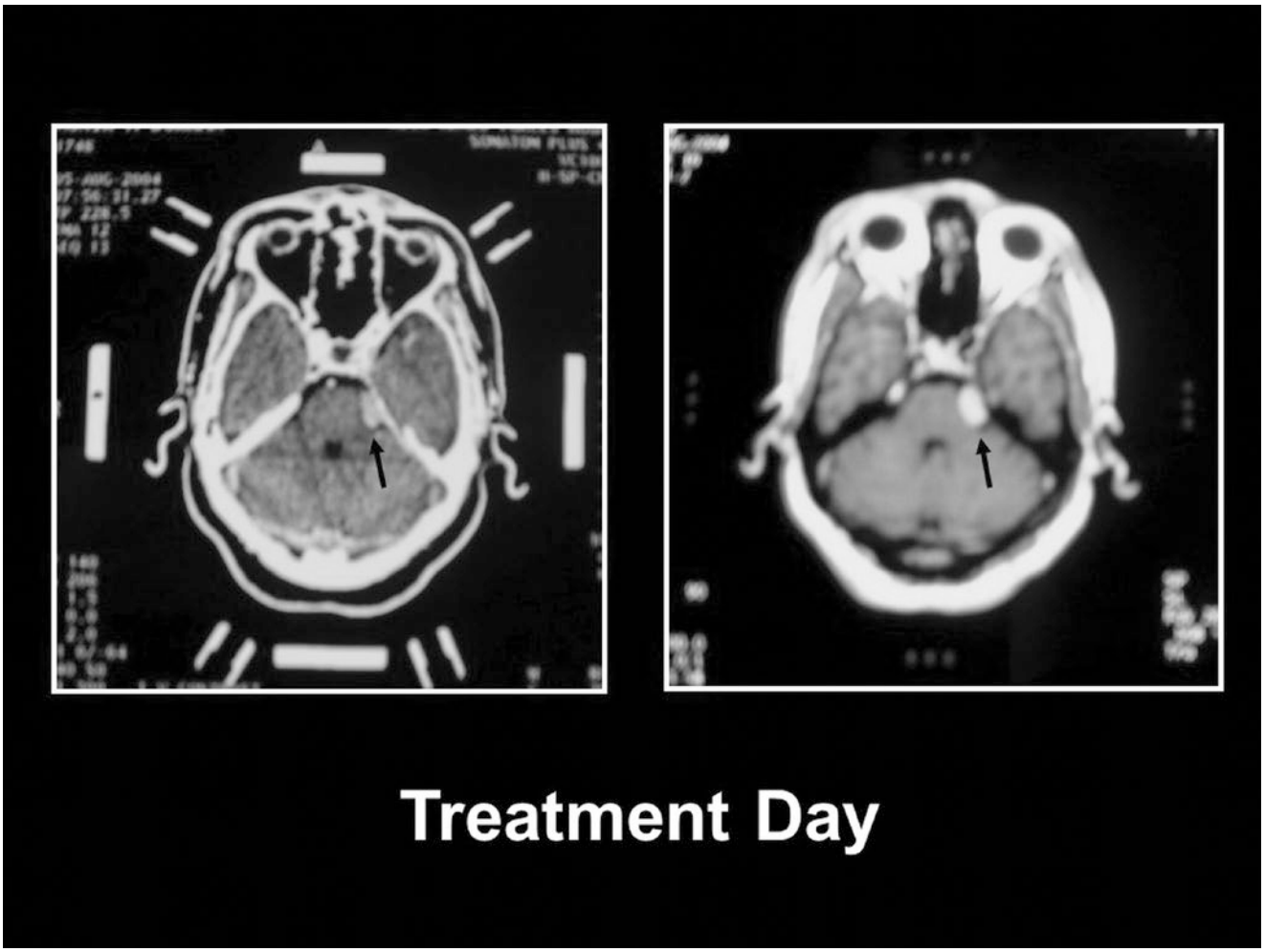
Petrous Apex Meningioma

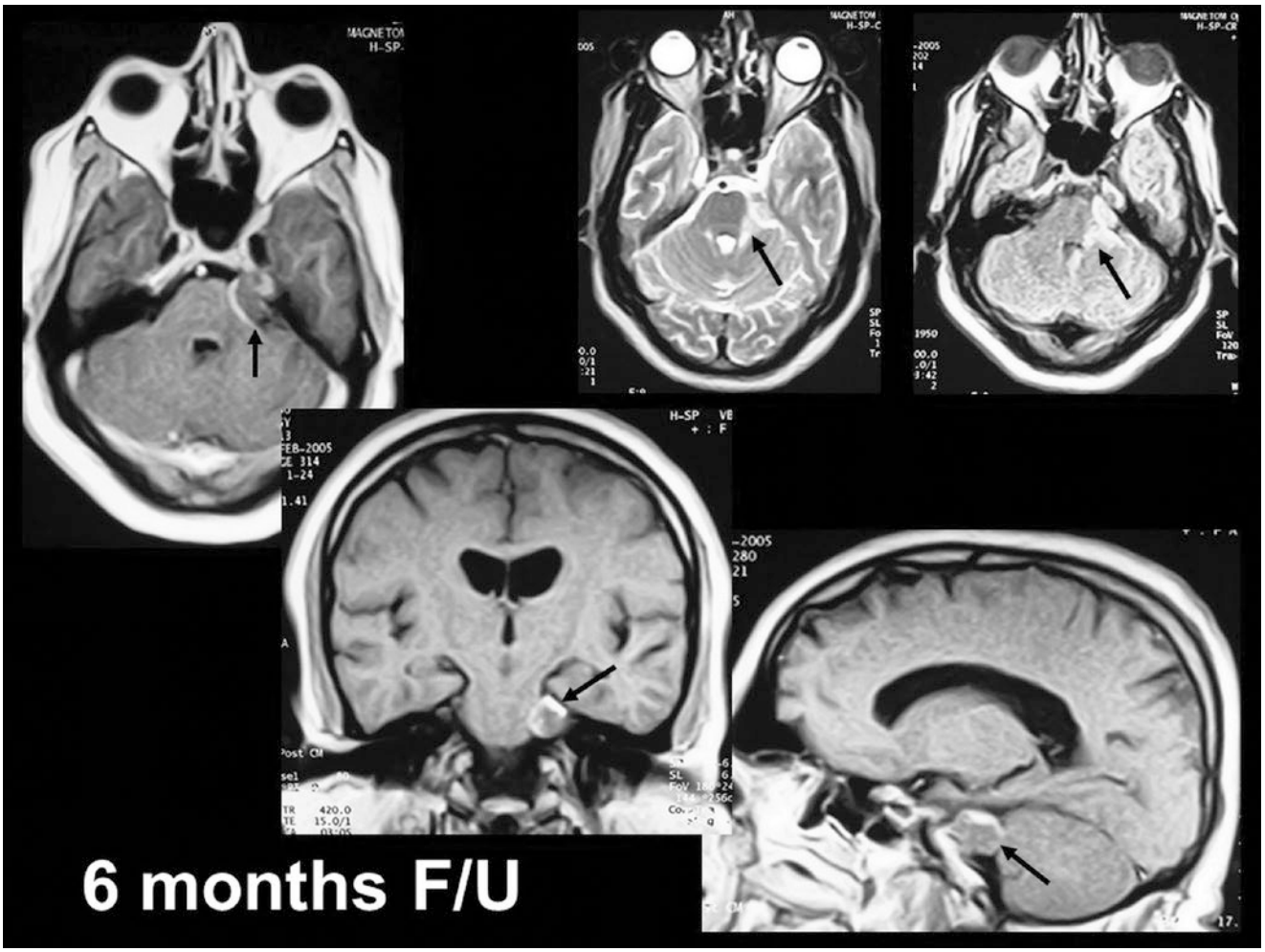
18

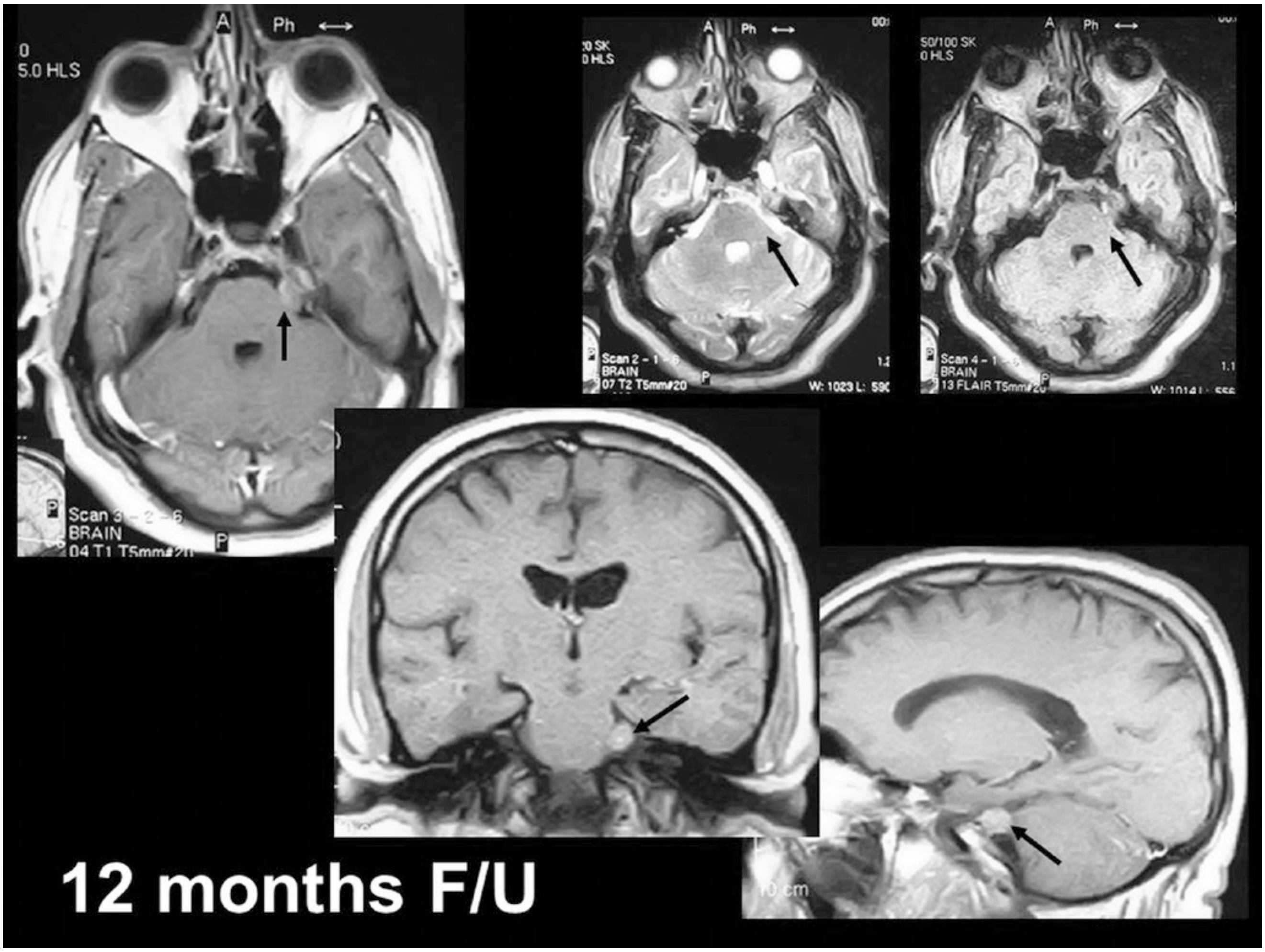
- **Demographics:** Male; 52 years
- **Presentation:** Left trigeminal neuralgia
- **Diagnosis:** Petrous apex meningioma
- **Pre-radiosurgery Treatment:** None
- **Radiosurgery Treatment:**
  Upfront (primary); linac-based SRS for left petrous apex meningioma
- **Radiosurgery Dosimetry:**
  - Target volume: 1.7 cc
  - Marginal dose: 12.0 Gy
  - Marginal isodose: 80%
  - Maximum dose: 15.0 Gy
  - Minimum dose: 11.7 Gy
  - Average dose: 14.3 Gy
  - Number of isocenters: 1
  - Maximum dose to brain stem: 14.2 Gy
- **Follow-Up Period:** 248 months post-SRS
- **Clinical Outcome:**
  - 6 months post-SRS: Improving trigeminal neuralgia with medications
  - 12 months post-SRS: Controlled trigeminal neuralgia with medications
  - 18 months post-SRS: Controlled trigeminal neuralgia with medications (smaller doses)
  - 36 months post-SRS: Controlled trigeminal neuralgia without medications
  - 248 months post-SRS: Sustainable control of trigeminal neuralgia without medications
- **Complications:** None
- **Radiological Outcome:**
  - 6 months post-SRS (MRI):
    Mild increase in tumor size (pseudo-progression)
    Loss of central tumor contrast enhancement
    Appearance of perilesional brain stem high signal in T2 and FLAIR studies, denoting vasogenic edema (asymptomatic)
  - 12 months post-SRS (MRI):
    Decreased tumor size
    Decreased tumor contrast enhancement
    Resolved perilesional brain stem high signal in T2 and FLAIR studies
  - 18 months post-SRS (MRI):
    More decrease in tumor size
    More decrease in tumor contrast enhancement
    Persistent resolution of perilesional brain stem high signal in T2 and FLAIR studies
  - 36 months post-SRS (MRI):
    More marked decrease in tumor size
    Stationary decreased tumor contrast enhancement
    Persistent resolution of perilesional brain stem high signal in T2 and FLAIR studies
- **Post-radiosurgery Treatment:** None

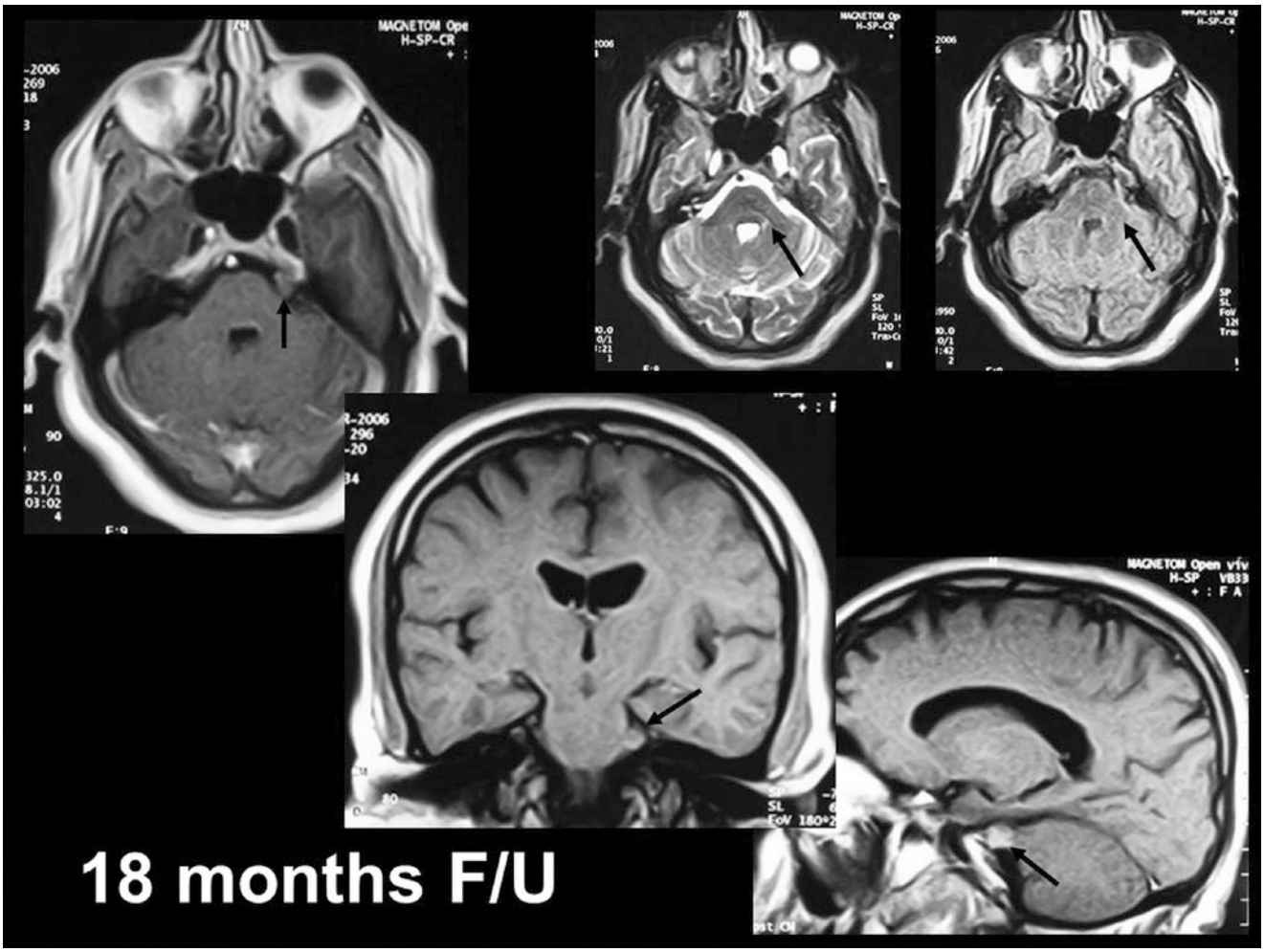
O. S. Abdelaziz, A. A. F. De Salles, *NeuroRadiosurgery: Case Review Atlas*, https://doi.org/10.1007/978-3-031-16199-5_18

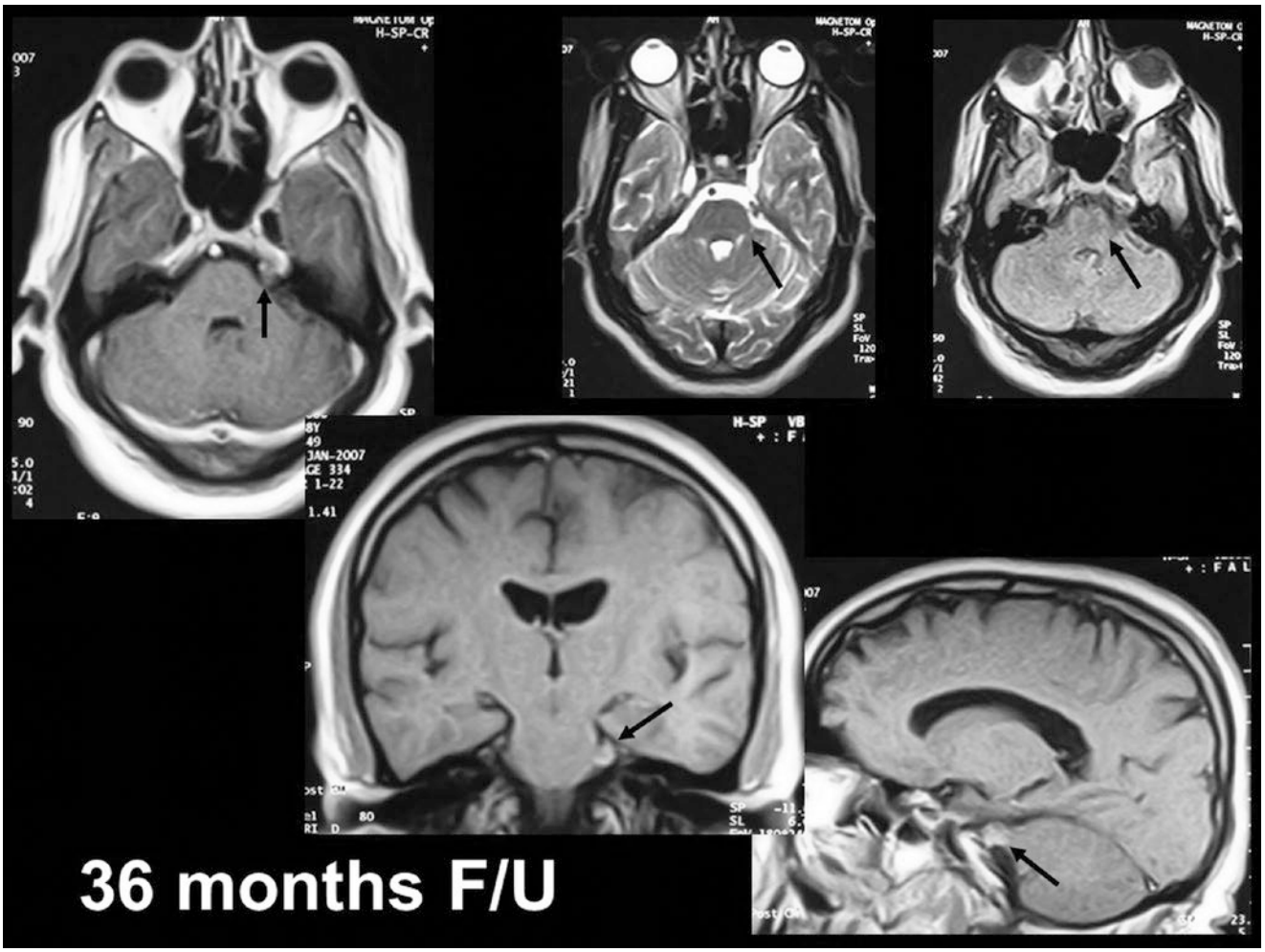

Before SRS


Treatment Day

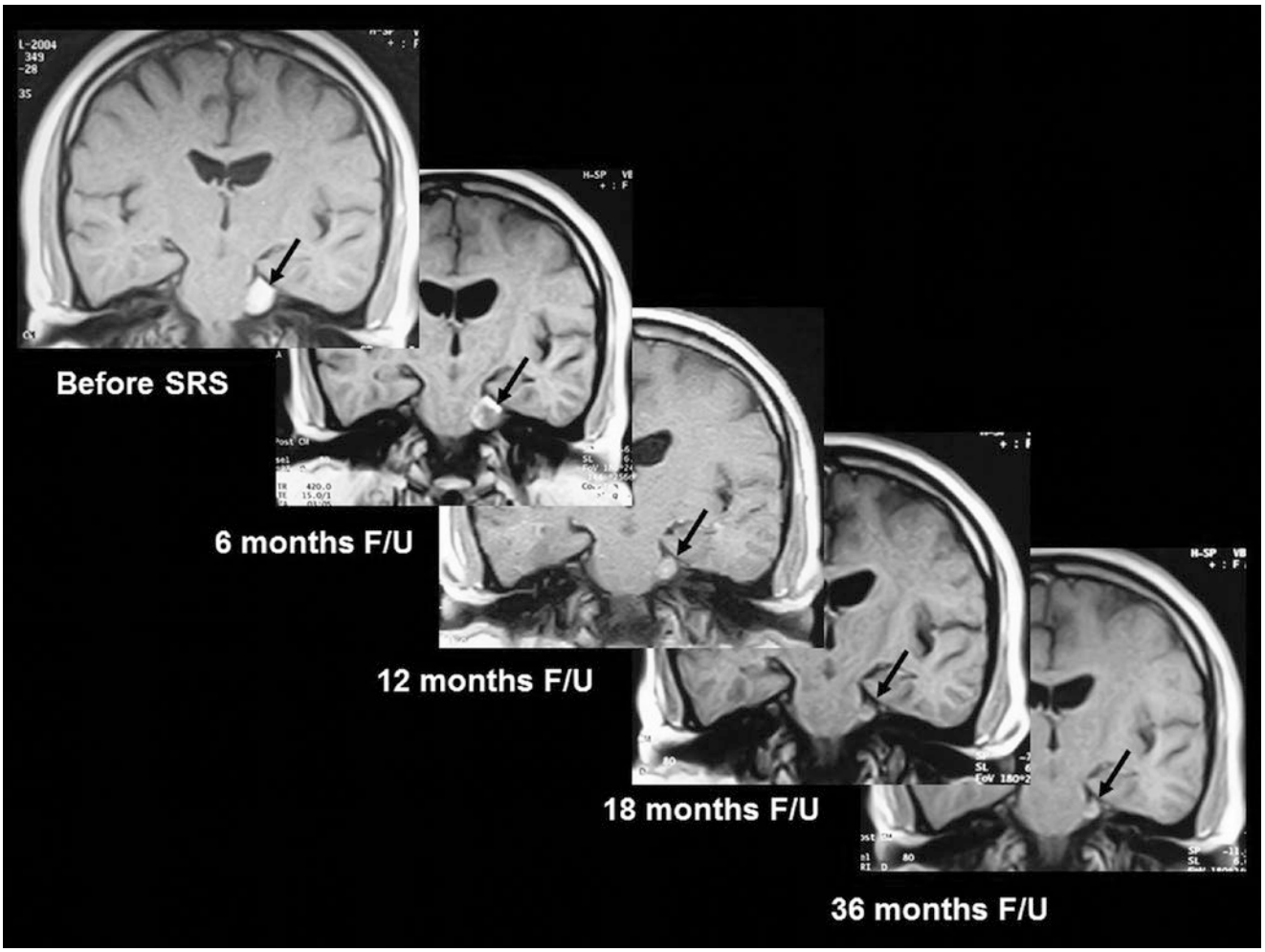

6 months F/U

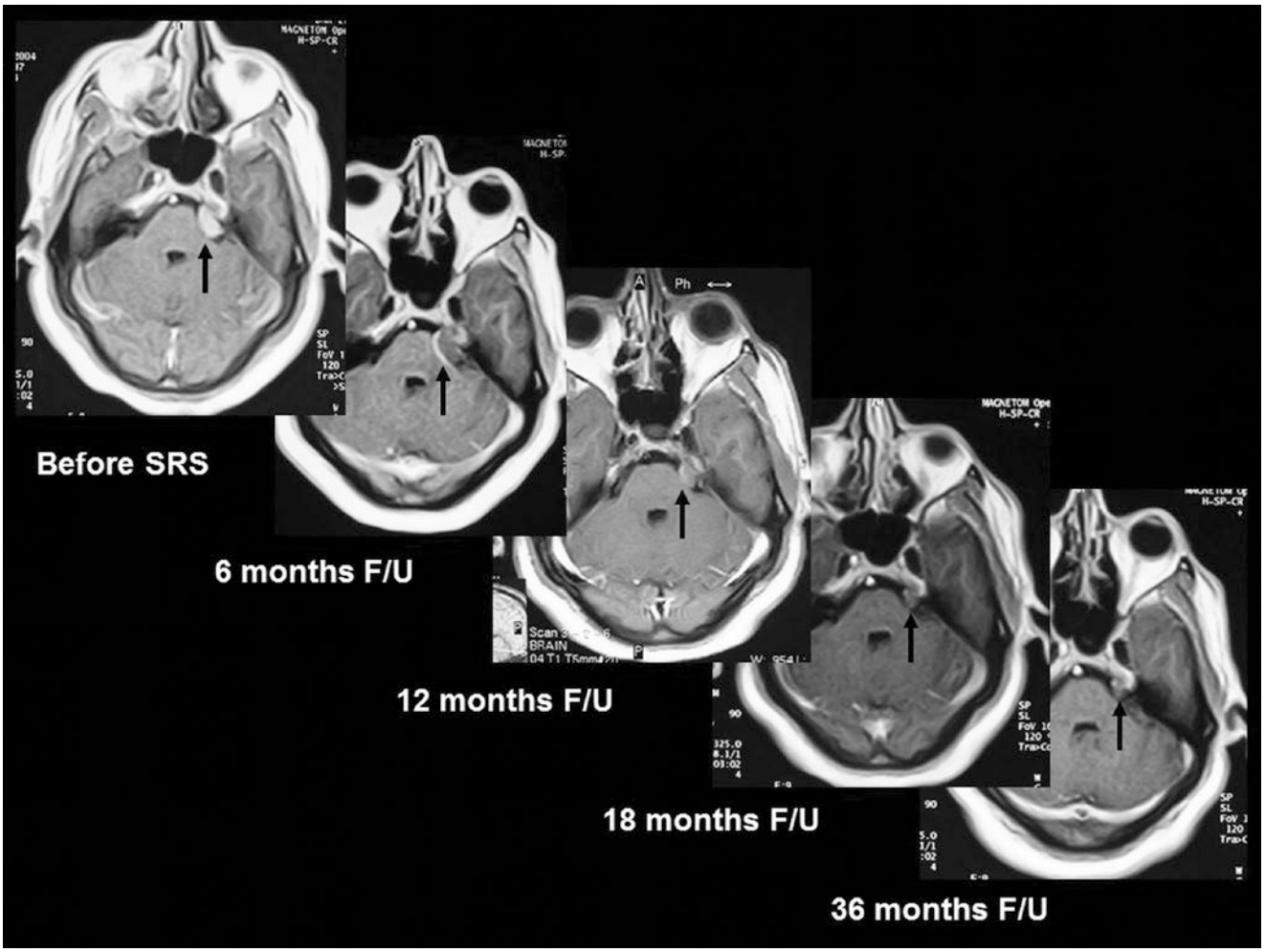

12 months F/U
Scan 3 - 2 - 6
BRAIN
04 T1 T5mm#20
Scan 2 - 1 - 6
BRAIN
07 T2 T5mm#20
Scan 4 - 1 - 6
BRAIN
13 FLAIR T5mm#20


18 months F/U


36 months F/U


Before SRS
36 months F/U


Before SRS
6 months F/U
12 months F/U
18 months F/U
36 months F/U



Further Reading

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Kunert P, Matyja E, Janowski M, et al. Rapid growth of asymptomatic meningioma following radiosurgery. Br J Neurosurg. 2009;23(2):206–8.

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