

# Cavernous Venous Malformation (Hemangioma)

- Venous vascular malformation of orbit characterized by endothelial-lined cavernous spaces
- Pseudo-encapsulated morphology distinguishes orbital cavernous venous malformation from venous malformations elsewhere in the head & neck
- Synonymous with cavernous "hemangioma" (misnomer)

# Cavernous Venous Malformation (Hemangioma)

## ■ Clinical Issues

- Slowly progressive painless proptosis
- Most common isolated orbital mass in adults
- Female predominance; faster growth during pregnancy
- Excellent prognosis; rare recurrence after surgery

## ■ Diagnostic Checklist

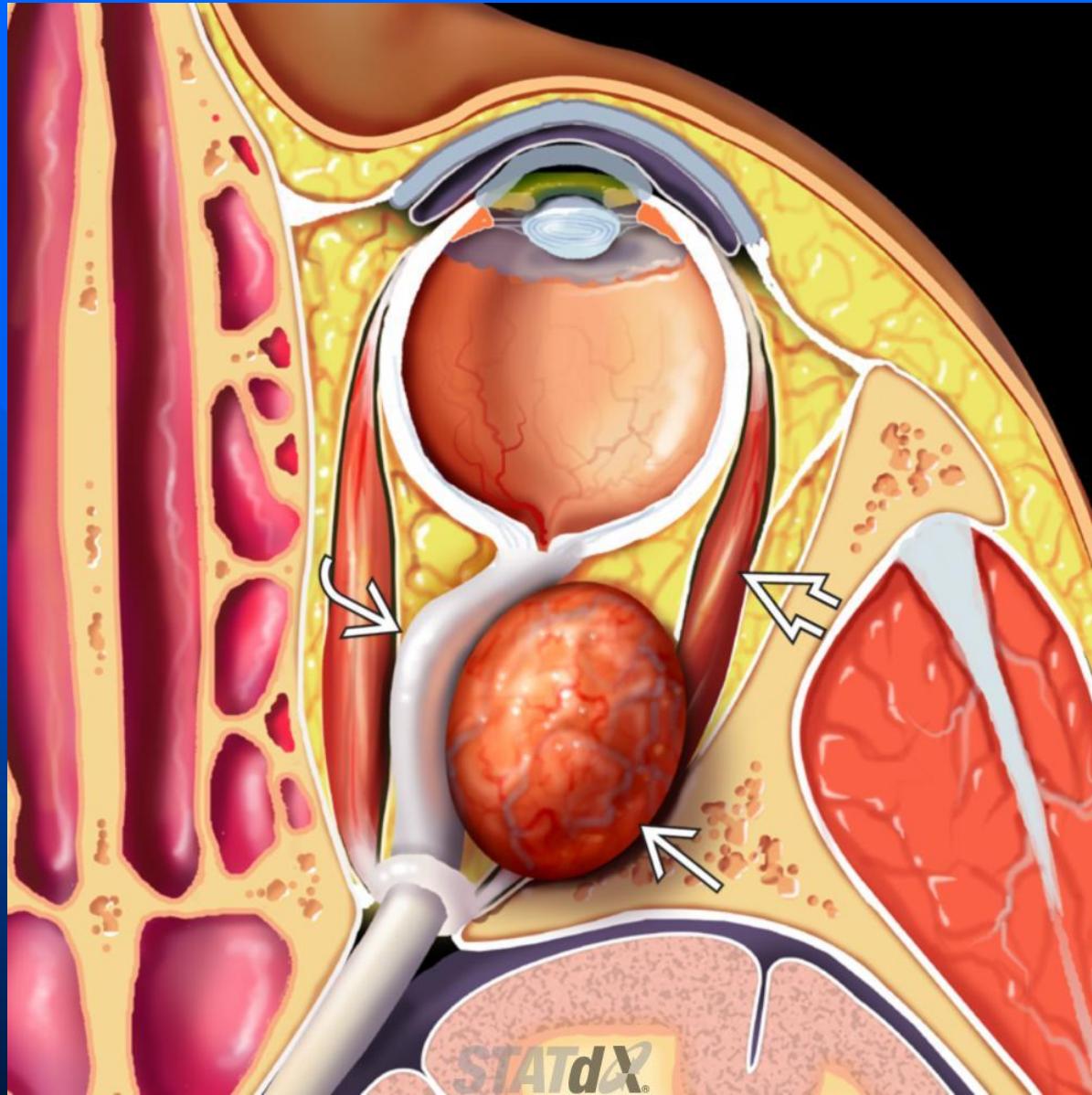
- Often discovered incidentally during brain MR
- "Hemangioma" is common term but misnomer
- Patchy dynamic enhancement is characteristic

# Pathology

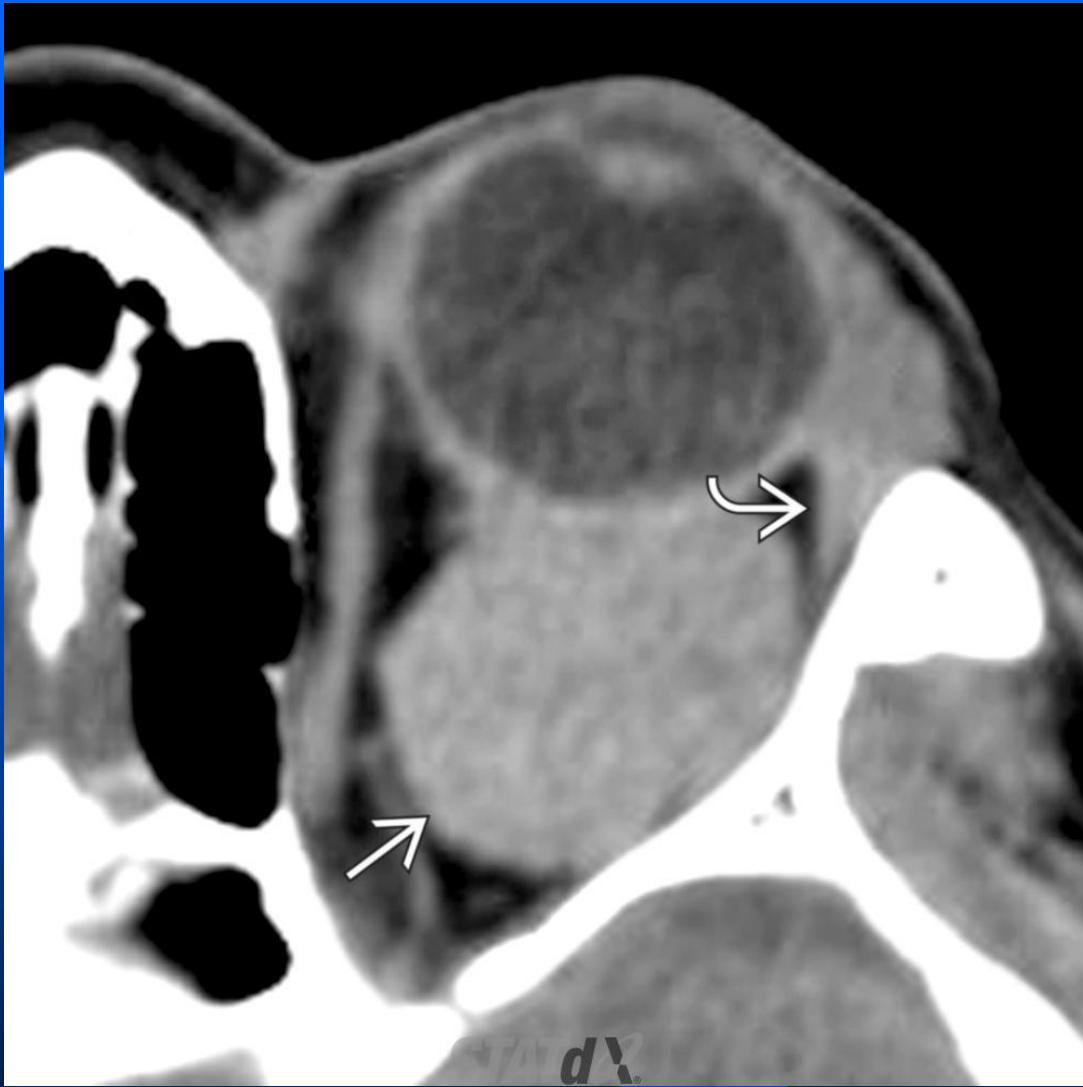
- Slowly growing vascular malformation
- ISSVA classification as slow-flow venous lesion
- Dilated vascular channels of thin-walled sinusoidal spaces, flattened endothelial cells, scant fibrous connective stroma
- Pseudocapsule with surrounding compressed tissue
- No evidence of cellular proliferation

# Imaging

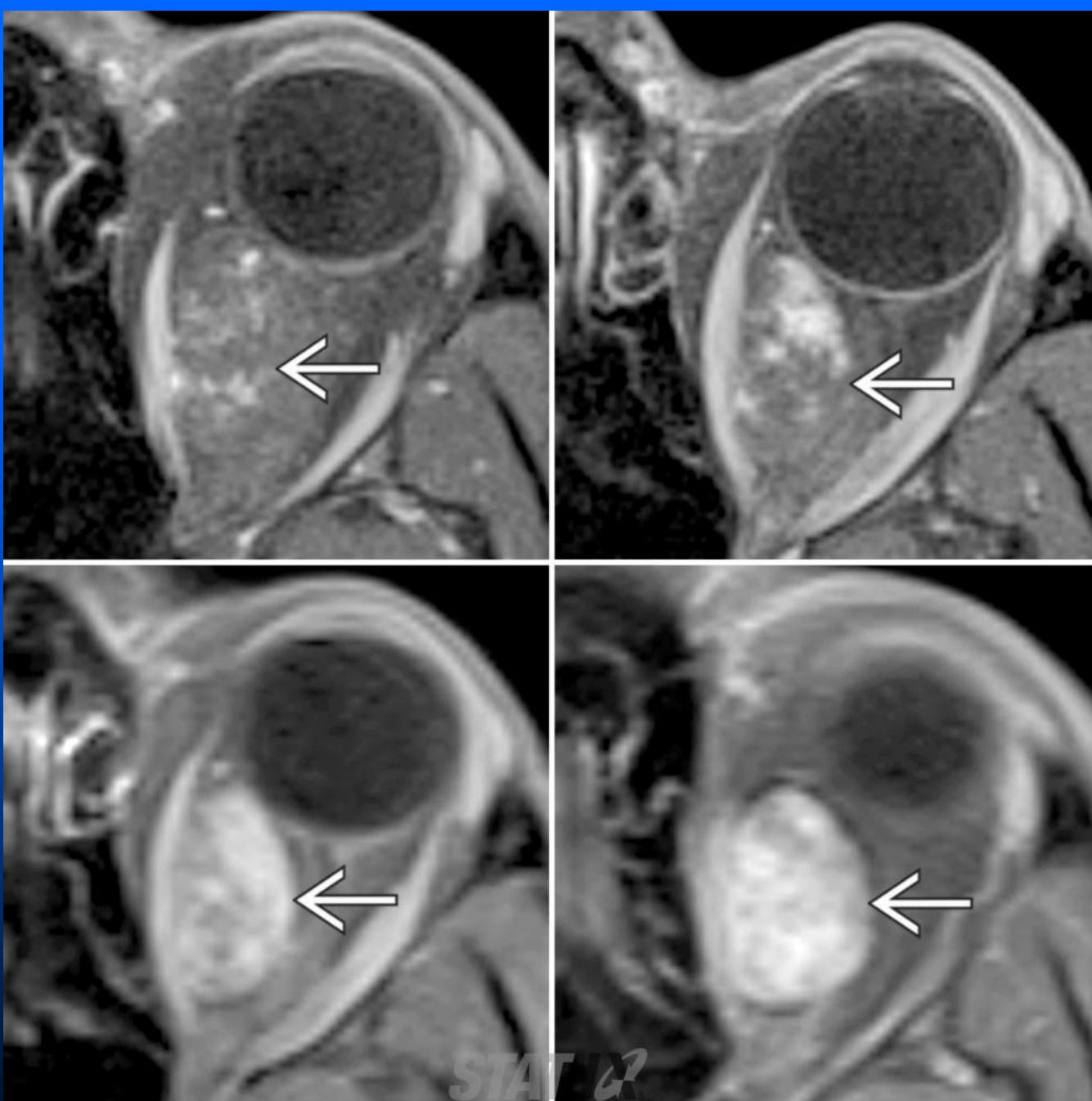
- Solid enhancing intraorbital mass
  - Most intraconal, usually lateral
  - Ovoid or round, sharply marginated
  - Pseudocapsule of compressed surrounding tissue
- CT
  - Benign remodeling of bone in larger lesions
- MR
  - T2 hyperintense; internal septations may be visible
  - Characteristic dynamic enhancement
    - » Heterogeneous early patchy central enhancement
    - » Fills in homogeneously on delayed images



Axial graphic through the orbit shows an ovoid, well-demarcated, intraconal mass (white solid arrow) that displaces the optic nerve (white curved arrow) and adjacent lateral rectus muscle (white open arrow). Note the lack of adjacent structure invasion.



Axial NECT shows a well-demarcated, ovoid, slightly hyperdense mass centered in the lateral aspect of the left orbit (white solid arrow). The lateral rectus muscle is seen draping around the lateral margin of this intraconal mass (white curved arrow).



Axial T1 C+ FS MR demonstrates progressive enhancement of a vascular mass in the medial left orbit (white solid arrow). Serial scans were obtained over the course of several minutes, from earliest (top left) to latest (bottom right) following contrast injection.

