

ANGIOEMBOLISATION

This minimally invasive complex treatment method is mainly used for AVM. In this technique, fine catheters are introduced within the blood vessels and advanced to the centre of the AVM (nidus) with placement of liquid embolic agents (alcohol, glue, Onyx) to help in the reduction of the blood flow.

Multiple sessions of angioembolisation are often required to achieve significant reduction in the size of the AVM.

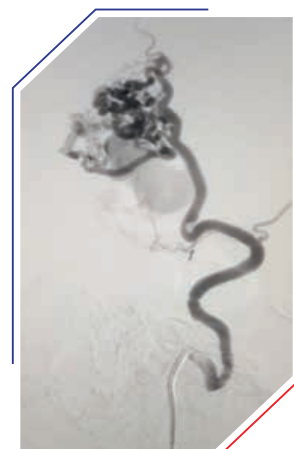


Figure 5: DSA shows AVM nidus of the ear

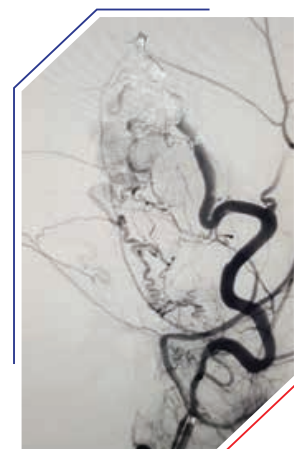


Figure 6: Successful glue cast with in AVM nidus

SURGERY

Surgery is usually restricted to treat lesions where total excision would be possible without causing local damage to important neurologic or vascular tissues.

Some patients with AVM may require angioembolisation followed by surgical excision to provide complete cure.

SUMMARY

Treatment of vascular malformations is challenging and often involves various therapeutic options. Multidisciplinary approach with full integration of open surgical and endovascular therapy has become the mainstay of treatment.

ISSVA: International Society for the Study of Vascular Anomalies; STS: Silver thiosulfate



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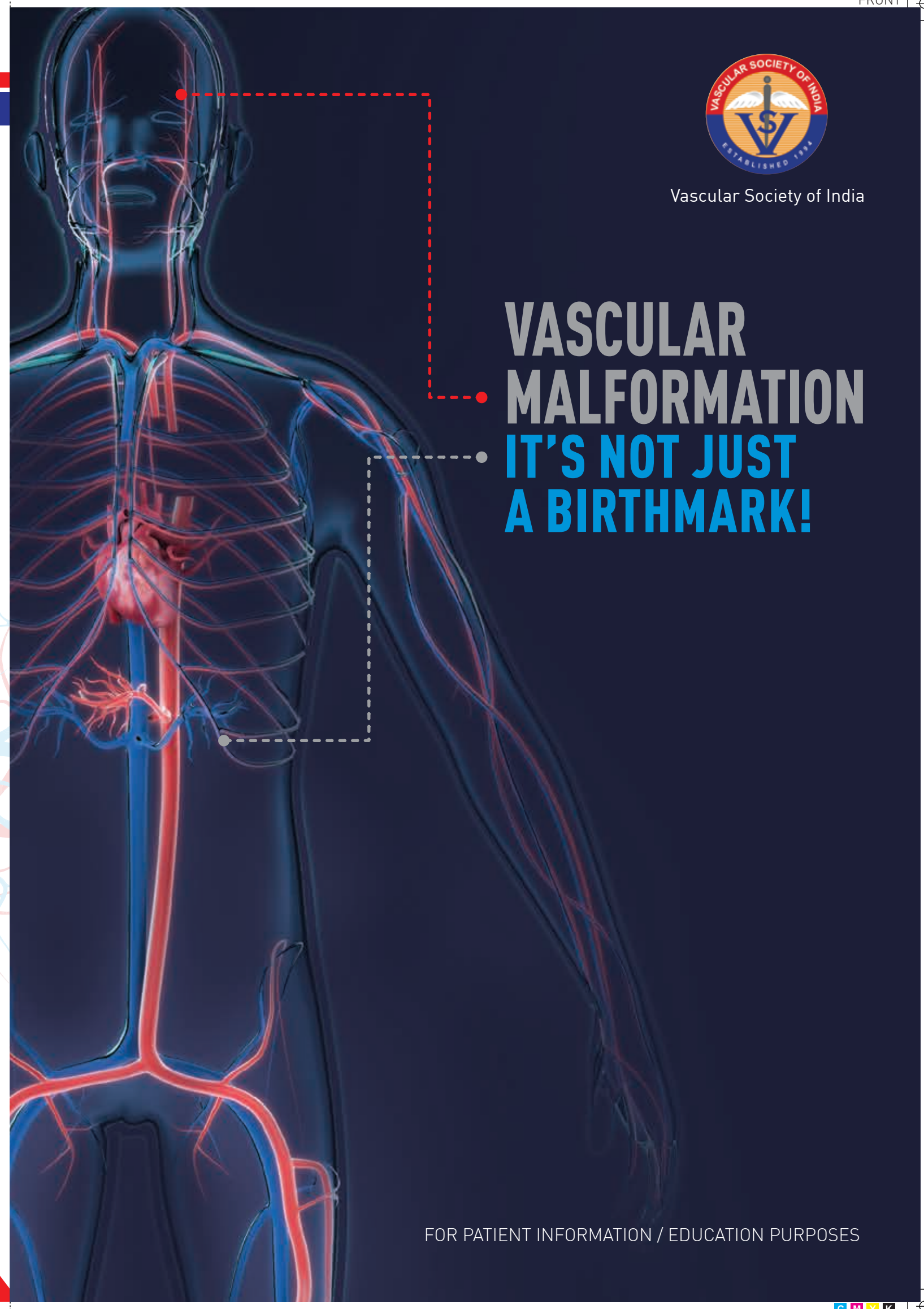
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VASCULAR MALFORMATION IT'S NOT JUST A BIRTHMARK!



FOR PATIENT INFORMATION / EDUCATION PURPOSES

VASCULAR MALFORMATION



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INTRODUCTION

Congenital vascular malformations (often termed as birthmarks) are one of the most challenging subgroups of diseases treated by vascular surgeons and interventionalists. There are a number of controversies and differences in the diagnosis or treatment of vascular malformation.

CLASSIFICATION

Currently, International ISSVA classification system is widely accepted and utilised to categorize vascular anomalies into two basic types:

- **Vasoproliferative or vascular neoplasms such as hemangioma**

- **Developmental vascular abnormalities called congenital vascular malformations (CVMs)**

CVMs are a large group which include venous (VM), arterial (AM), capillary (CM), and lymphatic (LM), as well as arteriovenous (AVM) malformations.

The clinical importance of classification is important to reduce the confusion in treatment principles.

CLINICAL FEATURES

Infantile **hemangiomas** which are commonly seen after birth and appear as strawberry mark do not require immediate intervention and can undergo spontaneous involution (shrinkage) or recovery (60%–70% involution by the age of two years and 90% by the age of 7 years).

Venous malformations may appear as bluish, soft compressible masses (subcutaneous or mucosal) without any bruit (spread)/thrill. The presence of thrill is typical of **AVM**. Lymphatic malformations may present as cystic variants (lymphangioma) or soft but non-compressible masses (microcystic variety).

Some vascular malformations present with swelling, pain, ulcer or bleeding depending on the location and extent of the malformation.



Figure 1: AVM of foot with an ulcer



Figure 2: Mucosal venous malformations



Figure 3: Finger arteriovenous malformation



Figure 4: Finger arteriovenous malformation after treatment

DIAGNOSIS

After a clinical examination, Doppler ultrasound is the next diagnostic step, following which an MRI or a CT angiography may be performed as per your doctors' advice.

GENERAL TREATMENT PRINCIPLES

- Not all CVMs need aggressive treatment. They can be managed conservatively using compression stockings, if possible.
- They are slowly progressive and may show sudden increase during puberty or post pregnancy.
- CVMs are best managed by a multidisciplinary approach utilising a combination of nonsurgical, surgical and endovascular methods.

SCLEROTHERAPY

This is the mainstay of treatment of most CVMs, in which single or multiple sessions of injections of sclerosant solution (STS, bleomycin or alcohol) are given in the lesion under Doppler or fluoroscopy guidance.

Although initially patient can feel hardness or bruising at the injection site, this treatment can eventually help to reduce the size of the swelling.