

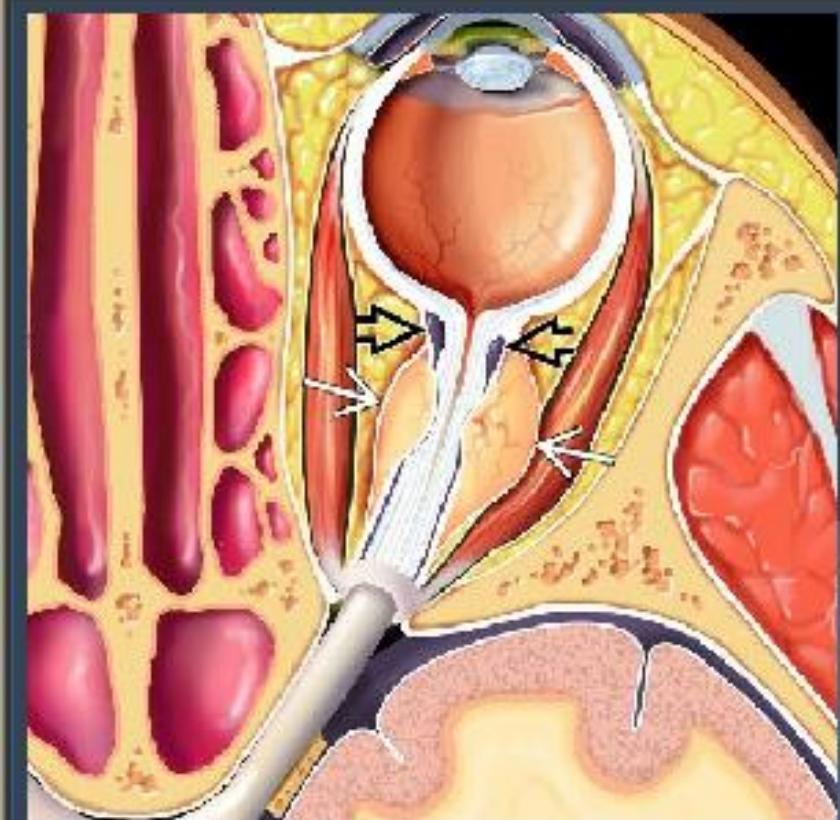
# Imaging

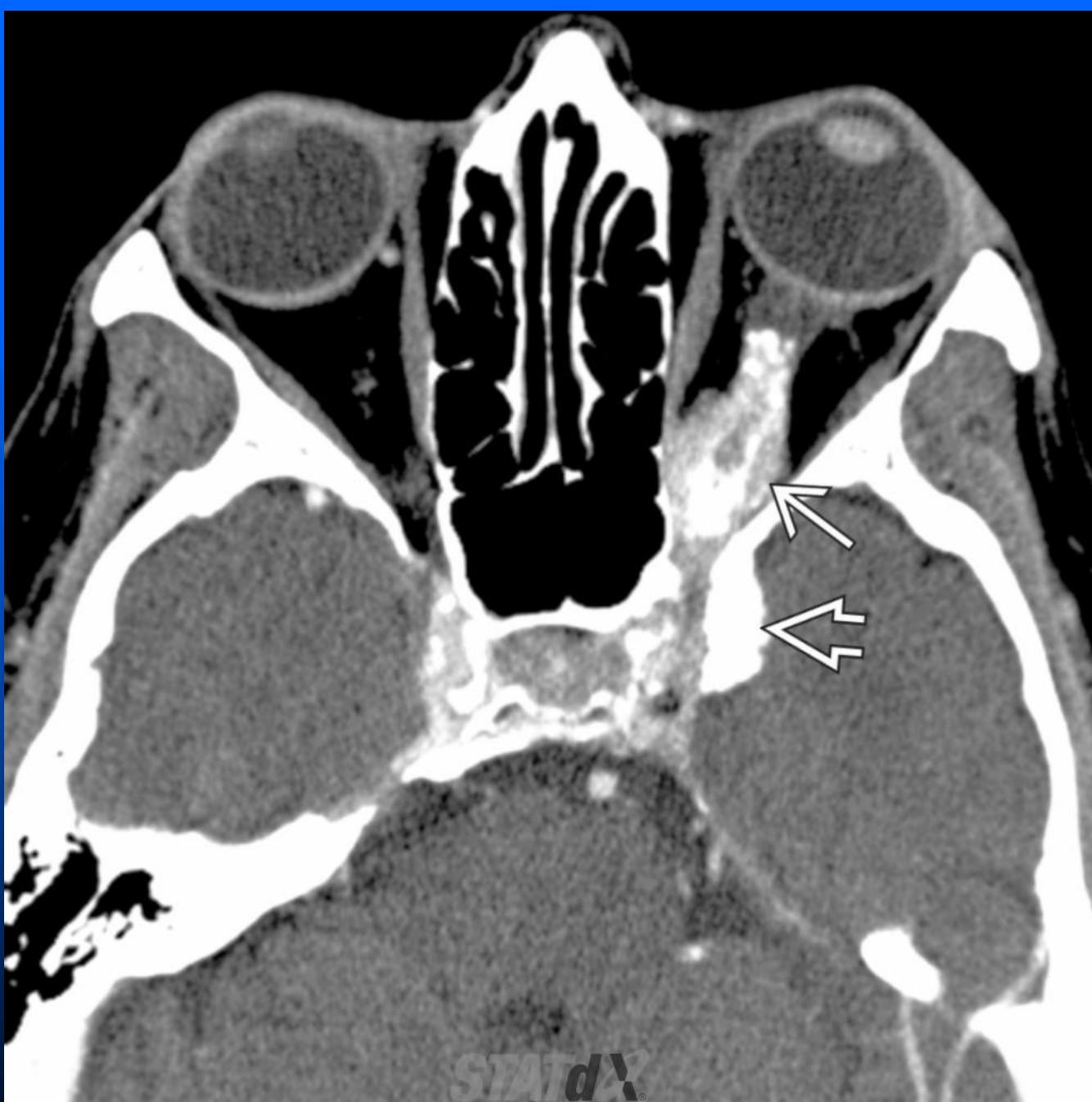
- Best diagnostic clue: Enhancing mass surrounding intraorbital optic nerve with calcification
- "Tram-tracking" appearance = tumor enhancement or calcification on either side of optic nerve
- Linear or punctate calcification is characteristic

# Clinical Issues

- Most common signs/symptoms: Slow, painless progressive unilateral vision loss and proptosis
- Optociliary venous shunting in association with optic disc changes is very suggestive of ONSM
- Stereotactic radiotherapy currently considered 1st line therapy for patients with preservable vision but progressive impairment

# ON Meningioma





Axial CECT shows enhancing optic nerve sheath meningioma (ONSM) (white solid arrow) with punctate and linear calcification surrounding left optic nerve complex extending through orbital apex. Note adjacent hyperostosis (white open arrow).



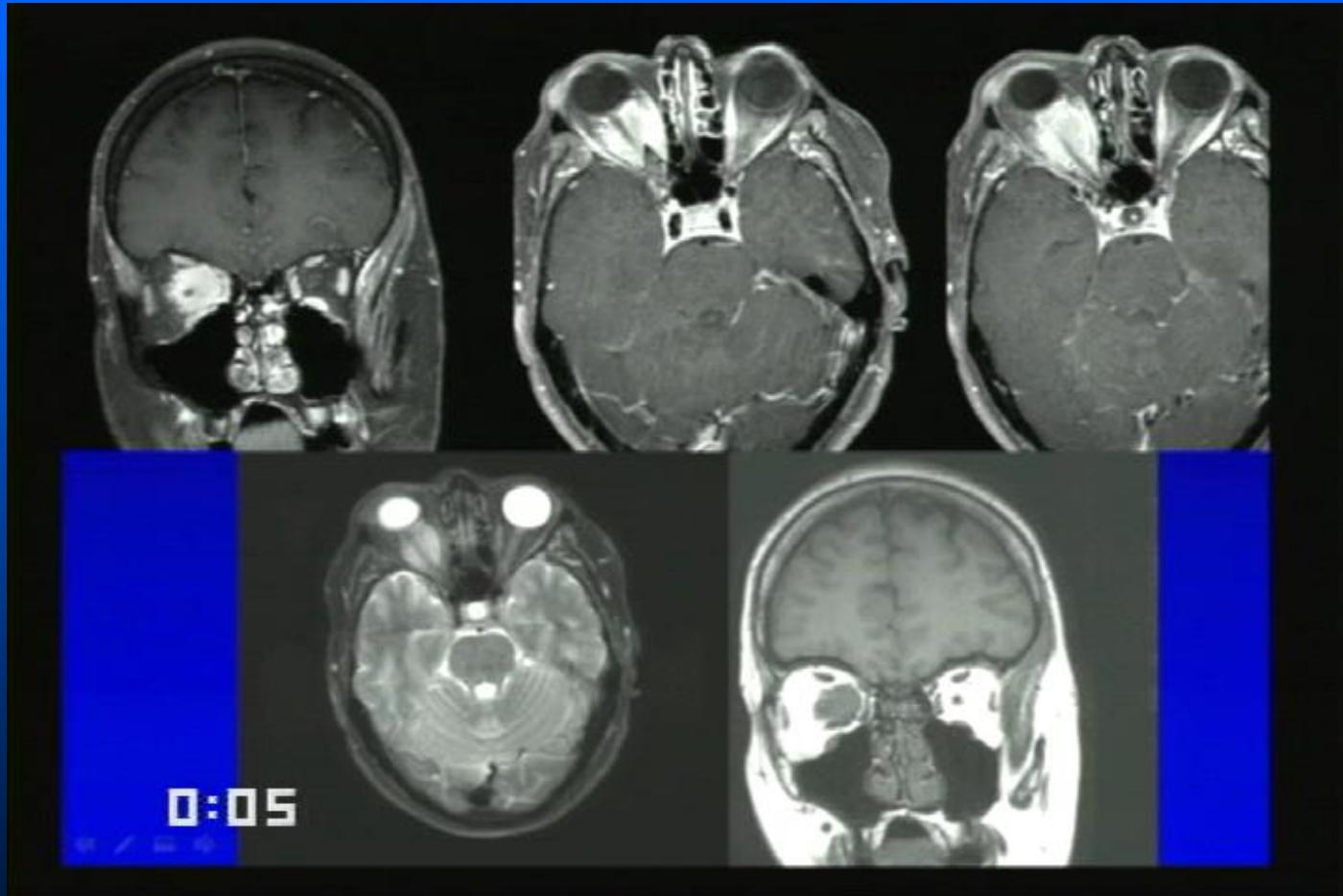
Coronal T1WI C+ FS MR shows a bulky enhancing ONSM eccentrically surrounding optic nerve (white solid arrow). A small contralateral meningioma is also present (white open arrow).

# Optic nerve sheath meningioma

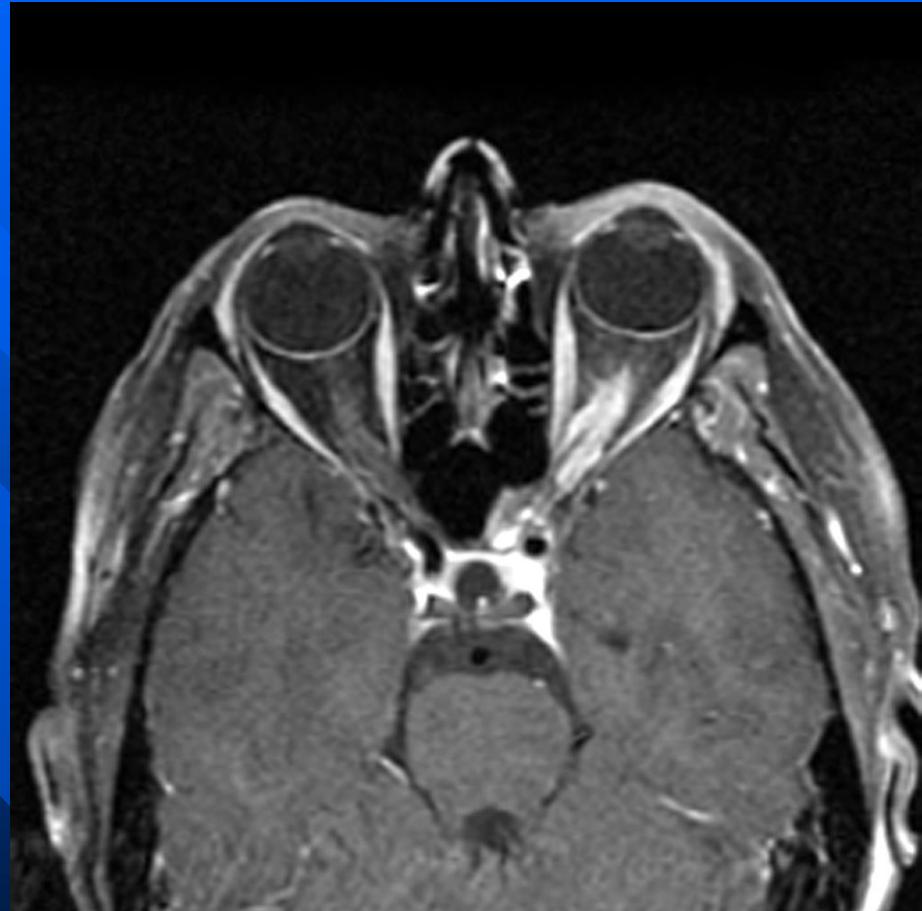
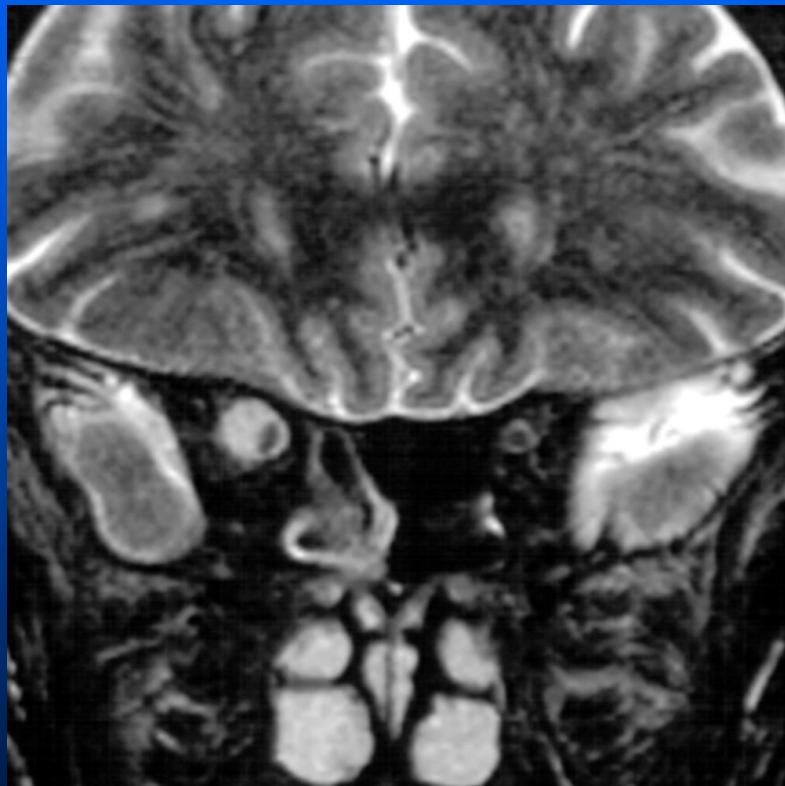


Noncontrast axial CT scan obtained in a patient with right optic nerve sheath meningioma, revealing the presence of tumoral calcifications

# Optic nerve sheath meningioma



# ON Meningioma



# DDX:

## ■ **Optic neuritis**

- Clinical: Often associated with multiple sclerosis
- Enhancing optic nerve with minimal nerve-sheath enlargement

## ■ **Orbital pseudotumor**

- Clinical: Painful exophthalmos
- Usually not isolated to ON sheath

## ■ **Orbital sarcoidosis**

- When no systemic disease, can be indistinguishable from ONSM on enhanced CT and MR

## ■ **Optic nerve glioma**

- Pediatric tumor (ONSM usually adult tumor)
- Absence of calcification is chief differentiating feature
- Glioma is not separable from optic nerve
- No "tram-track" enhancement or perioptic cysts
- Glioma may be associated with NF1; ONSM with NF2

## ■ **Lymphoma and metastases**

- Clinical: Systemic symptoms
- Multifocal orbital and extra-orbital lesions