

MANAGEMENT OF ARTERIO-VEINUS MALFORMATION IN CHILDREN- A CASE REPORT

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ABSTRACT

Arteriovenous malformation is the most common type of congenital vascular malformation. However, common but less commonly seen in pediatric age group. This can lead to pain and discomfort in the patient and can lead to severe local and systemic complications. Although present from birth, they are not always clinically evident until later in life and tend to grow in concert with the child and without spontaneous regression. In modern science, microsurgical resection, embolization, and radiosurgery are management lines.¹⁻³ In Ayurveda, Arteriovenous malformation can be co-related with *Siragata Vata*. The main symptoms are venous congestion (*Sira -Akunchan*) and vein tortuosity (*Vakrikarana*), causing local congestion⁴⁻⁶

In this case, a 5-year-old male child diagnosed with arteriovenous malformation overlying the left foot dorsal as well as plantar aspect has been treated with ayurvedic remedies to alleviate clinical features of the condition in children.

Keywords: Arterio-venous malformation, *Siragata Vata*

INTRODUCTION

Arteriovenous malformation (AVM) is a congenital condition characterised by an abnormal connection

between arteries and veins, bypassing the capillary system. It is the most common type of congenital

vascular malformation, but the prevalence of AVM in the pediatric population is relatively rare compared to adults. Pediatric AVMs are often underdiagnosed because they are usually asymptomatic at birth and throughout early childhood. Many pediatric AVMs are only discovered when they rupture, causing haemorrhage or other complications, which can be life-threatening.

These malformations are present at birth, although symptoms may not manifest until later in life. When symptomatic, pediatric AVMs can lead to significant morbidity. Symptoms can range from pain and discomfort due to localised pressure effects or tissue damage to more severe consequences such as neurological deficits, seizures, or even life-threatening haemorrhages, depending on the location of the AVM. The abnormal vascular connections can lead to a high-pressure, low-resistance flow pattern that strains the surrounding tissues and causes local and systemic complications.

AVMs consist of a complex tangle of abnormal blood vessels where arteries directly connect to veins without an intervening capillary bed. This direct connection causes the arteries to pump blood under high pressure into the veins, which are not equipped to handle such pressure. Over time, this can lead to the expansion of the malformation and increased risk of rupture.¹⁻³

Types: There are two types of AVMs:

- Brain arteriovenous malformations — form in the brain, brainstem, and spinal cord, inside the brain tissue, or on the brain's surface.
- Peripheral arteriovenous malformations — can form anywhere in your body

Case presentation

A 5-year-old male child came to OPD with a presenting complaint of pain and swelling over the lateral and dorsal aspect of the left foot since infantile; as the child grew older, tortuosity increased, which caused difficulty in walking.

History of Present Illness- The patient started complaining when he started walking. He was under treatment of analgesics and antibiotics from a pediatrician, but there was no significant improvement. So, they came to our hospital for further management.

Birth History-FT/LSCS/TWIN 1 /SGA/2Kg

There was no H/O of NICU Stay

History of past illness-Not Significant

Personal History

- Appetite-Normal
- Sleep-Disturbed
- Bowel-Normal
- Bladder-Normal

General Examination

Height- 105cm Weight-18kg

Temp-Afebrile Pulse -100/min

Systemic Examination

CNS-conscious and well-oriented

CVS-s1s2 normal, no abnormal heart sound heard

RS-AEBE clear

P/A-soft and non-tender

Investigation

USG s/o arteriovenous malformation overlying the left foot dorsal and plantar aspect.

Colour Doppler s/o non-complicated arteriovenous malformation overlying left foot dorsal and plantar aspect.

Ashtavidha pariksha

Nadi-Vata-Pitta

Mala-Prakrut

Mutra-Prakrut

Jivha-Niram

Shabda-Spashta

Sparsha-Anushna

Druk-Prakrut

Akruti-Madhyama

Treatment given

Drug	Dose	Duration	Relation with Food	Advice
Gokshuradi Guggulu	250mg	15 days	After food	With lukewarm water
Raktapachak vati	250mg	15 days	After food	With honey
Giloy Ghanavati	250mg	15 days	After food	With honey
Mahamanjsthadi Kashayam	5ml	15 days	Before food	With lukewarm water

Medication after 15 days-

Advised to continue Maha Manjisthadi Kashayam twice a day along with Maha Tikta Ghrita with Anantmoola Churna (125mg)+Giloy Satva(125mg) early morning for 1 month considering the commencement of Sharad Rutu (autumn season) causes Rakta vitiation due to Pitta Prakopa.

DISCUSSION

As the consideration of AVM was *Siragata Vata* and as per symptom venous congestion (*Sira akunchana*) and vein tortuosity (*Vakrikarana*) and pain while walking due to pressure, Vata Pitta and Rakta shamak formulations have been chosen to treat this case. After 15 days, there was improvement in pain while walking and reduced venous congestion (swelling).

On the first visit, the following medicines were used: Gokshuradi Guggulu, Raktapachak Vati, Giloy Ghanvati, and Mahamanjsthadi Kashayam.

Gokshuradi Guggulu⁷⁻⁹ has anti-inflammatory, analgesic, and Rasayana properties, potentially beneficial in managing arteriovenous malformation (AVM) symptoms. Balancing Vata and Kapha doshas may help alleviate symptoms like venous congestion (*Sira Akunchana*) and vein tortuosity (*Vakrikarana*) related to AVMs. Ingredients such as Gokshura (*Tribulus terrestris*.Linn) may enhance circulation and support tissue health, potentially reducing discomfort and the risk of complications.

Raktapachak Vati,¹⁰⁻¹² is known for its blood-purifying properties and is traditionally used to manage conditions associated with Rakta (blood) vitiation. In the context of arteriovenous malformation (AVM), Raktapachak Vati may help alleviate symptoms related to venous congestion and promote better circulation by detoxifying the blood and enhancing

the quality of Rakta Dhatu (blood tissue). Its action on reducing Ama (toxins) and balancing Pitta dosha can potentially mitigate the complications arising from AVMs, such as pain and discomfort.

Raktapachak Vati¹³⁻¹⁵ containing Patola, Sari-va, Musta, Patha, and Katurohini, has Tikta Ras predominance and Pitta and Rakta Dosha Shamak properties.

Giloy Ghanvati¹⁶⁻¹⁹ (*Tinospora cordifolia*.Willd), is known for its anti-inflammatory, immunomodulatory, and blood-purifying properties, making it beneficial in managing arteriovenous malformation (AVM). Its anti-inflammatory effects help alleviate swelling, and discomfort associated with AVMs, while its ability to modulate immune responses prevents complications. Additionally, as a blood purifier, it helps detoxify the Rakta Dhatu (blood tissue), potentially reducing the risk of systemic complications. Furthermore, its rejuvenation (*Rasayana*) properties promote overall tissue health and healing, enhancing the body's resilience against vascular abnormalities.

Mahamanjsthadi Kashayam²⁰⁻²⁴—Mahamanjsthadi Kashayam is known for its potent Rakta Pasadaka (blood-purifying) and anti-inflammatory properties, making it beneficial in managing arteriovenous malformation (AVM) conditions. The ingredients, primarily Manjishta (*Rubia cordifolia*.Linn), help detoxify the blood and support the healthy function of the Rakta Dhatu (blood tissue), which can alleviate symptoms such as swelling, and discomfort associated with AVMs. Additionally, its action on balancing Pitta Dosha may help reduce local inflammation and prevent complications related to vascular anomalies.

CONCLUSION

The study highlights the clinical efficacy of Ayurvedic treatment in managing arteriovenous malformation (AVM) in children, effectively addressing the

condition's clinical features. While surgical intervention is typically indicated for AVMs, the conservative approach was favoured due to the patient's age, allowing for safe and effective management. The Ayurvedic formulations used demonstrated significant improvement in symptoms without any adverse effects.

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