

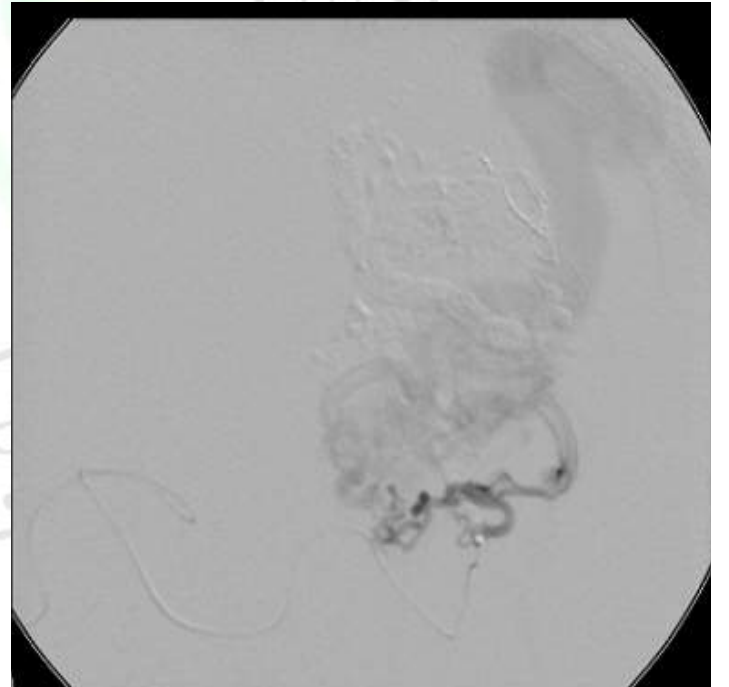
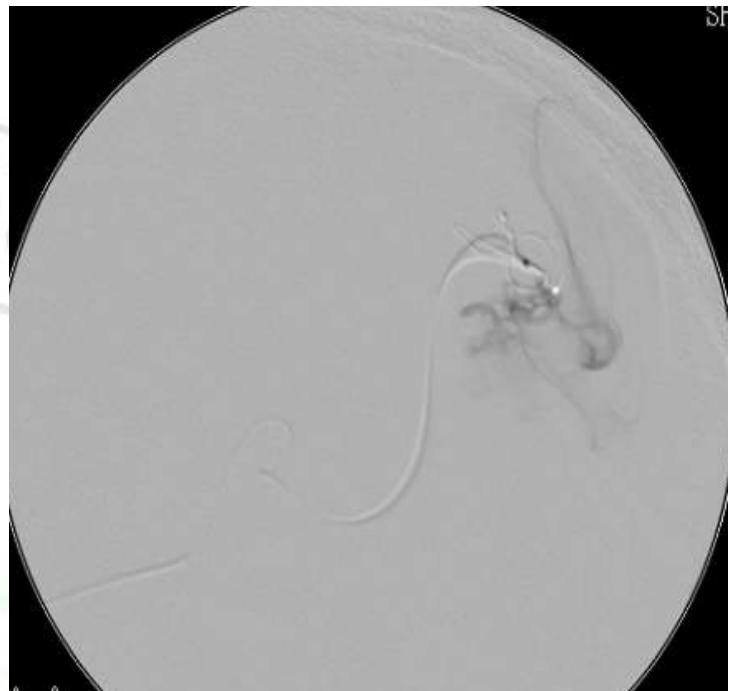


**Angioma Alliance
2007**

Cavernoma risk/benefit

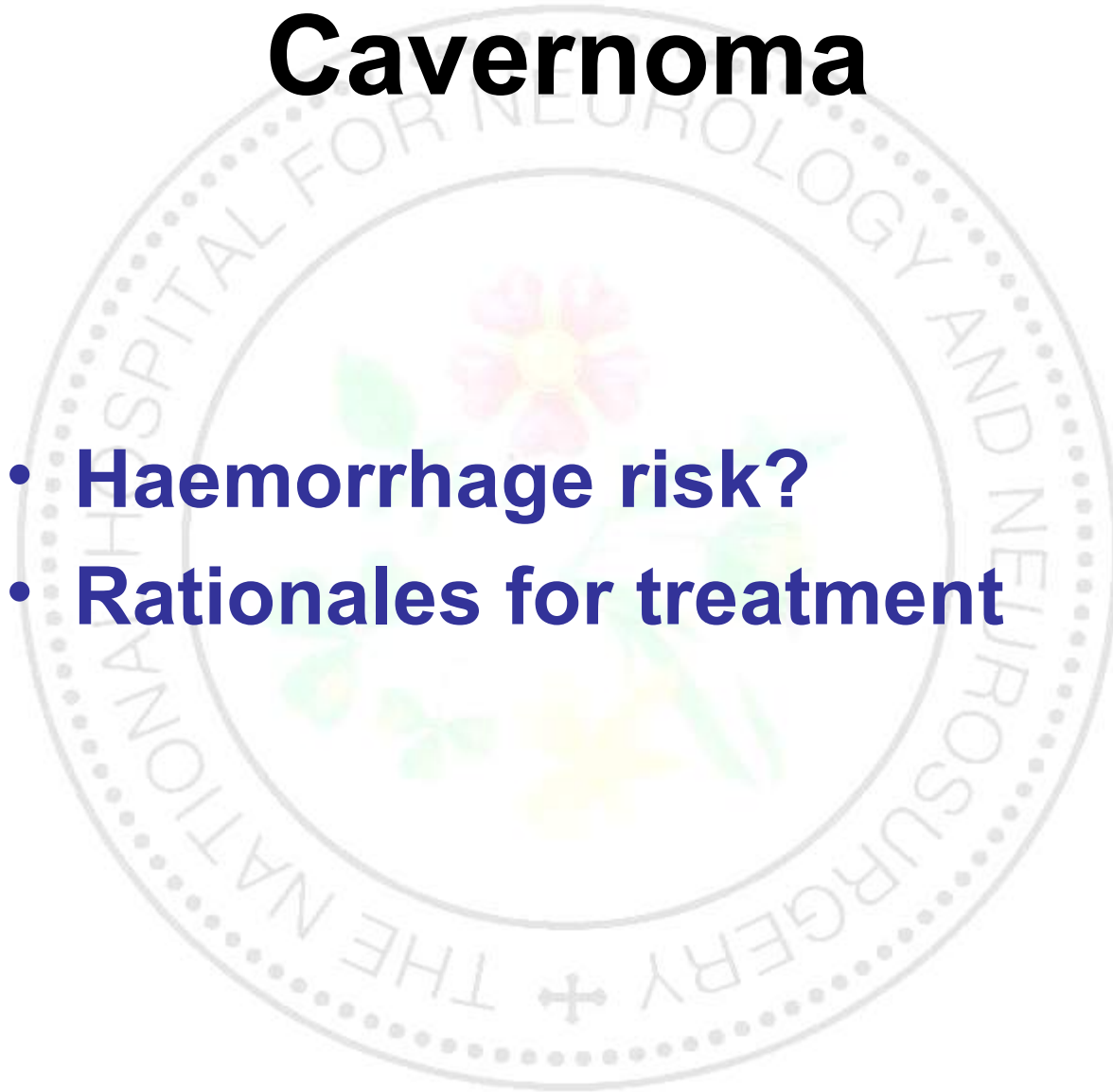
- **Natural history - long term - lifelong**
- **Intervention**
 - **Surgery – ie excision - immediate**
 - **radiosurgery – ie obliteration by single dose radiation - delayed**





Cavernoma

- **Haemorrhage risk?**
- **Rationales for treatment**



Cavernoma Surgery – largely prophylactic

What are the indications?

Prevent future haemorrhage

Prevent future neurology +/- improve

Seizure control

Growth

Psychological factors - fear

Cavernoma Site – surgical implications

- **Supratentorial – cortical /white matter/basal ganglia**
- **Infratentorial – brain stem/cerebellum**
- **Spinal – intramedullary**
- **Eloquent/non-eloquent**
- **Accessibility**

Cavernoma Surgery

- **Surgical excision itself usually straightforward - microscopic**
- **Surgical approach usually determines morbidity – usually image-guided**
- **Aim is complete excision inc haemosiderin with minimal neural damage**

(Traditional) Philosophy for cavernoma surgery

- **Asymptomatic - conservative**
- **Symptomatic**
 - **Supratentorial – remove**
 - **Brainstem and spinal cord - highly individualised depending on history and predicted surgical morbidity**

Cavernoma literature

- **Large**
- **Many papers highly selected surgical series**
- **Overestimate haemorrhage risk**

CNS Cavernoma

- **Relatively benign condition**
- **Most remain asymptomatic**
- **Haemorrhage risk small**
- **Refractory epilepsy very unusual**
- **Few reach/require neuroscience unit management**

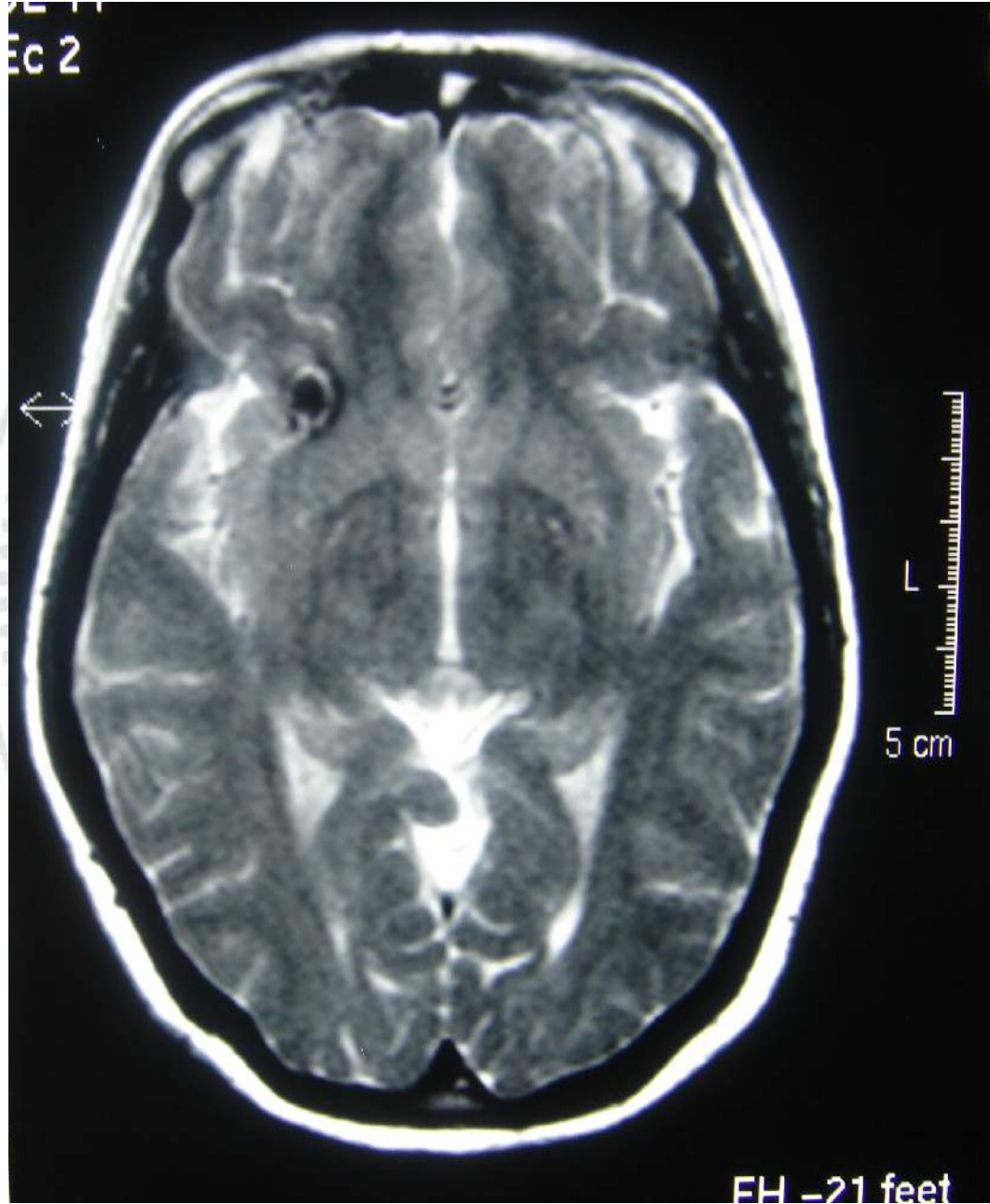
Supratentorial Cavernous Haemangiomas and epilepsy: a review of the literature and case series

- **Moran, Fish, Kitchen, Shorvon, Kendall
and Stevens – JNNP 1999;66:561-568**

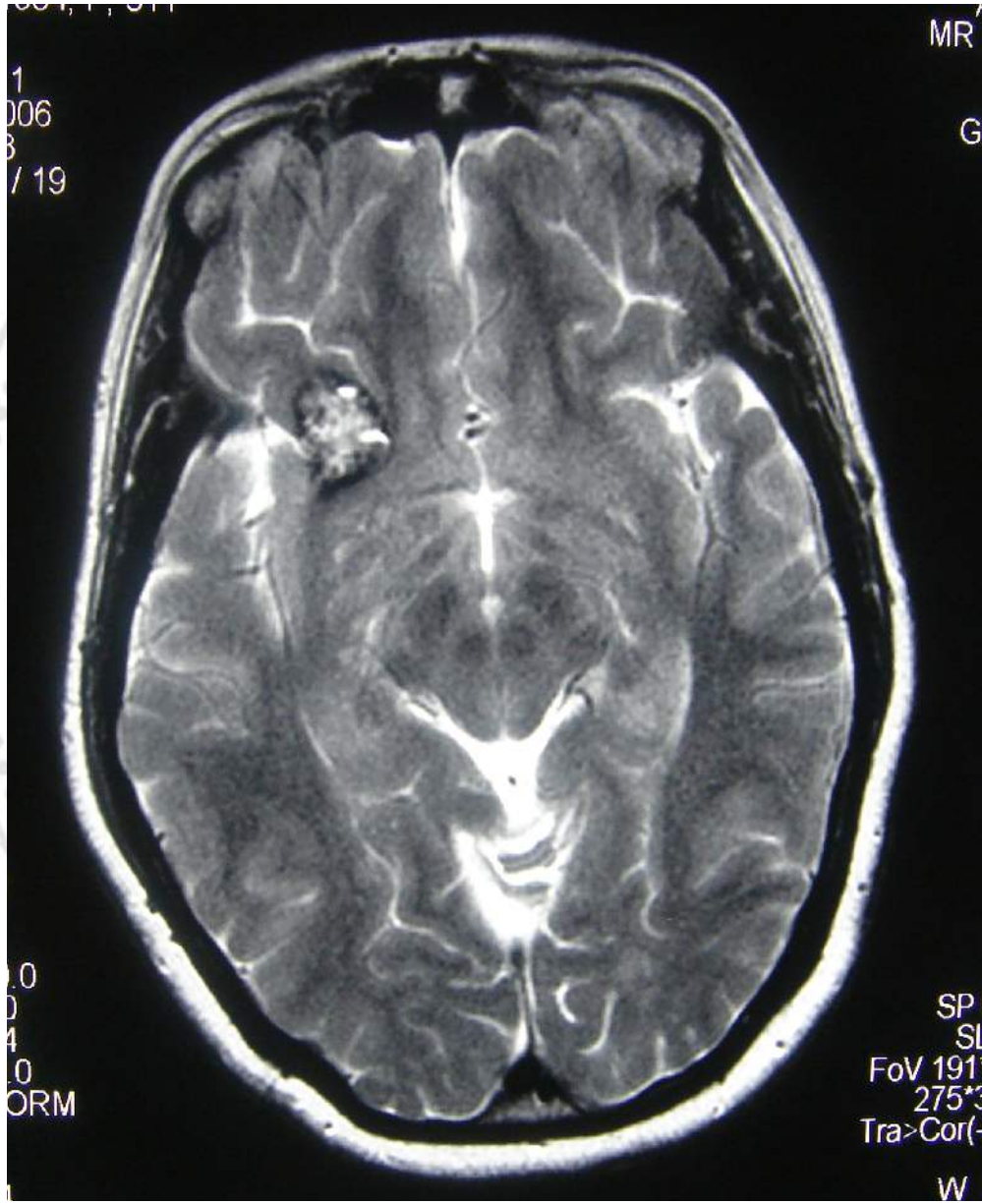
Retrospective series

- **Lit review – annual bleed rate -0.7%**
- **Case series – 17 operated cases with intractable epilepsy from QS epilepsy series**
- **14 lesionectomy**
- **Mean follow-up 3.2 years**
- **35% seizure free (engel class 1)**
- **52% improved (engel class 2 and 3)**

Ec 2



FH -21 feet



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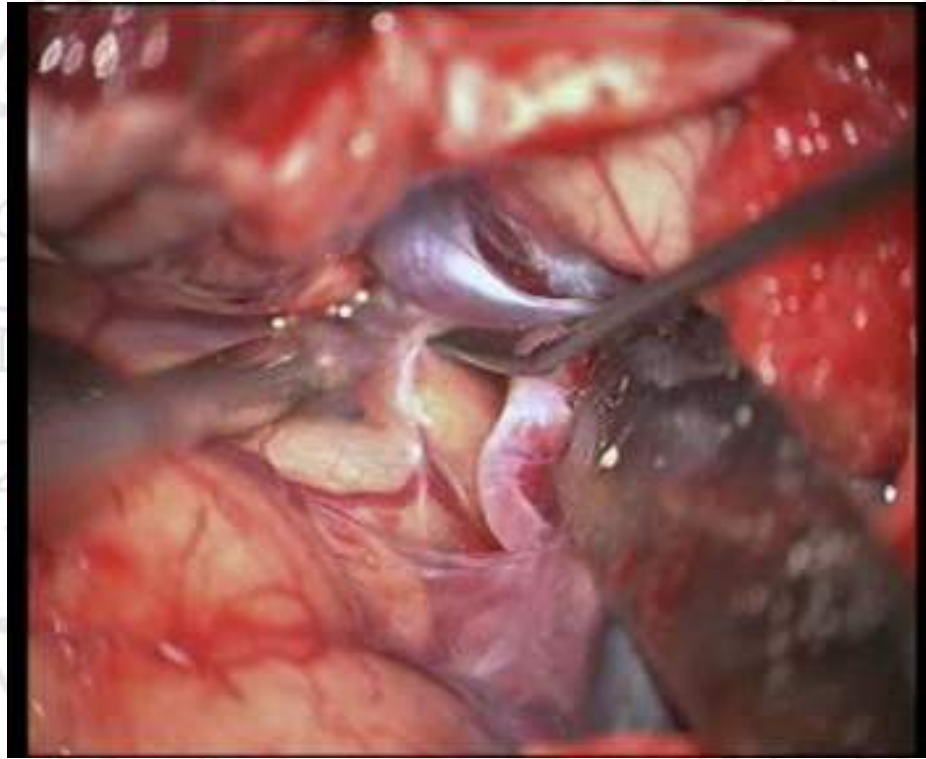
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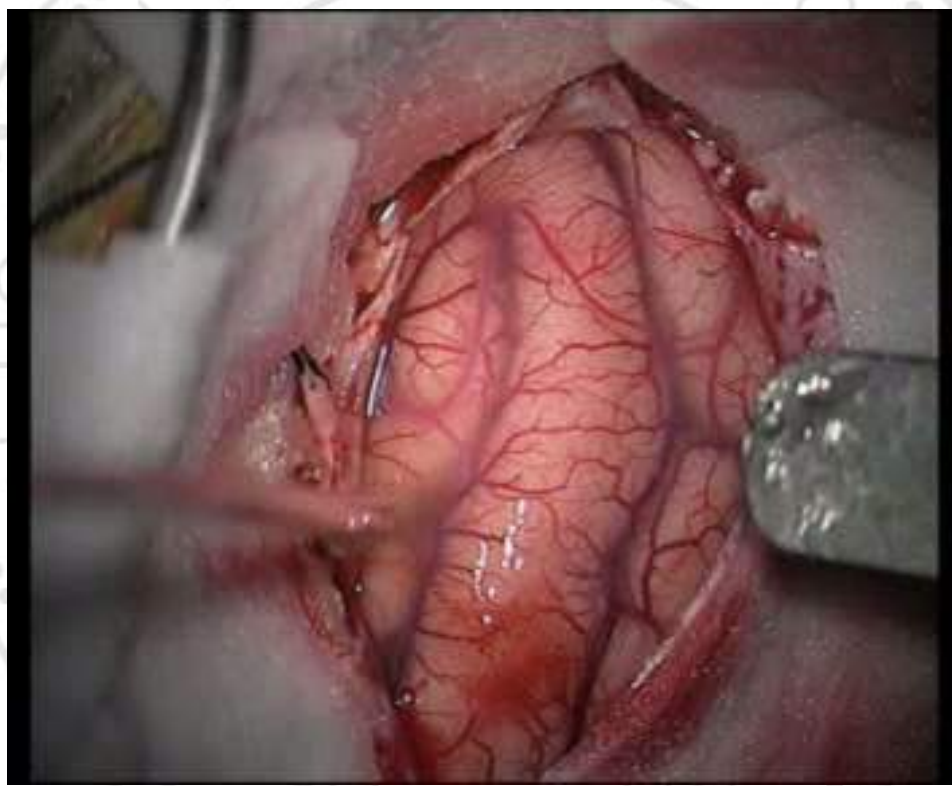
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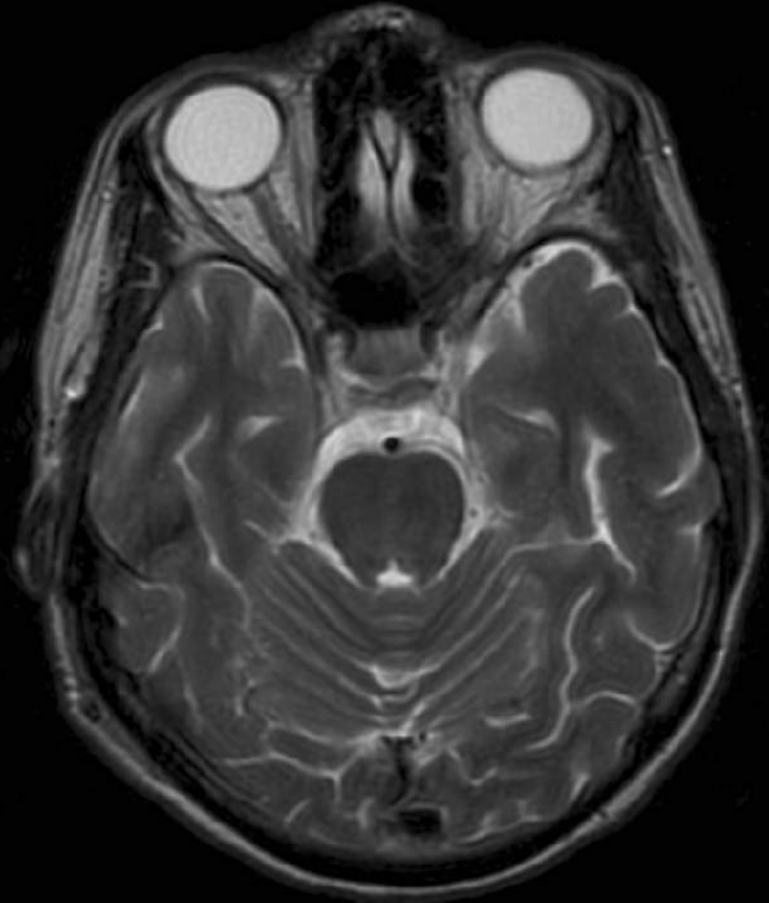


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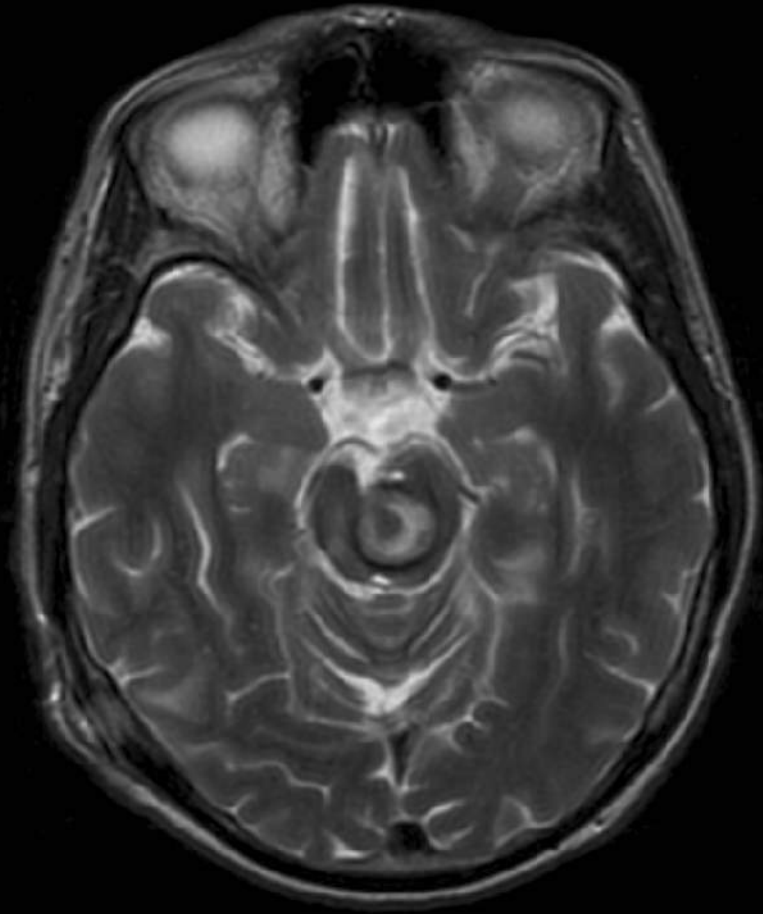
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8

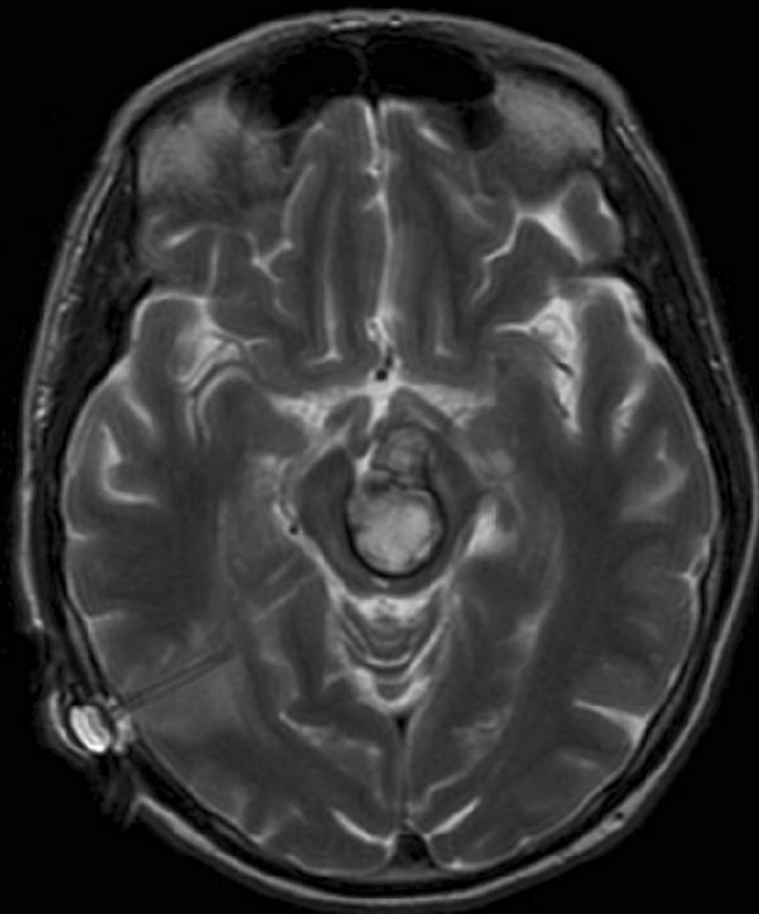


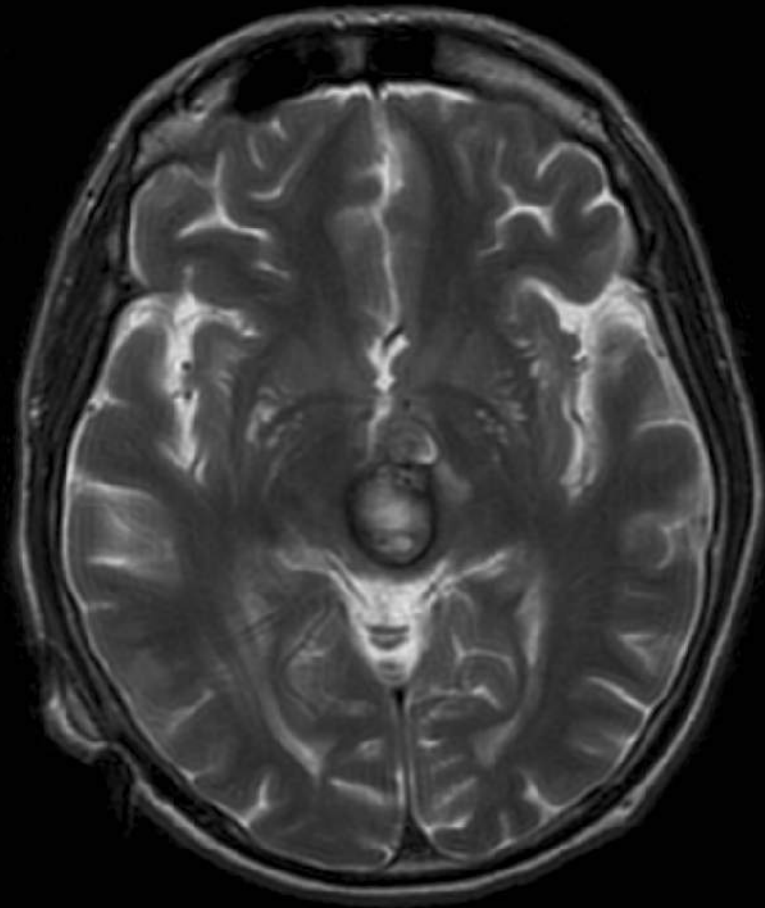
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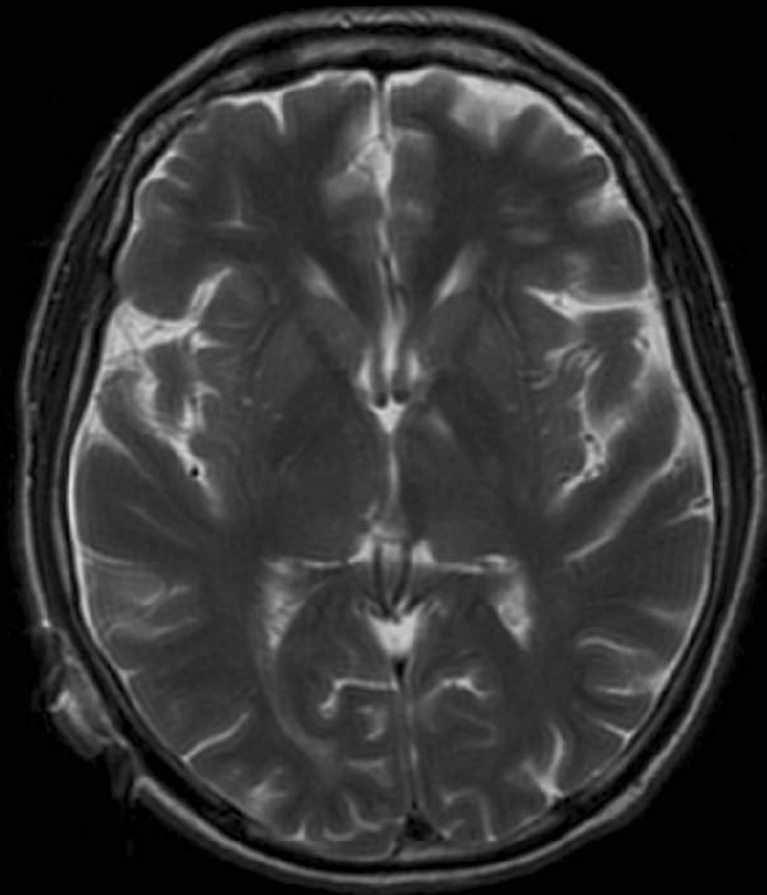
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W 1010 : L 533





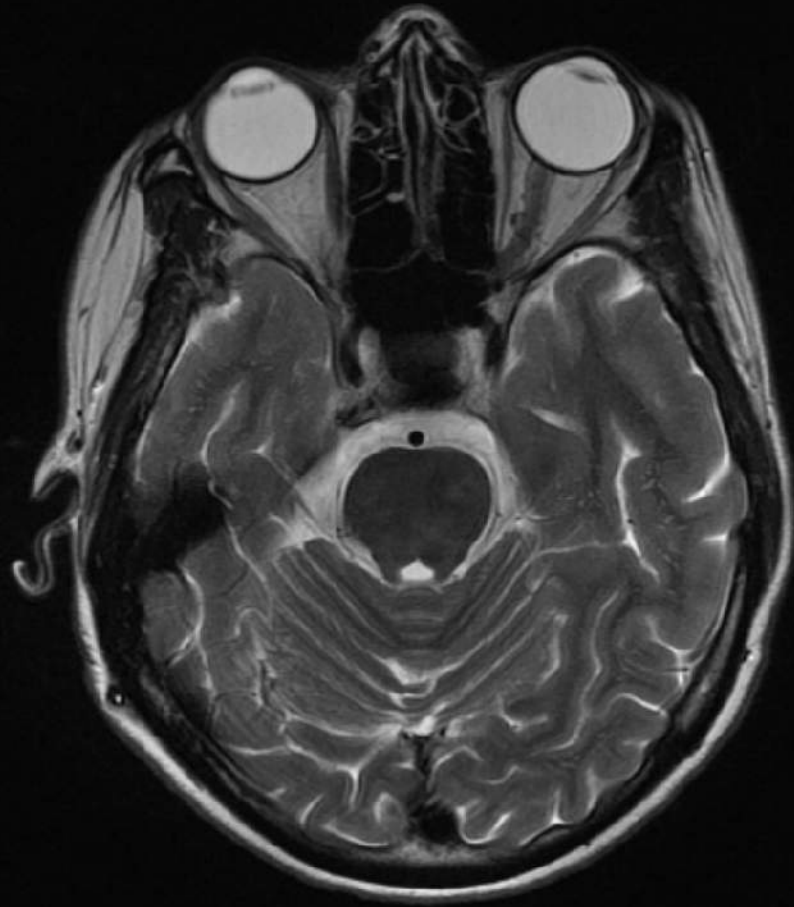


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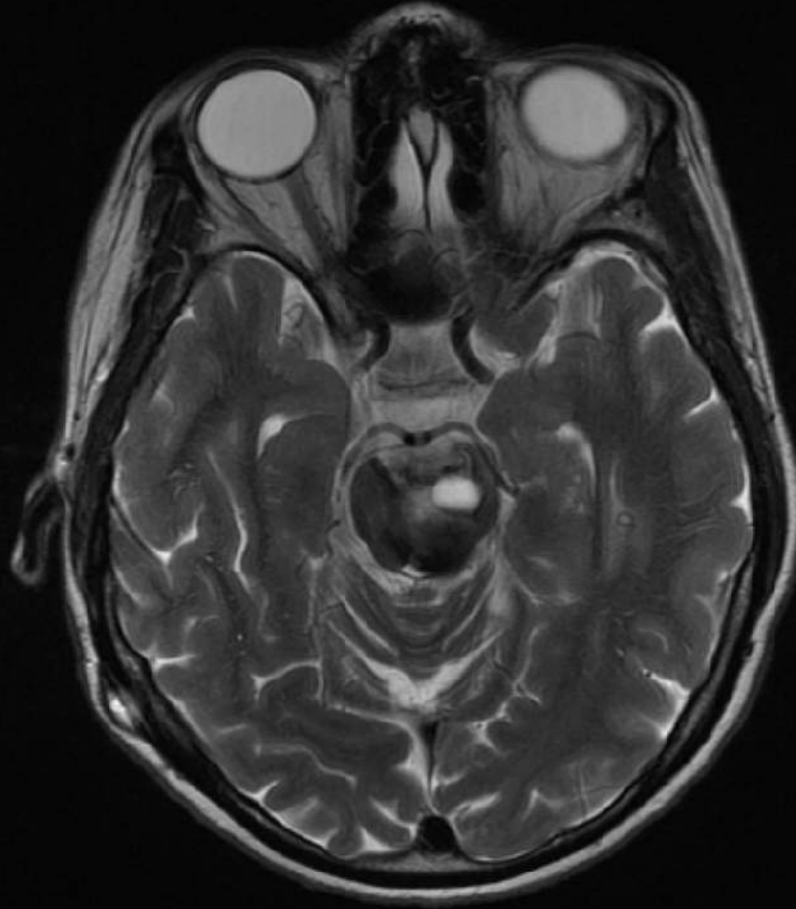
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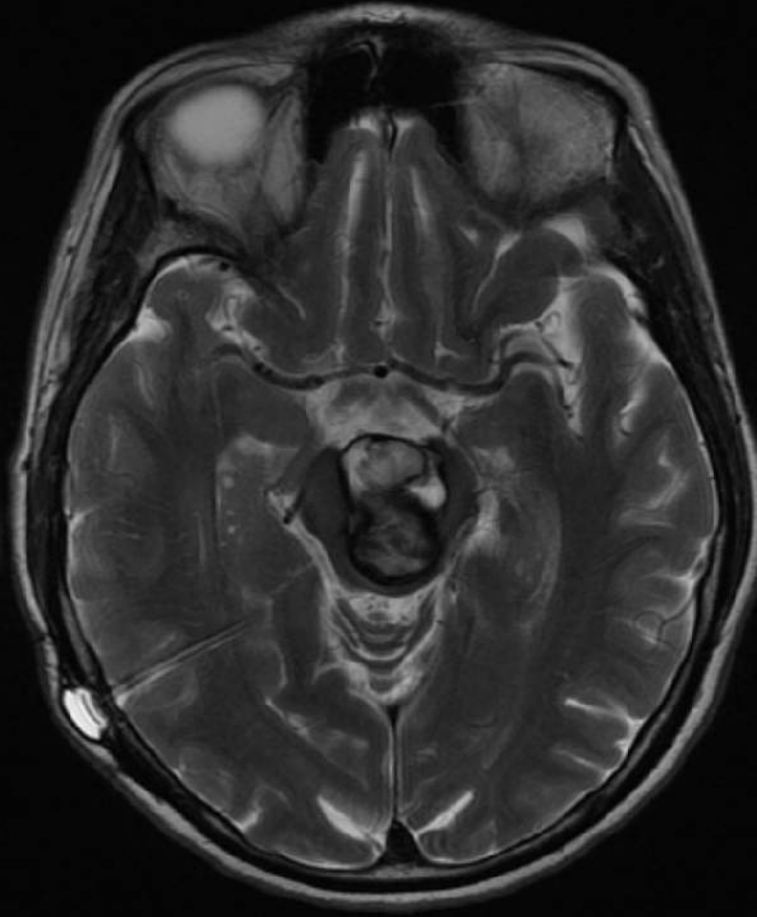
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10



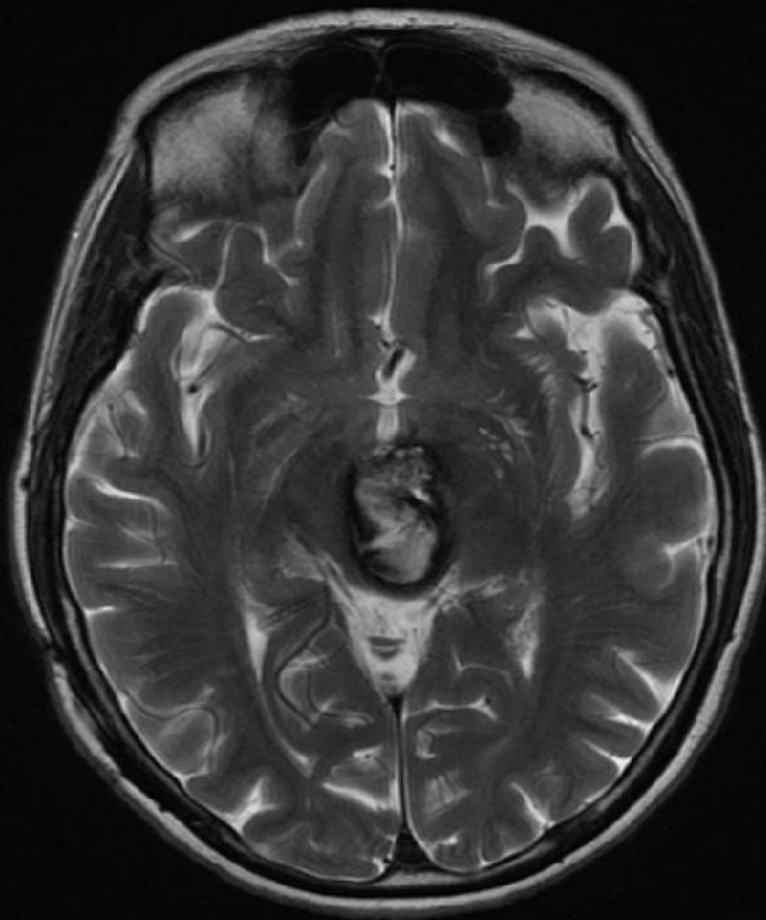
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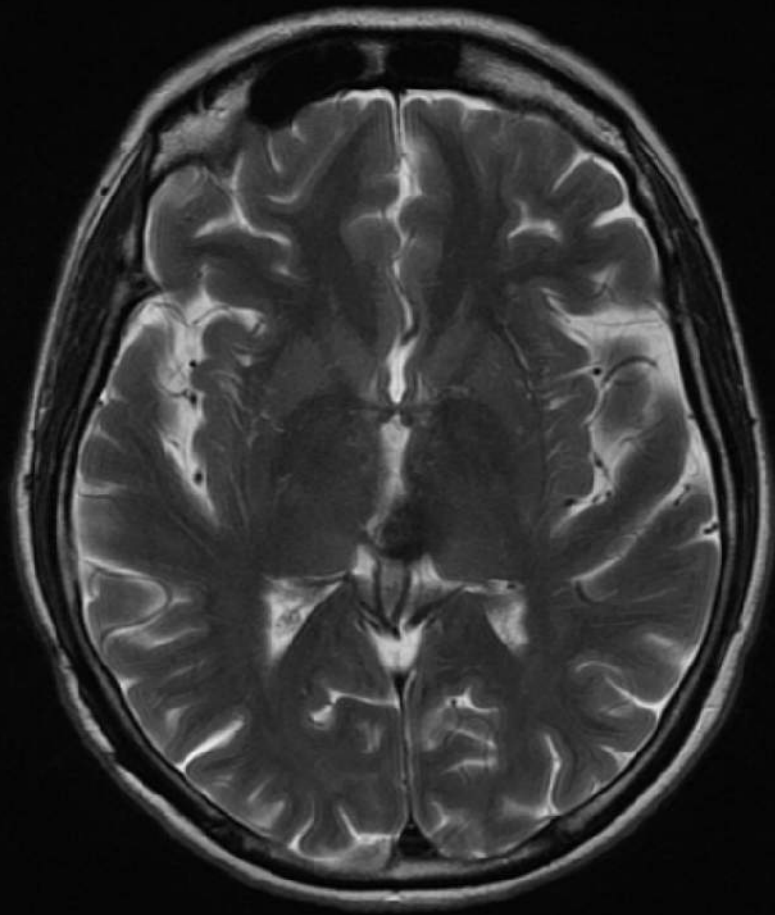
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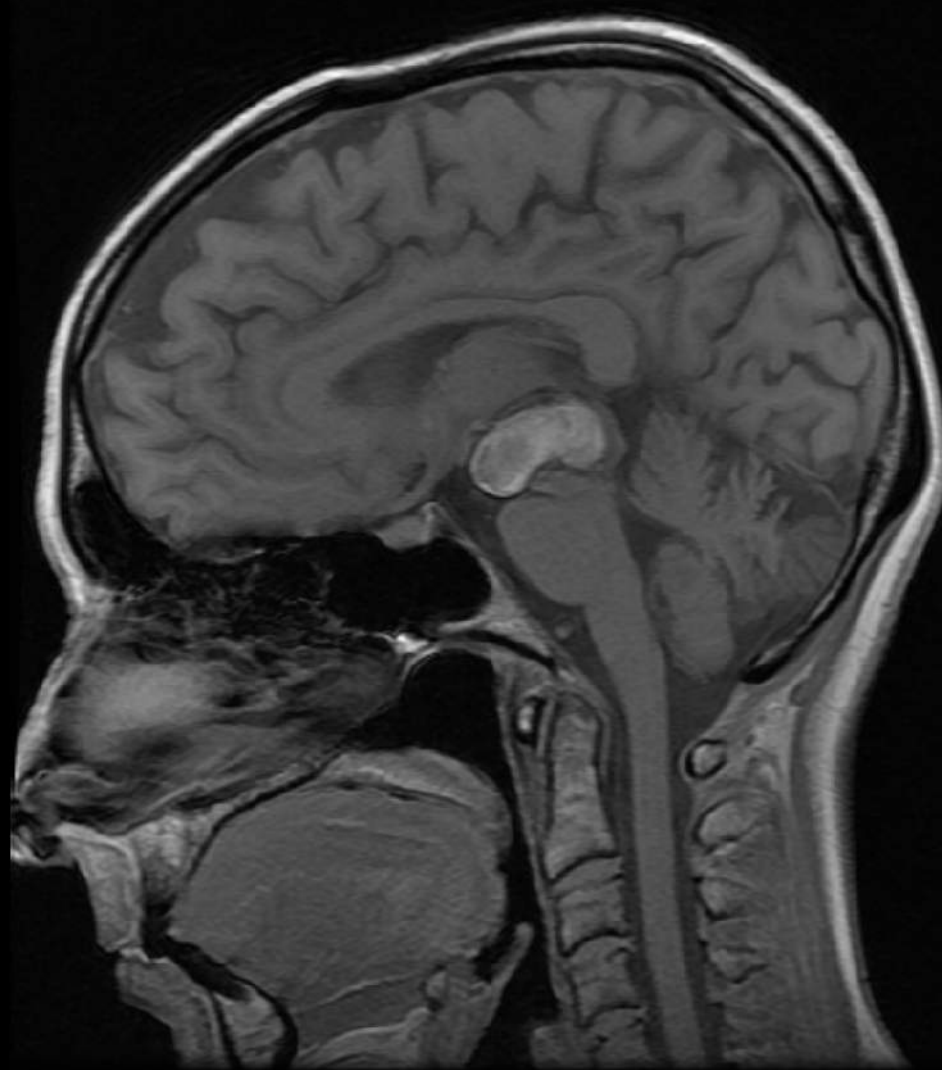
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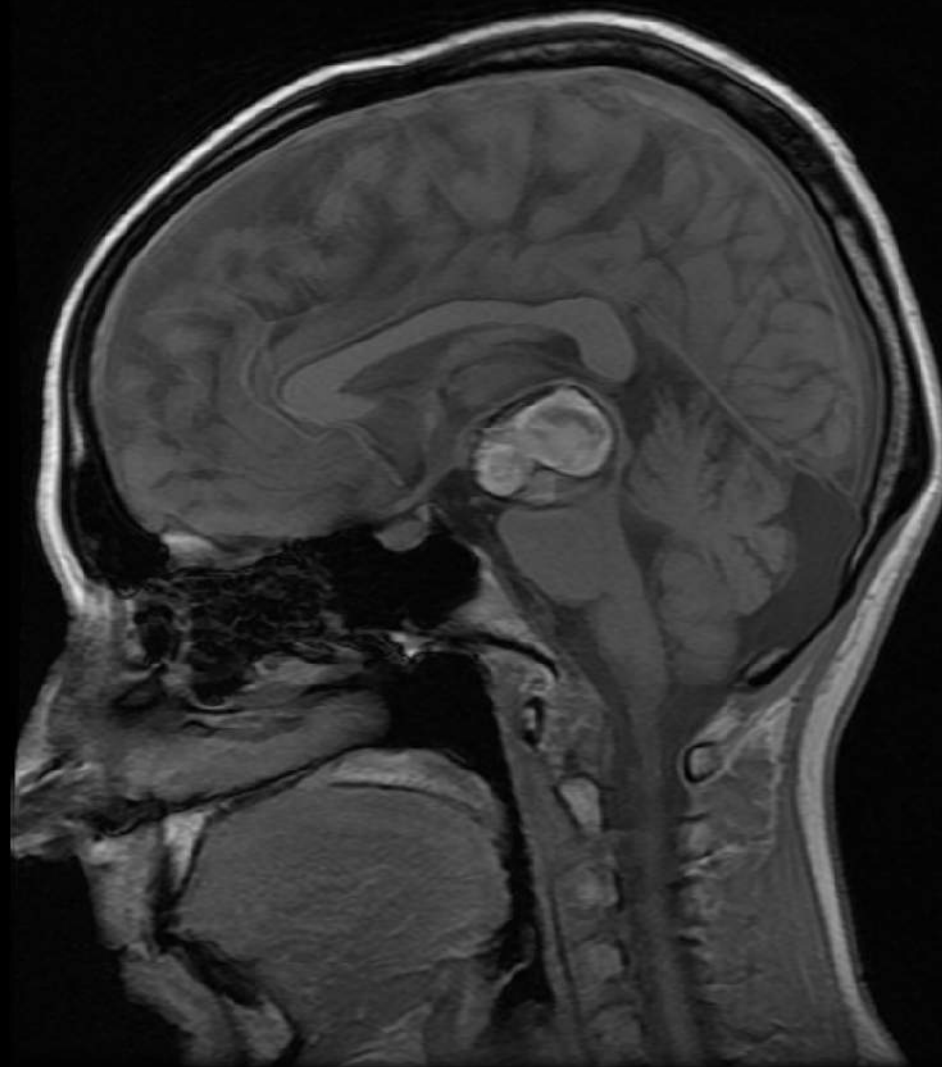
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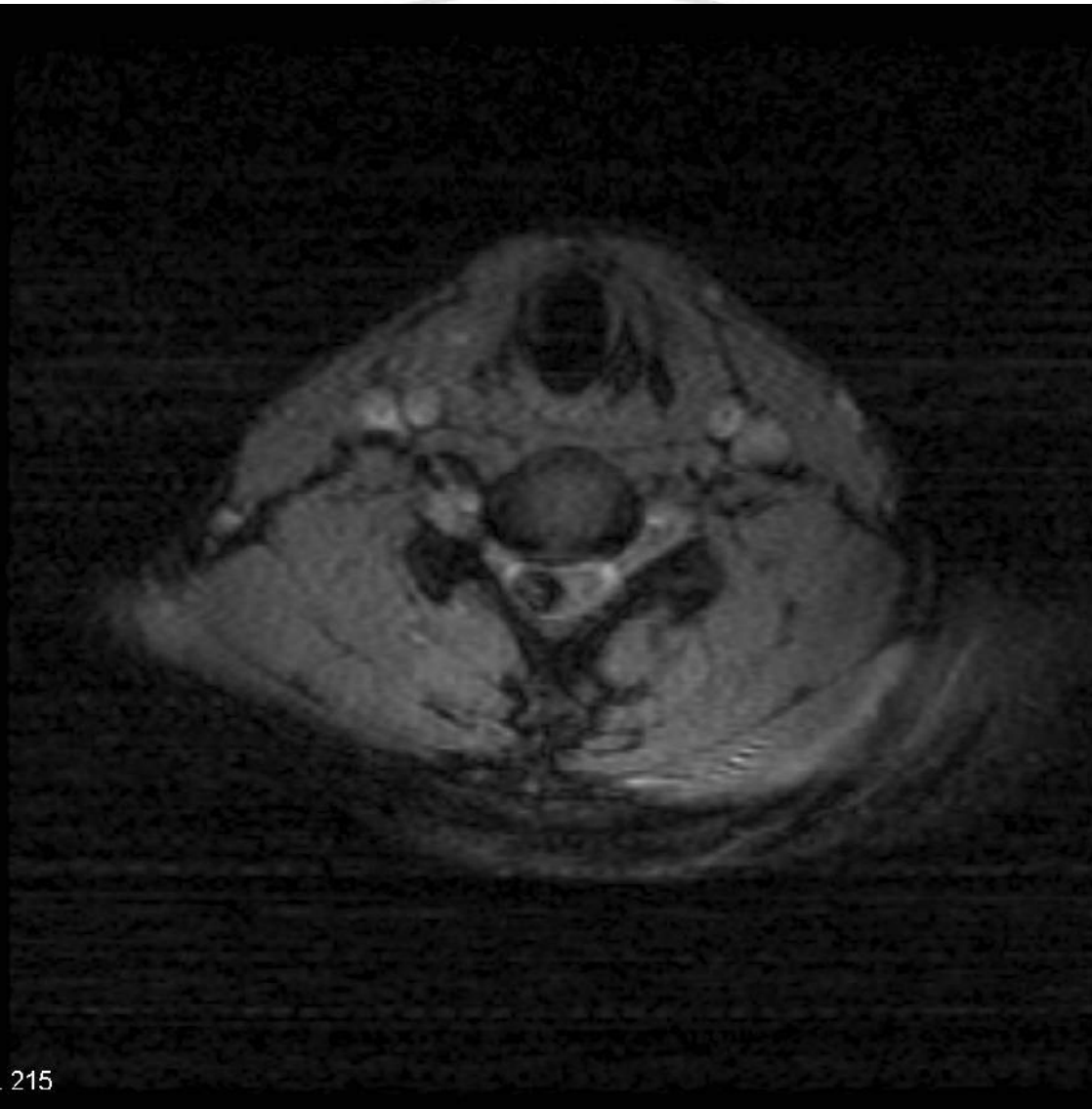
W 1676 : L 838

8



W 1746 : L 873

13



W 411 : L 215

8

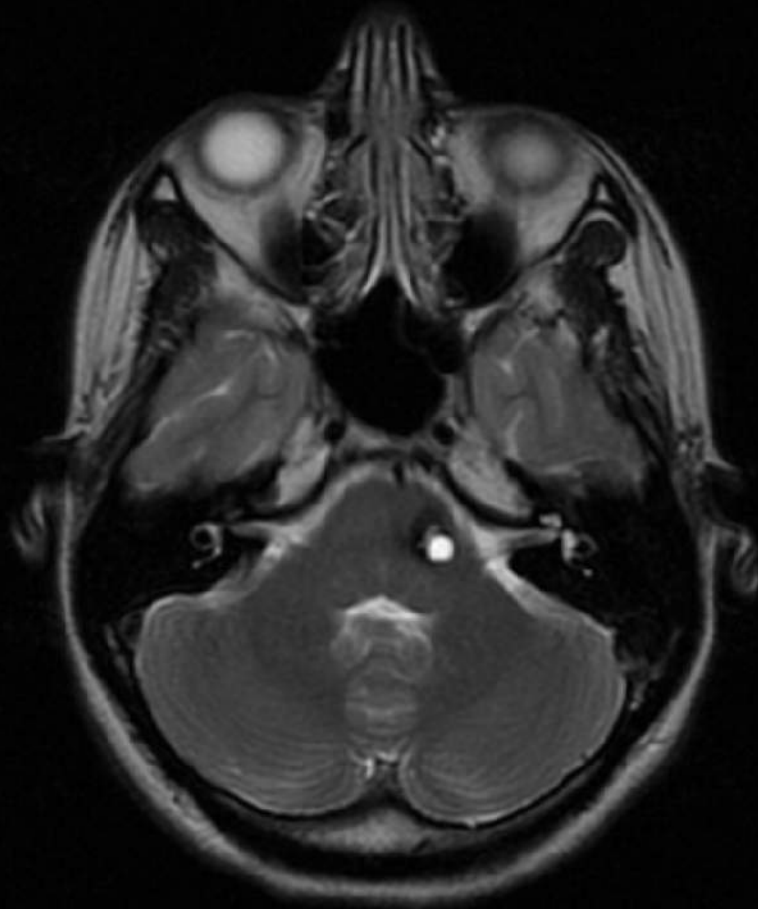
W 952 : L 449



Spinal cord

- **The natural history of conservatively managed symptomatic intramedullary spinal cord cavernomas**
- **Neurosurgery May 2007 – Kharkar et al**
- **14 patients**
- **10 managed conservatively – non rebled within 80 months FU**
- **4 had successful surgery**

6



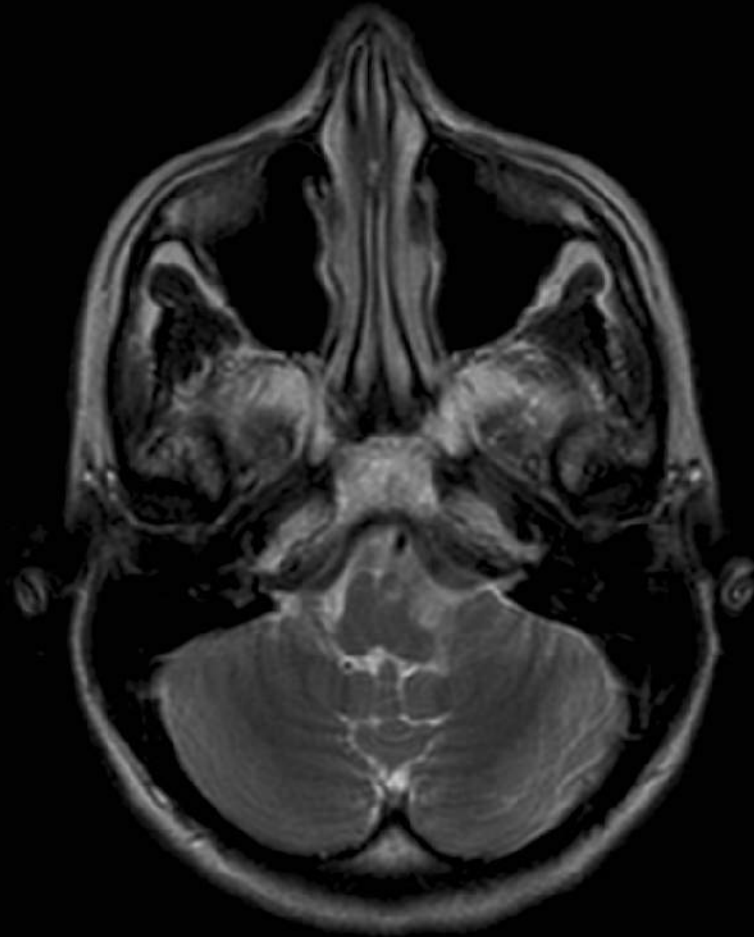
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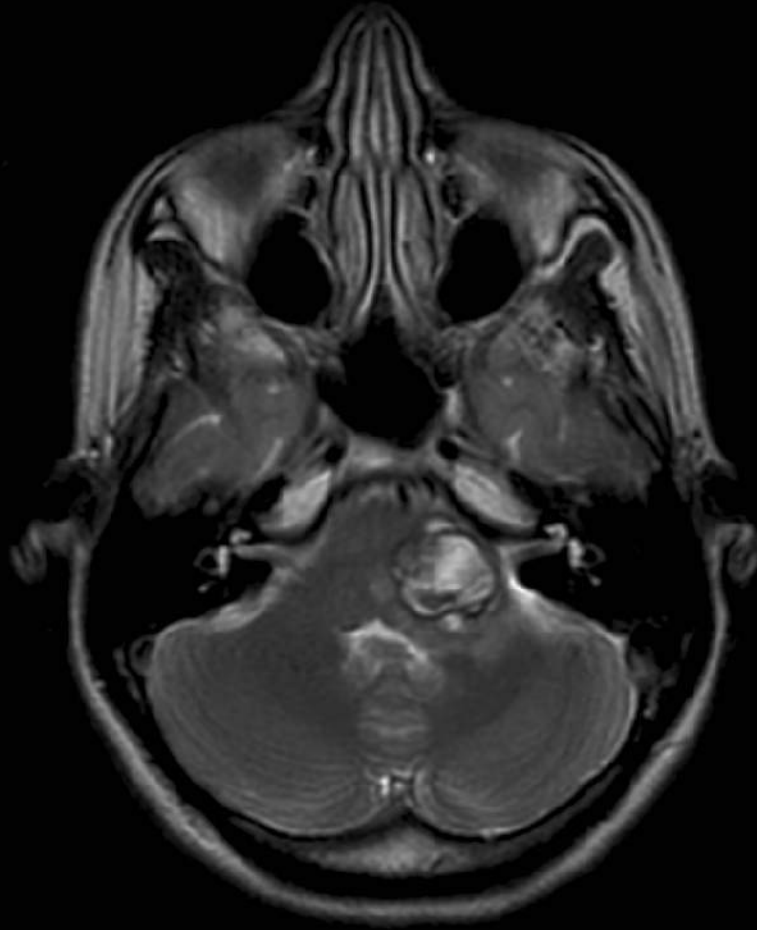
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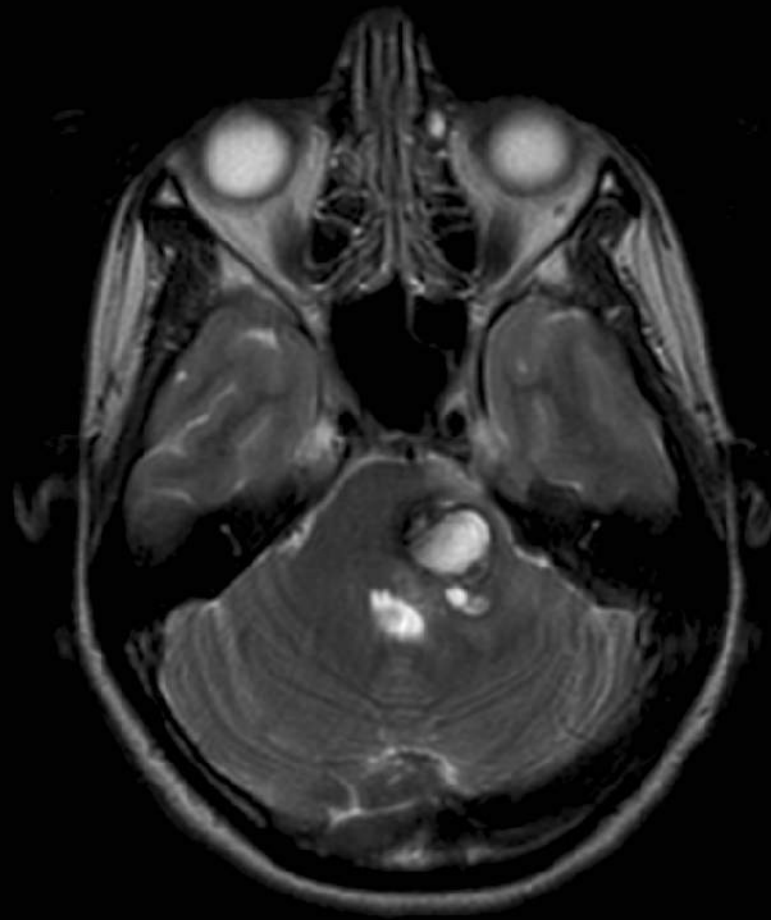
W 812 : L 465

7



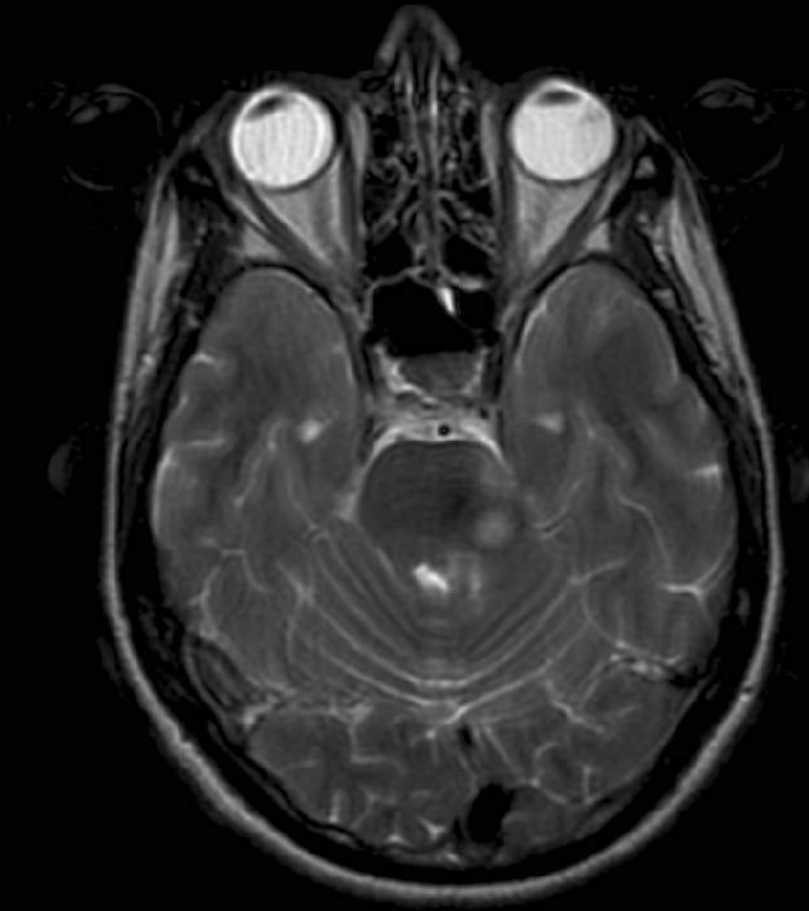
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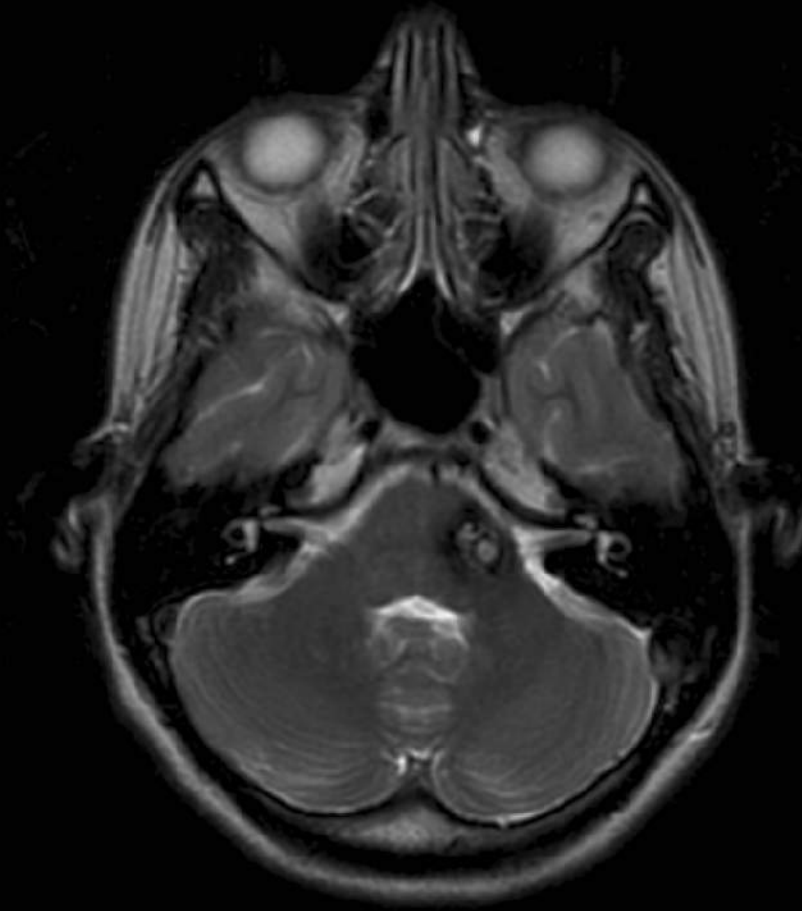
W 812 : L 465

9



W 812 : L 465

9



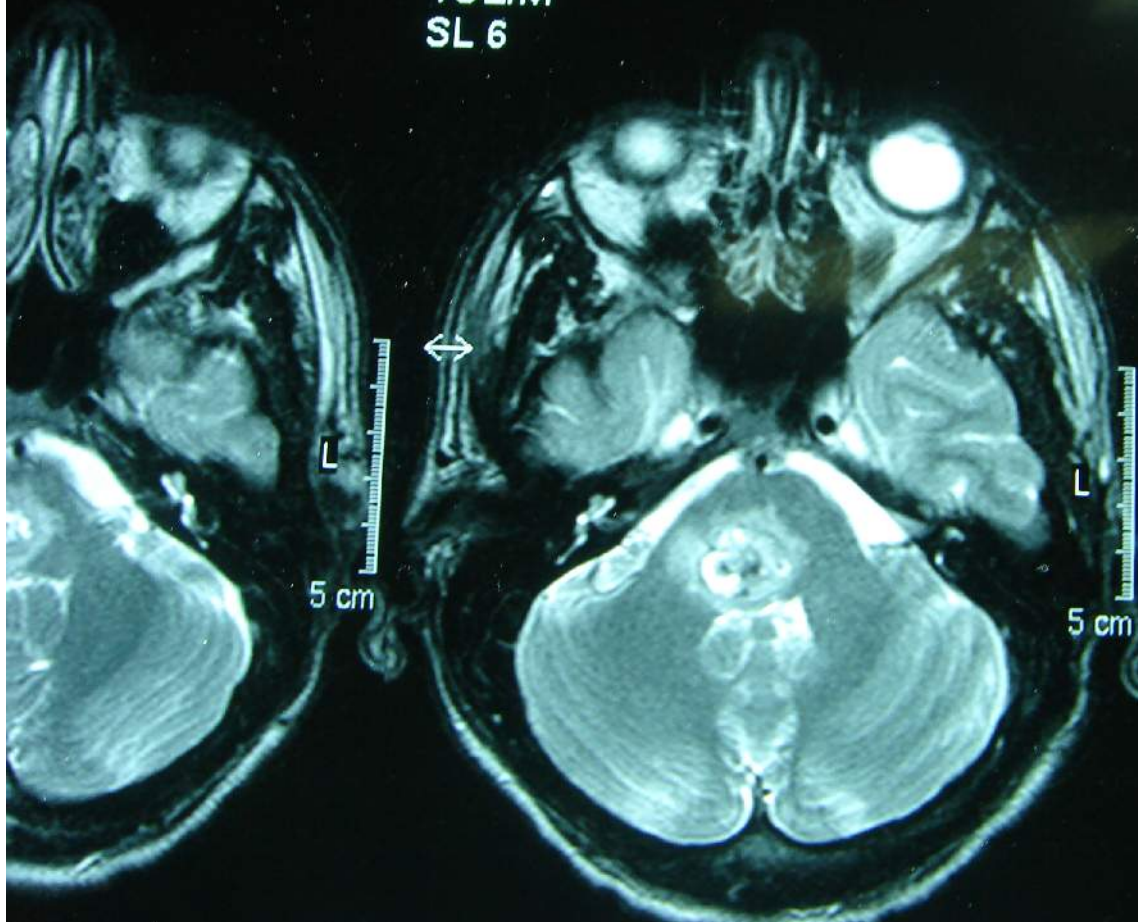
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TOC clinic / Tripoli - Libya

A

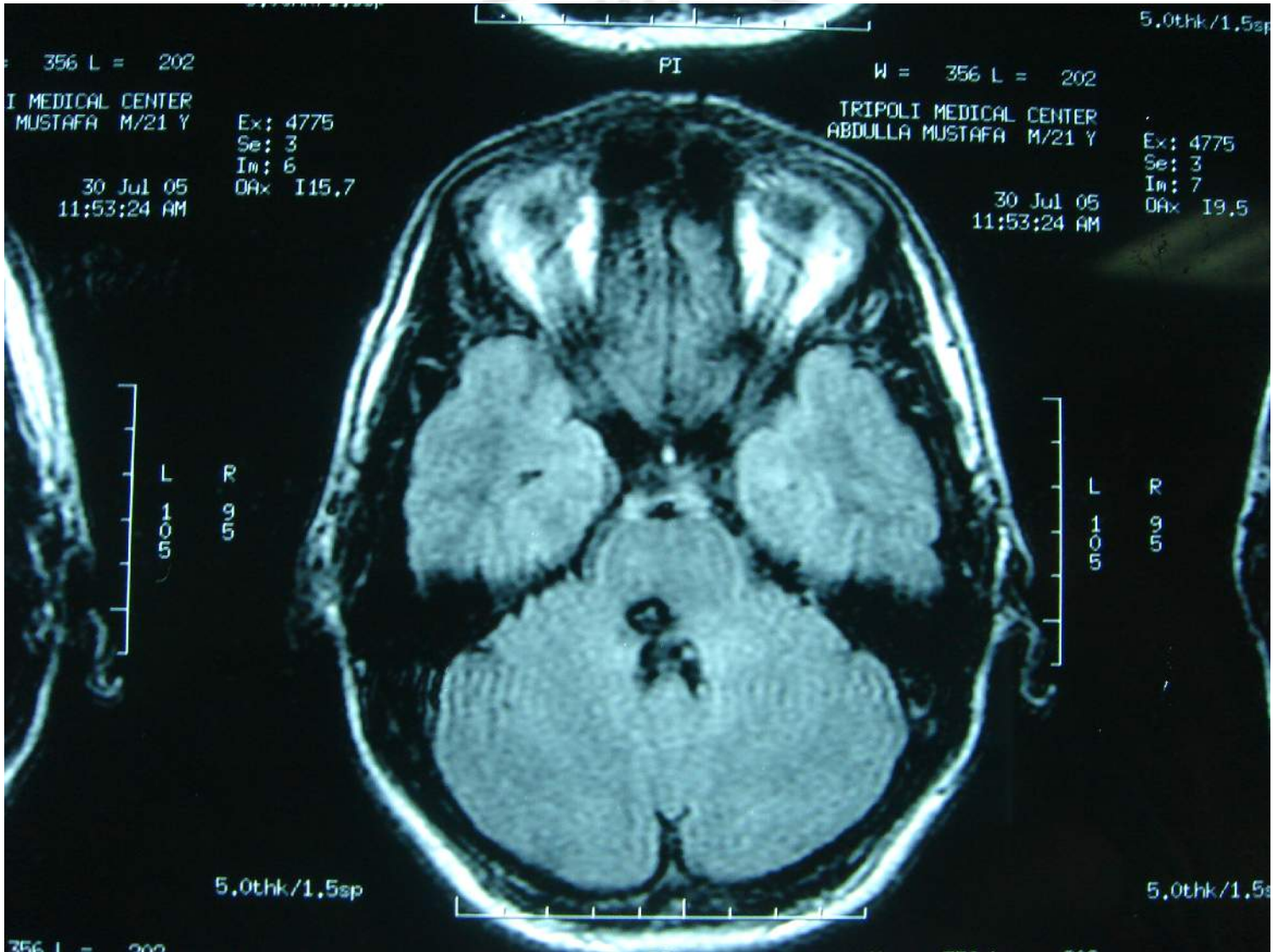
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5 cm

5 cm



Brainstem cavernoma

- **15 cases with 80 month follow-up treated conservatively**
- **13 were functionally independent with mild/moderate diasability**
- **5 operated cases – all had had at least 2 documented haemorrhages**

conclusions

- **Cavernoma interventions are usually elective and essentially prophylactic**
- **(intracerebral haematoma)**
- **Procedural risks need to be balanced against natural history**

Conclusions 2

- **Supratentorial cavernomas which present with haemorrhage should be entered into a randomised study**
- **Treatment versus no-treatment**

- **Thank you for your attention**
- **Angioma alliance uk – well done!**

