

Neuroradiology Case Conference

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DEFUSE 3 study (Jan 24th 2018)

- Multicenter, randomized, trial, conducted at 38 U.S. centers.
- Endovascular thrombectomy resulted in better functional outcomes than standard medical therapy alone among patients who:
 - presented 6 to 16 hours after they were last known to be well,
AND
 - had proximal MCA or ICA occlusion,
AND
 - had salvageable ischemic brain tissue.

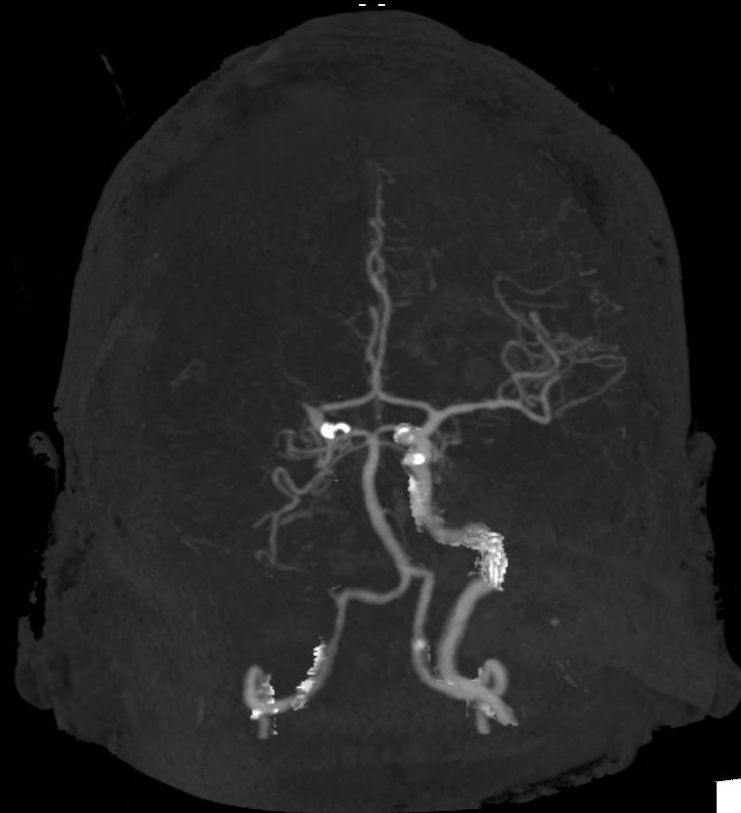
DEFUSE 3 study (Jan 24th 2018)

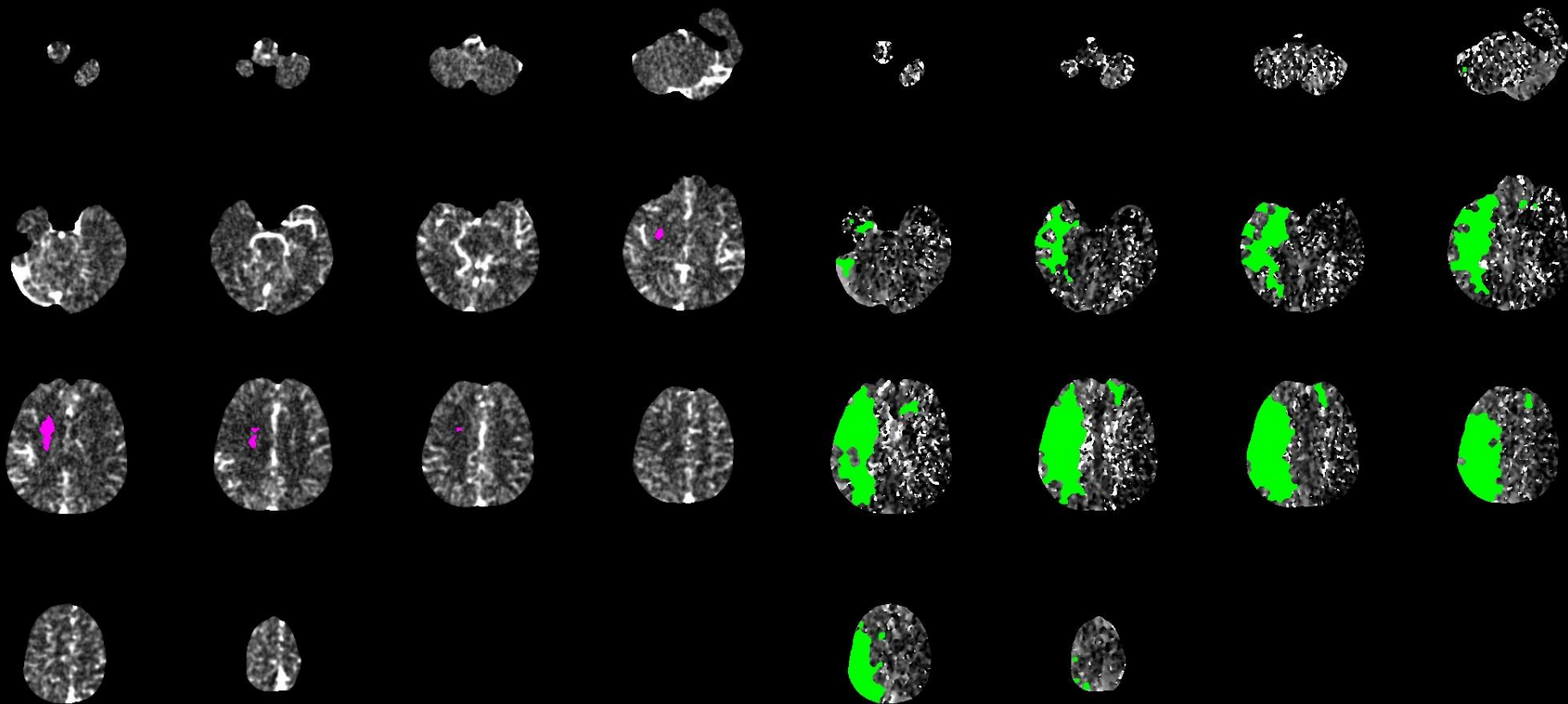
- Salvageable ischemic brain tissue is defined as CT or MR perfusion mismatch as follows:
 - ischemia "core" volume < 70 ml
 - mismatch ratio > 1.8
 - mismatch volume 15 ml or larger

Case ID – 30513437

- 02/10/18
- 62 year old M with history of HTN
- Left sided weakness since he woke up
- Stroke code called

Initial Head CT and CTA showed complete occlusion of the right ICA and MCA.





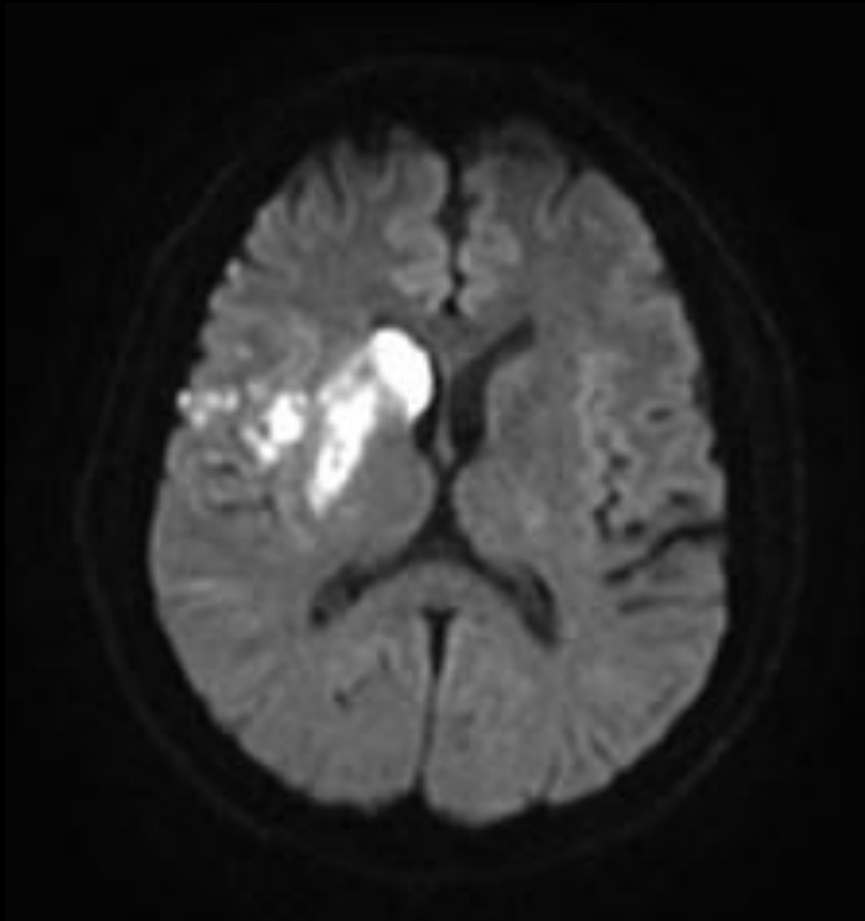
CBF<30% volume: 6 ml

Tmax>6.0s volume: 275 ml

Mismatch volume: 269 ml
Mismatch ratio: 45.8



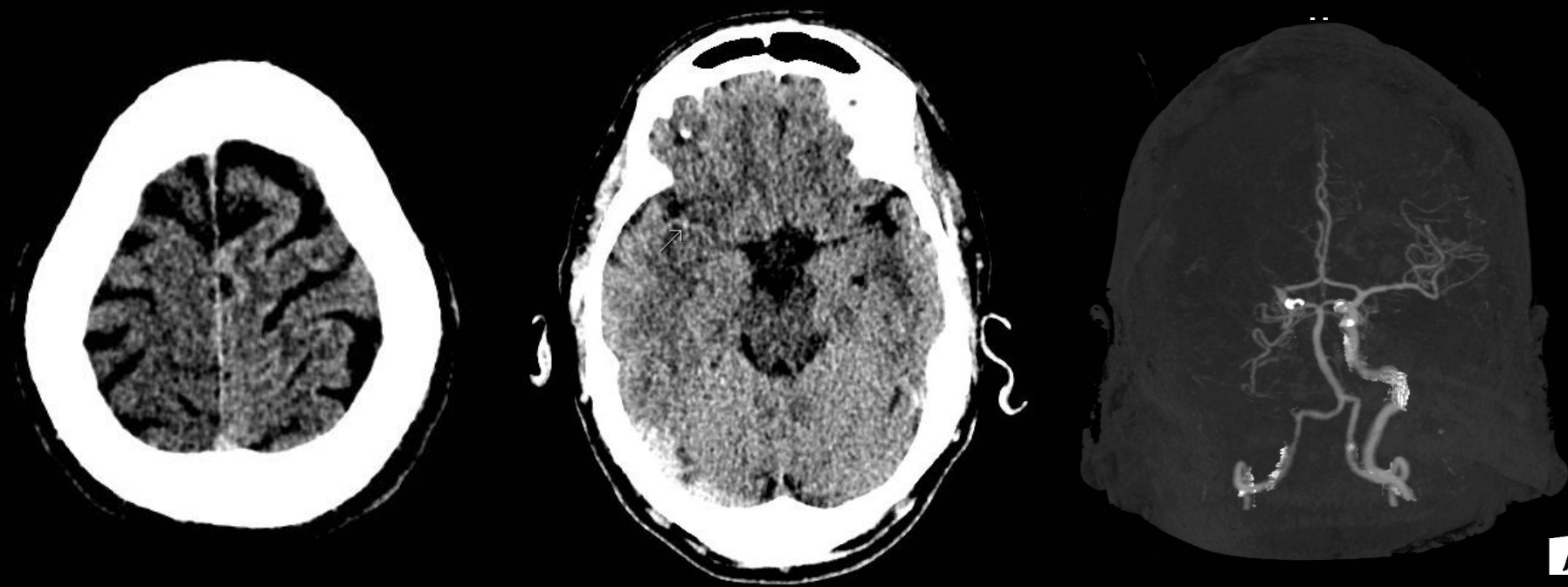
Post IR Thrombectomy MRI and MRA

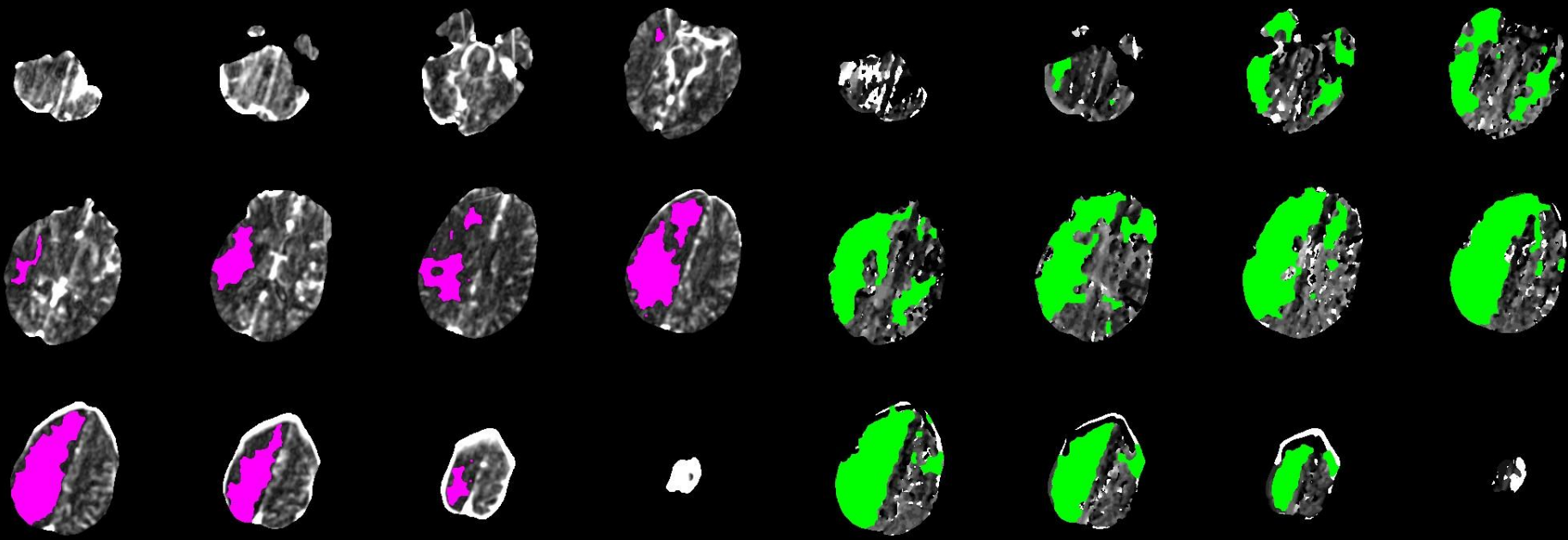


Companion Case – 30217676

- 02/09/18
- 56 year old M
- Left sided weakness
- Stroke code called

Initial Head CT and CTA showed complete occlusion of the right ICA and MCA.





CBF<30% volume: 155 ml

Tmax>6.0s volume: 450 ml

Mismatch volume: 295 ml

Mismatch ratio: 2.9

Eligibility criteria for embolectomy from DEFUSE 3 study

- 1) age 18-85; NIHSS of 6 or greater
- 2) 6-16 hours out from onset or awoke w/ symptoms
- 3) ICA or MCA-M1 occlusion (with or without tandem lesions) on CTA or MRA
- 4) CT or MR perfusion mismatch as follows:
 - ischemia "core" volume < 70 ml
 - mismatch ratio > 1.8
 - mismatch volume 15 ml or larger (calculated by RAPID based on $T_{max} > 6$ sec and $CBF < 30\%$)

References

- Thrombectomy for Stroke at 6 to 16 Hours with Selection by Perfusion Imaging. Albers GW, Marks MP, Kemp S, et al; DEFUSE 3 Investigators. N Engl J Med. 2018 Jan 24.
<http://www.nejm.org/doi/pdf/10.1056/NEJMoa1713973>