methods, patients with large lesions, sclerotherapy alone is usually inadequate to keep the lesion under control, and surgery is then considered to remove the residual lesion. Therefore, the best treatment protocol is to perform sclerotherapy initially to control the lesion progression then should be followed by surgery [1,3,4,21].

### CONCLUSION

This case demonstrates that sclerotherapy of venous malformation by injection of 5% ethanolamine oleate into the lesion was an effective treatment. It provided rapid and safe involution of the lesion with satisfactory outcomes. Misdiagnosis of vascular lesions can lead to mismanagement and delays treatment.

### ETHICAL APPROVAL

Treatment consent: The patient's parents formally consented with the procedures and were informed about the possible complications of the procedures.

### CONSENT FOR PUBLICATION

The authors used non identifiable photographs and no identifying details were mentioned in the report.

### CONFLICT OF INTEREST

The authors have disclosed no potential conflicts of interest, financial, commercial or otherwise.

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