



A high-flow vascular malformation of abnormal and irregular vascular networks **shunting blood** directly from the **arterial** to **venous** system.

EPIDEMIOLOGY

- ~1.5% of child vascular anomalies.
- ~50% **oral & maxillofacial** but occurs anywhere.
- Always present at birth**, but only apparent in 40-60% of cases at birth.
- 10% become apparent in adolescence.
- Male: female ratio **1:1**.

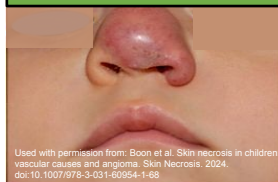
PATHOPHYSIOLOGY

- Likely persistence of primitive arteriovenous connections or new vascular formations.
- Occurs in **3rd week of embryogenesis**.
- Absence of small capillaries results in inadequate oxygenation & destruction of surrounding tissues

DIAGNOSIS

- History** and **physical exam**.
- Hand-held **U/S Doppler**: fast-flow & shunting.
- MR-angiography or CT-angiography.

AVM



Used with permission from: Boon et al. Skin necrosis in children: vascular causes and angioma. Skin Necrosis. 2024. doi:10.1007/978-3-031-60954-1-68

INFANTILE
HEMANGIOMA



DermNet

CLINICAL FEATURES

- Always **present at birth**; not always apparent.
- Well-demarcated **pink-blue** lesion.
- Palpable **warmth, pulse, thrill**, audible **bruit**.
- Growth** increased by puberty and trauma. Rate is unpredictable.
- Does not involute.
- Infiltrative** and destructive.

Schobinger Stages of AVM

Stage	Clinical findings
I: Quiescence	Pink-blue, warm, shunting on Doppler U/S
II: Expansion	Enlargement, bruit, thrill, pulsing
III: Destruction	Bleeding, pain, ulceration
IV: Decompensation	Destruction to surrounding tissue, cardiac failure

DDx: INFANTILE HEMANGIOMA

- Most common tumor in infancy.
- Appears **shortly after birth**, **initially flat, erythematous**, becomes raised during rapid growth 0-6 months of age, and involutes.

COMPLICATIONS: Venous or arterial hemorrhage. Skin or mucosal erosion into a superficial lesion.



MANAGEMENT

Intervention determined by: (1) size and location, (2) patient age, and (3) Schobinger stage:

Non-operative: observation

- Commonly for small, clinically stable, asymptomatic lesions.
- Topical hydrated-petroleum to prevent desiccation/ulceration.
- Long-term follow-up with multidisciplinary team.

Operative: embolization, resection, or combination

- Schobinger stages 3 and 4.
- Preoperative embolization to ↓ blood loss.
- Wide excision necessary to minimize recurrence.
- Reconstruction with flaps post-resection often necessary.

Treatment and timing are often individualized to the patient and the extent of disease.

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Conné Lategan (Medical Student, University of Alberta), Dr. Regan Guilfoyle (Pediatric Plastic Surgeon, University of Alberta) for www.pedscases.com