MMA Embolization for recurrent cSDH with Scepter-mini Occlusion Balloon and n-BCA

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Disclosures

- Martin Radvany, MD
  - ArtVentive Medical Group – Stock
  - Penumbra – Speaker
  - Boston Scientific – Consultant
  - Pylon Medical – Medical Advisory Board
- Davide Crocci, MD
  - Nothing to disclose

This Presentation will discuss off-label use of medical devices

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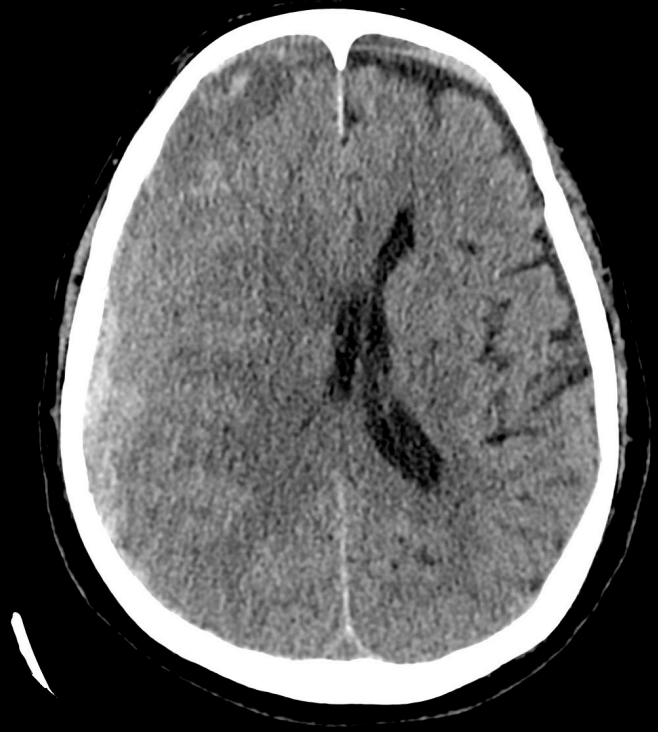
History

- 75-year-old male presented to the ED after falling and hitting his head outside in his garden.
- He reported falling approximately 10 days previously at which time he struck his head
- He underwent right sided burr hole drainage followed by bilateral particle MMA embolization (Post op CT May 7 demonstrates bilateral cSDH measuring > 8 mm)



May 6

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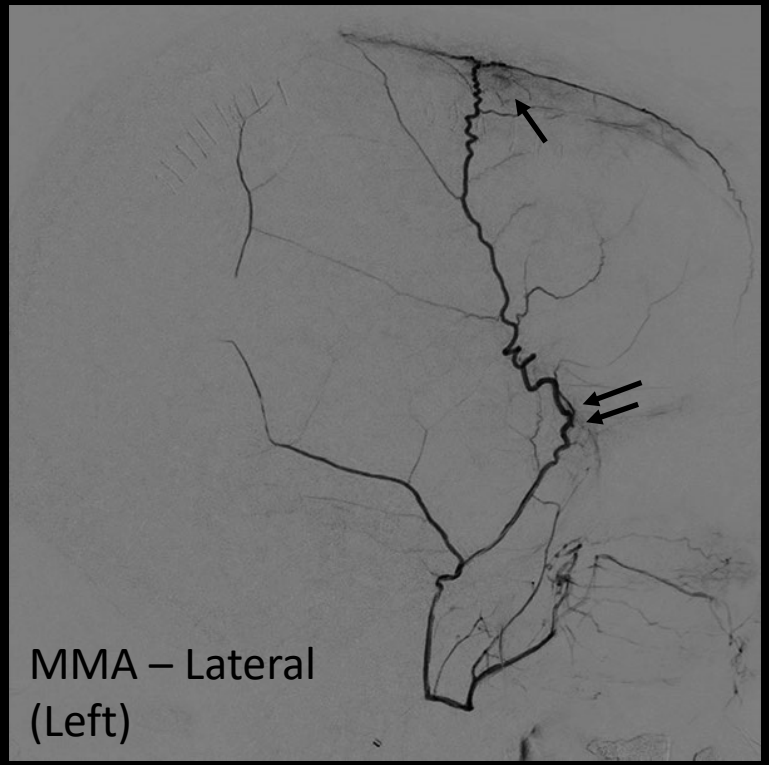
MMA embolization for cSDH

- Anterior division of MMA is enlarged
- Dura has a “cotton wool” appearance (arrow)
- Due to tortuosity of the MMA the microcatheter cannot be advanced distally and “wedged” in the anterior division of the MMA (double arrow)



MMA – Lateral (Left)

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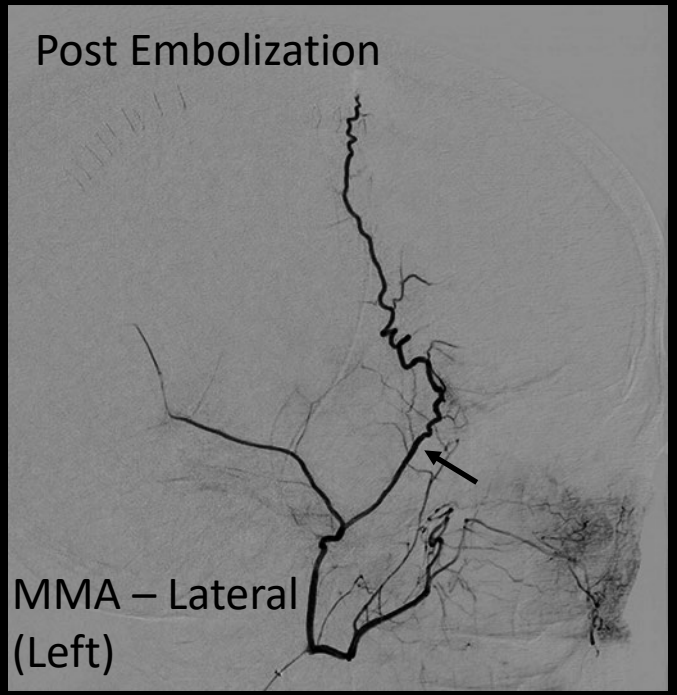
- Because the catheter could not be “wedged” in the vessel, flow directed embolization was performed with particles(100-300 μm Embospheres) from a more proximal location (arrow)
- Note pruning of the branches of the anterior MMA division post particle embolization



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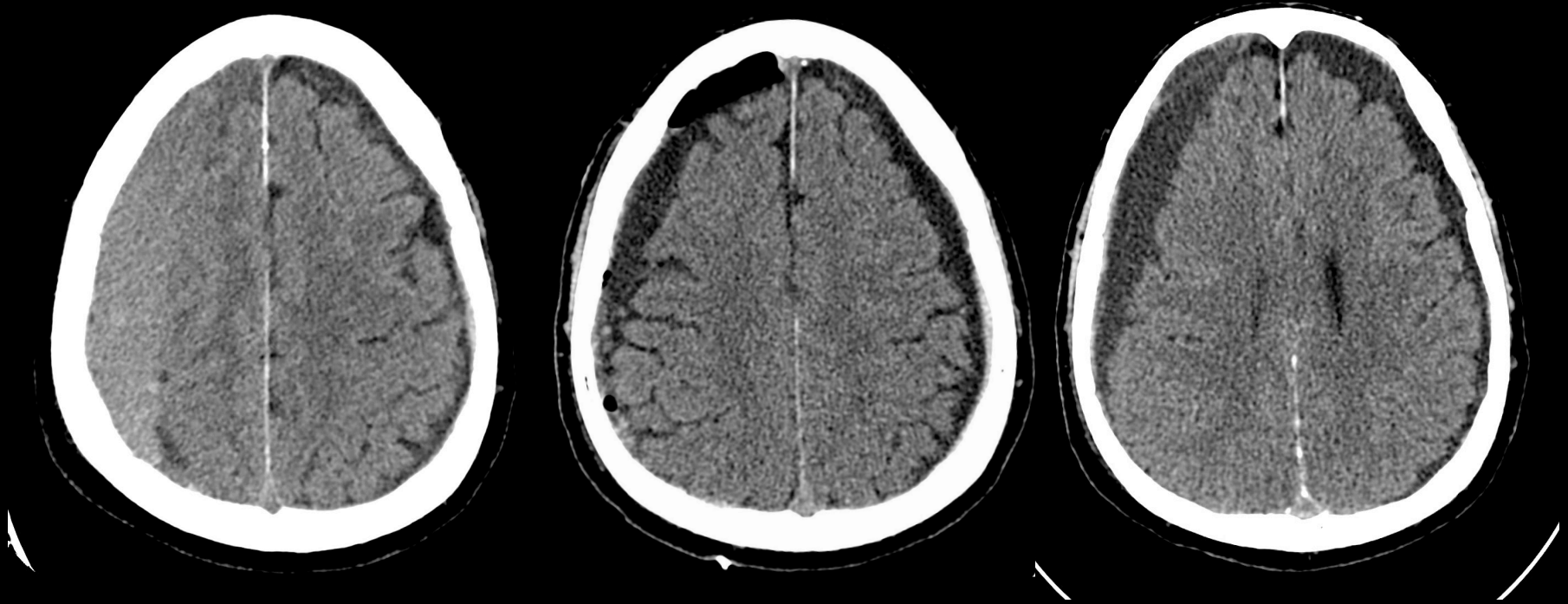

May 6
Pre-Intervention

May 7
Post-OP/EMBO

May 23
Follow up

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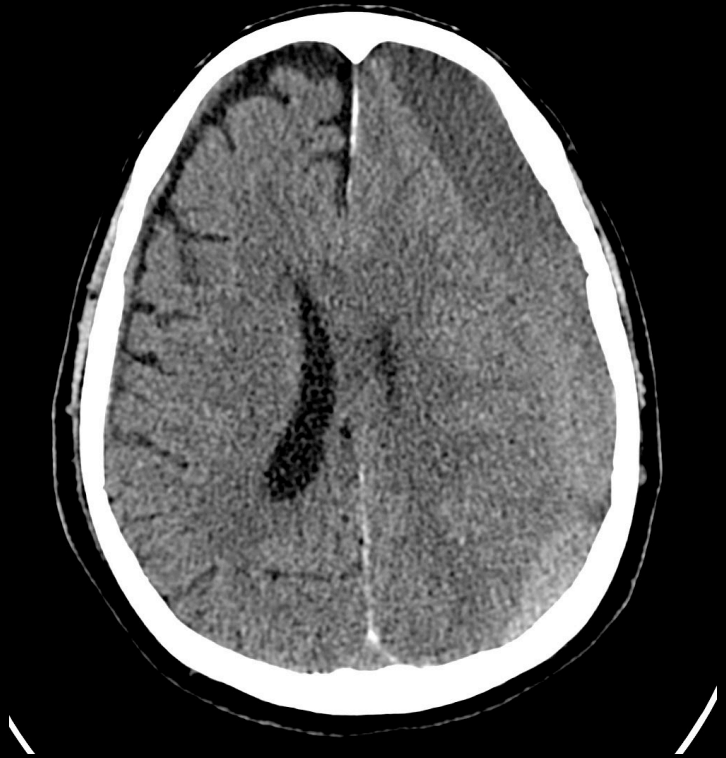
- Patient returned to ED approximately 1 month later with complaints of increasing fatigue and gait instability as well as word finding difficulty
- Repeat head CT demonstrates continued resolution of right cSDH with enlargement of left sided cSDH.
- Patient underwent left sided burr hole drainage and repeat left MMA embolization with liquid embolic n-BCA



June 22

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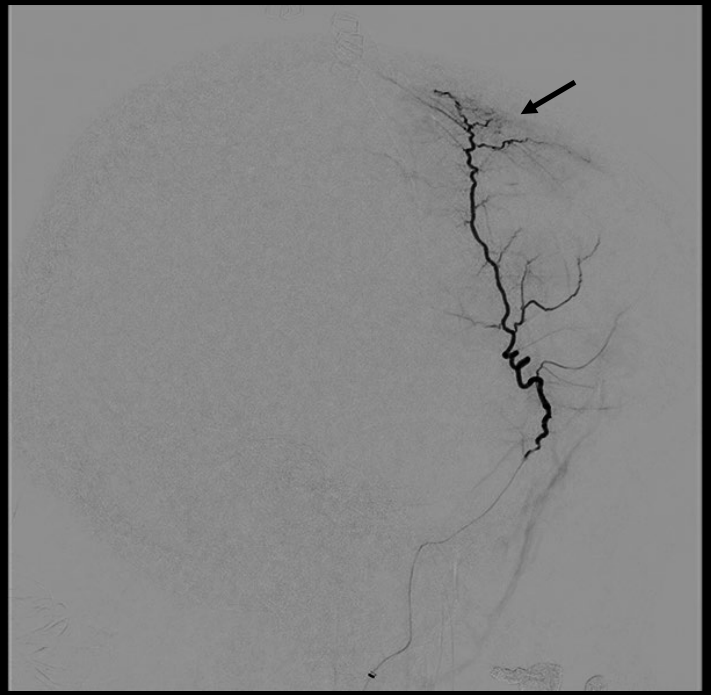
- Repeat angiogram demonstrates recanalization of anterior division branches
- Note hyperemia (cotton wool) appearance of dura (arrow)
- Due to vessel tortuosity and size, liquid embolization performed with Lipiodol and nBCA (5:1) using a dual lumen occlusion balloon positioned in anterior division of MMA



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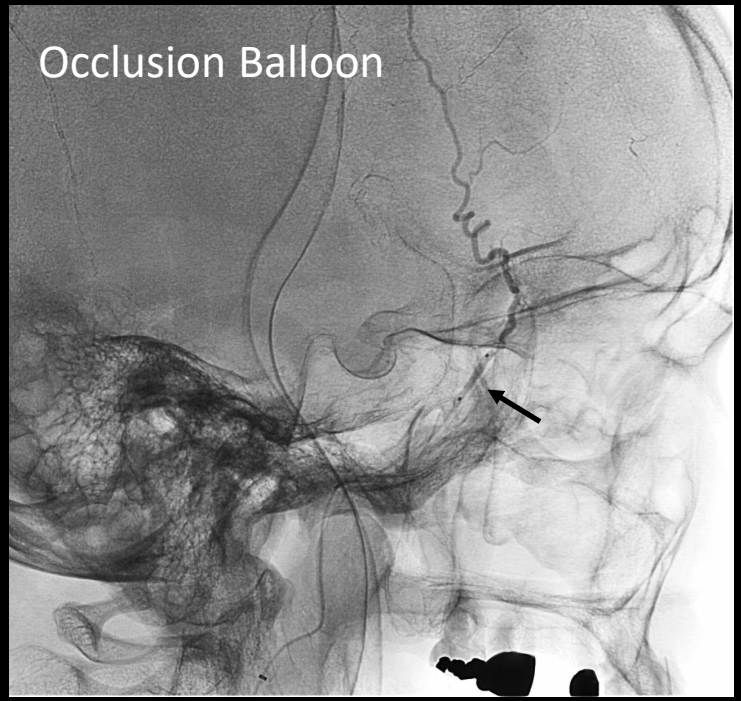
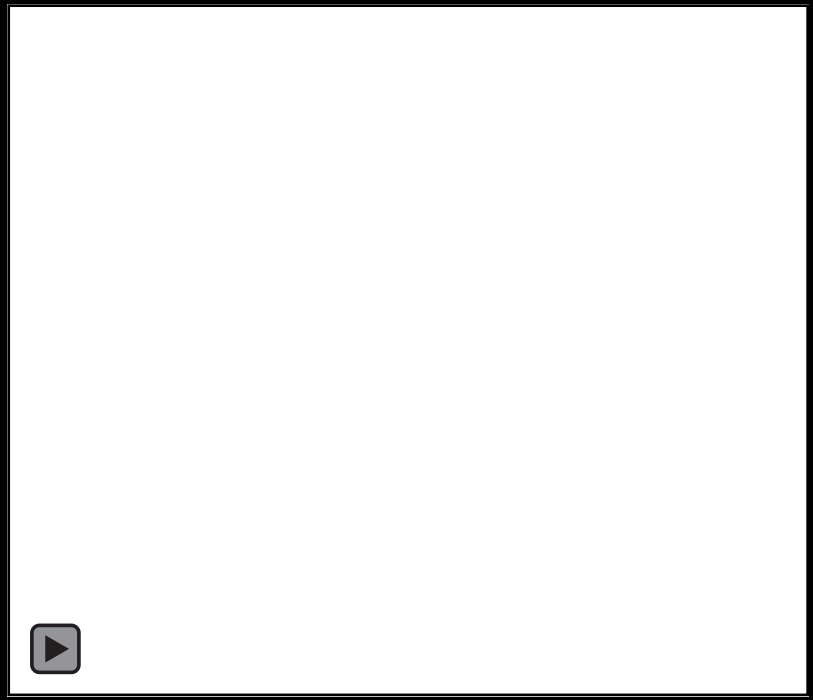
Embolization with occlusion balloon





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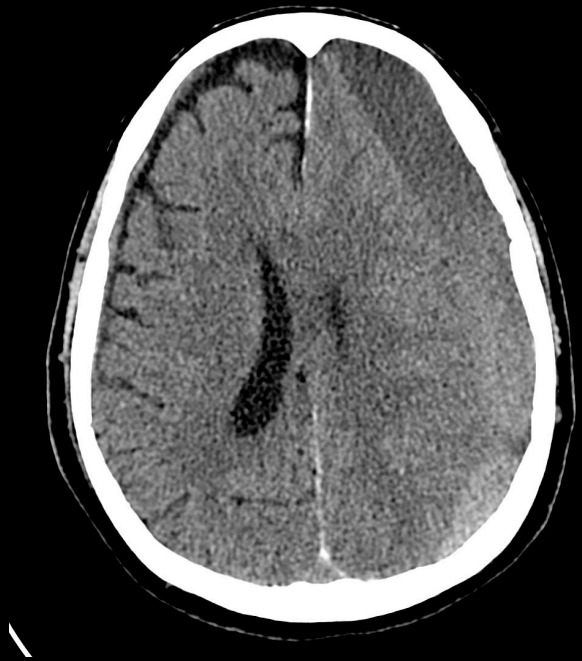
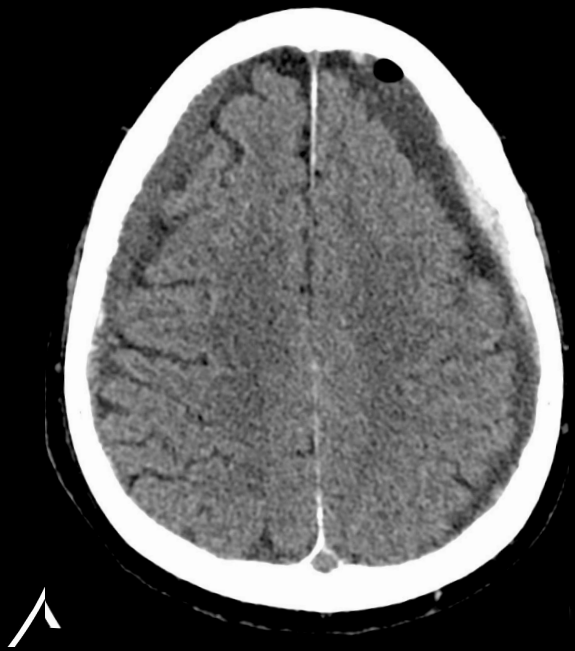
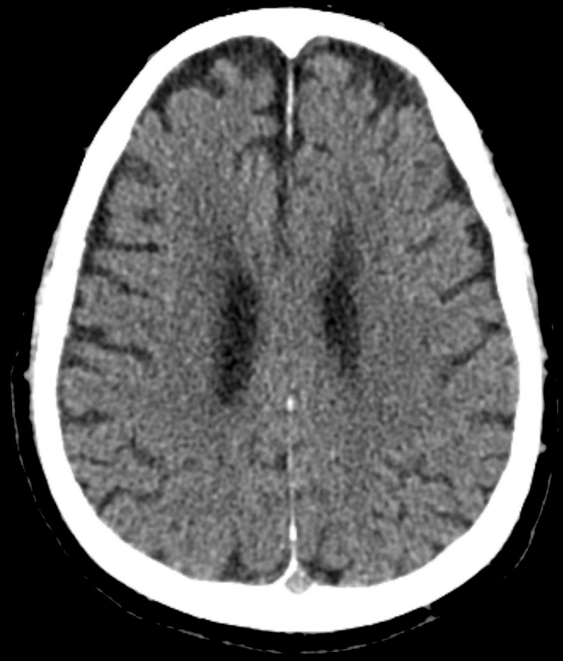


June 22



June 27
Post OP/EMBO



August 22
Follow up

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Teaching Points

- MMA embolization for cSDH decreases the risk of cSDH recurrence after surgery.
- Flow directed embolization can be performed with particles, but the catheter must not occlude antegrade blood flow in the vessel
- As opposed to flow directed embolization, embolization with a liquid agent requires the catheter to be wedged to prevent reflux of the liquid embolic agent
- A dual-lumen occlusion balloon may be used with liquid embolic agents when a single lumen catheter cannot be advanced into a wedged position because the vessel is too tortuous or too large.

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