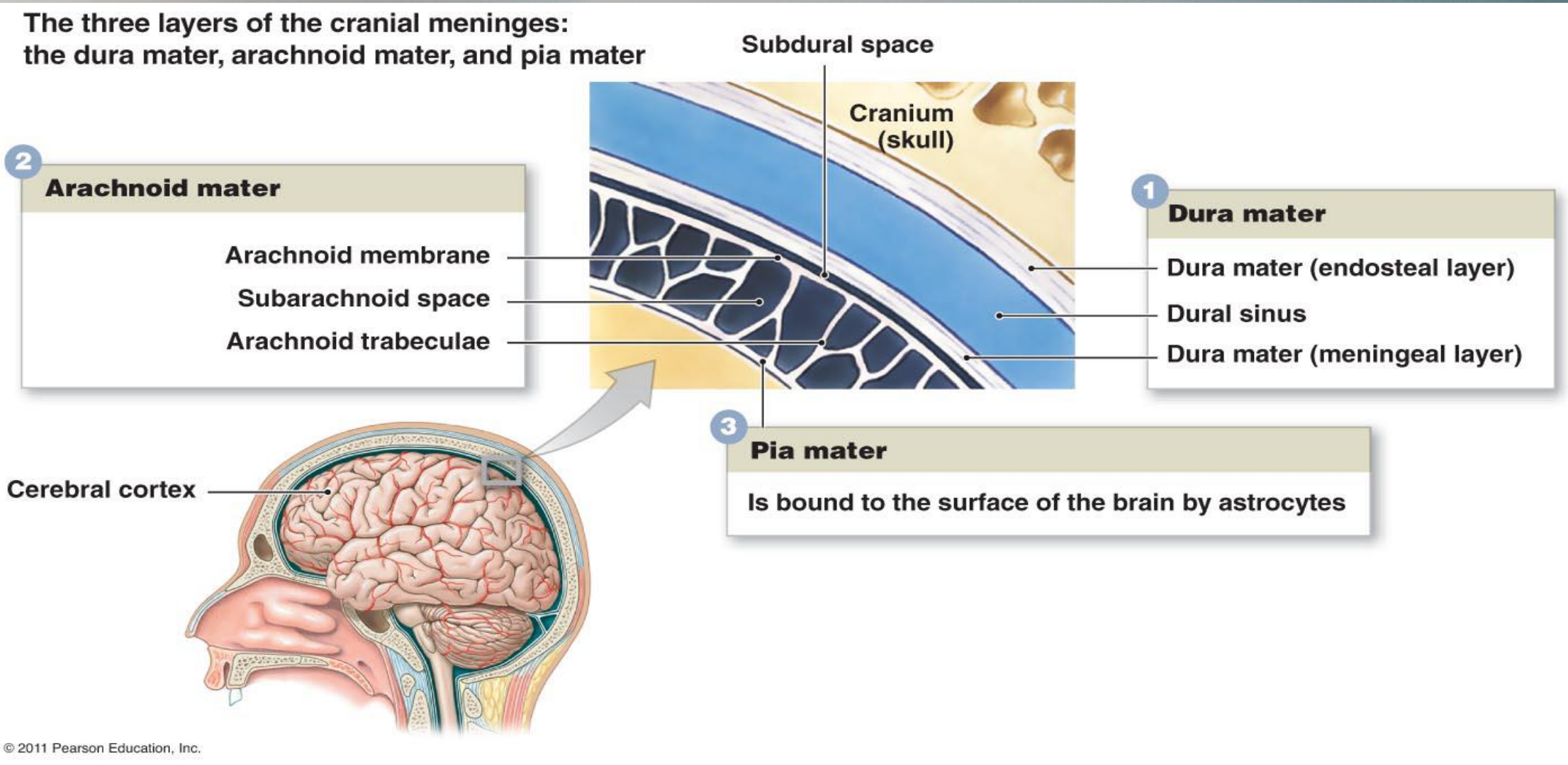
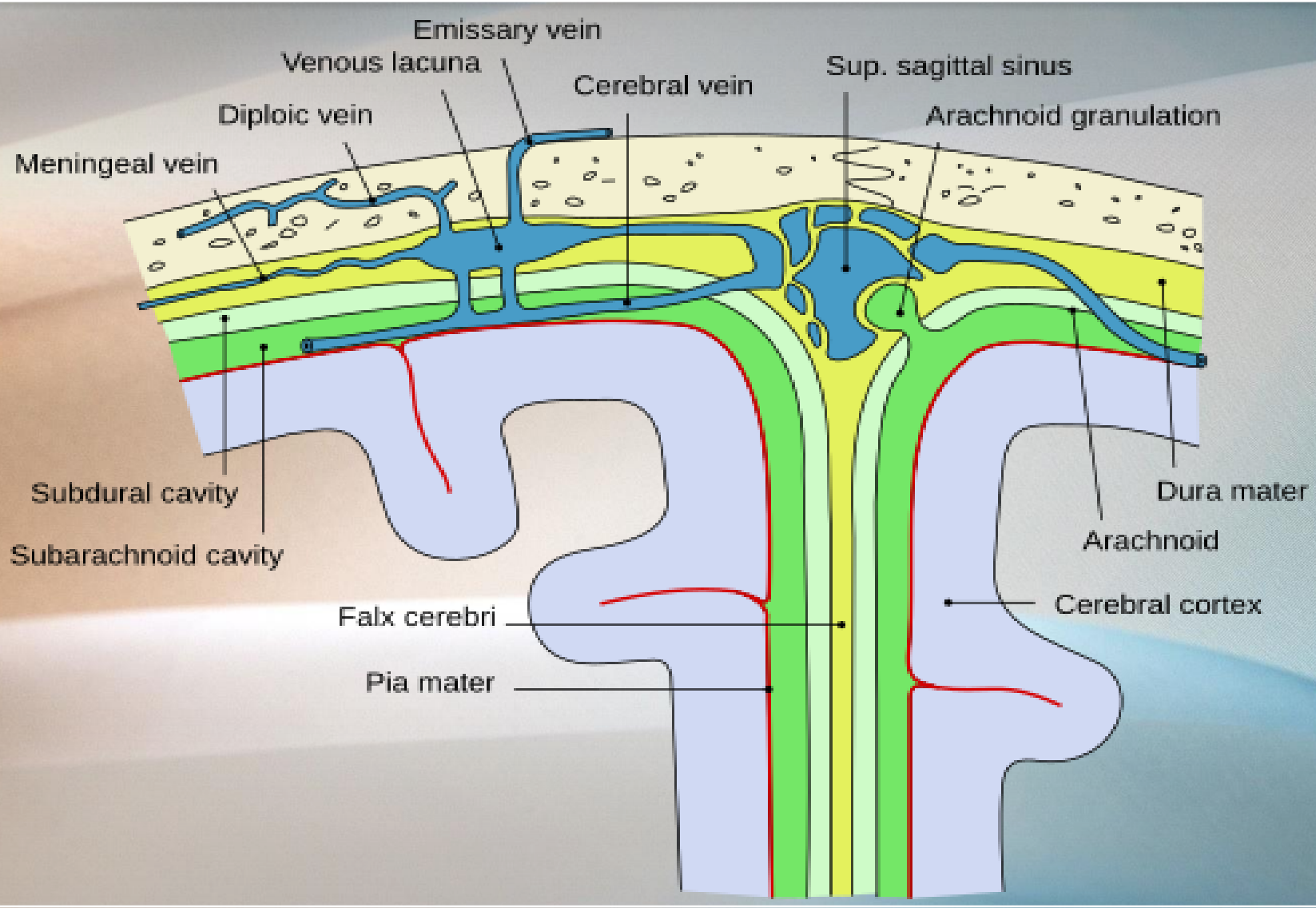
HEMORRHAGIC STROKE

13 % OF STROKE CASES

INTRACEREBRAL OR EXTRACEREBRAL (SUBARACHNOID/EPIDURAL, SUBDURAL)

The three layers of the cranial meninges:
the dura mater, arachnoid mater, and pia mater




Emissary vein
Venous lacuna
Cerebral vein
Sup. sagittal sinus
Diploic vein
Arachnoid granulation
Meningeal vein
Subdural cavity
Dura mater
Arachnoid
Subarachnoid cavity
Cerebral cortex
Falx cerebri
Pia mater

MIDDLE MENINGEAL ARTERY EMBOLIZATION TO TREAT **CHRONIC** SUBDURAL HEMATOMA

CHRONIC VS ACUTE SUBDURAL HEMATOMA

THESE ARE COMPLETELY DIFFERENT DISEASE PROCESSES.

ACUTE SDH IS CREATED BY TRAUMA & TEARING OF BRIDGING VEINS.
IMMEDIATE MASS EFFECT OCCURS.
VERY HIGH MORTALITY RATE.

CHRONIC SDH IS IN THE ELDERLY.
IT IS CHARACTERIZED BY REPETITIVE MICROBLEEDS AND FLUID EXUDATION FROM INFLAMMATORY NEOVASCULAR MEMBRANES.
AVERAGE AGE OF PATIENT IS LATE 70'S.

CHRONIC SDH IS NOT OFTEN ACUTELY FATAL
BUT HAS SIGNIFICANT MORBIDITY AND DISABILITY.

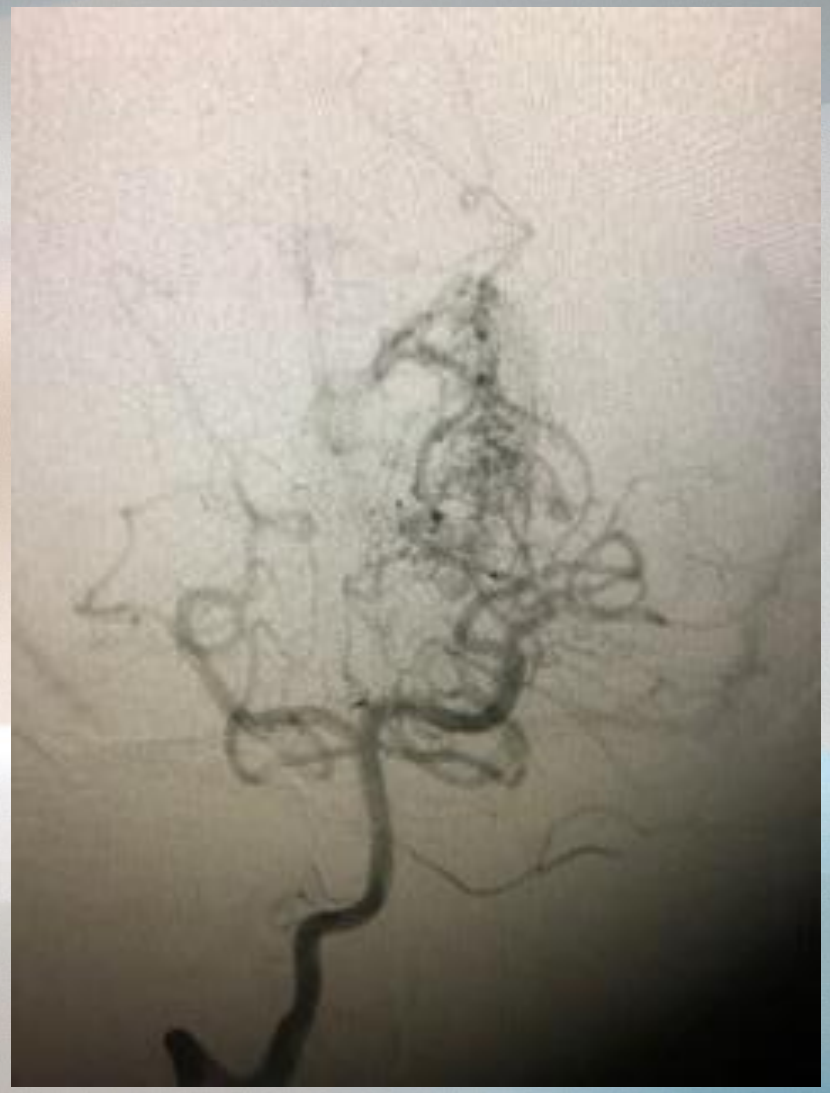
HISTORICAL TREATMENT IS SURGICAL EVACUATION,
BUT RECURRENT RATE IS HIGH
(20%)

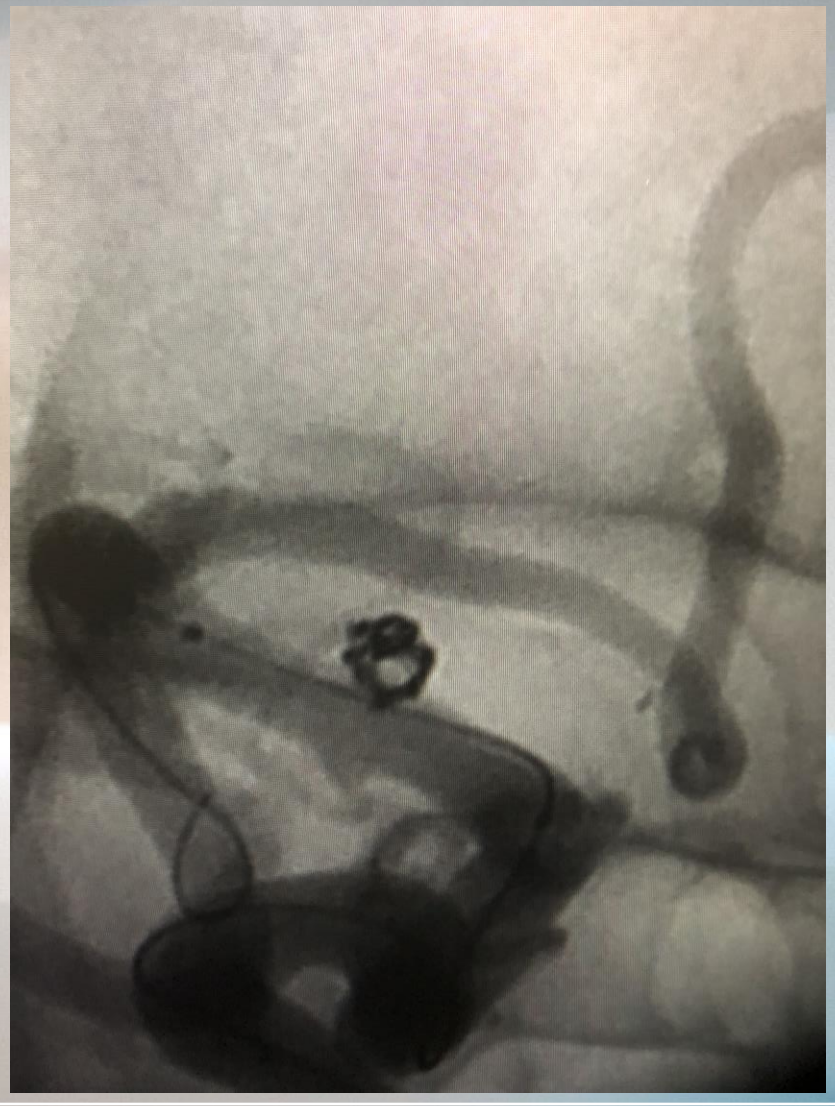
THE BLOOD SUPPLY TO SUBDURAL SPACE IS MIDDLE MENGEAL ARTERY WITH NERVE INTERVATION FROM 5^{TH} NERVE.

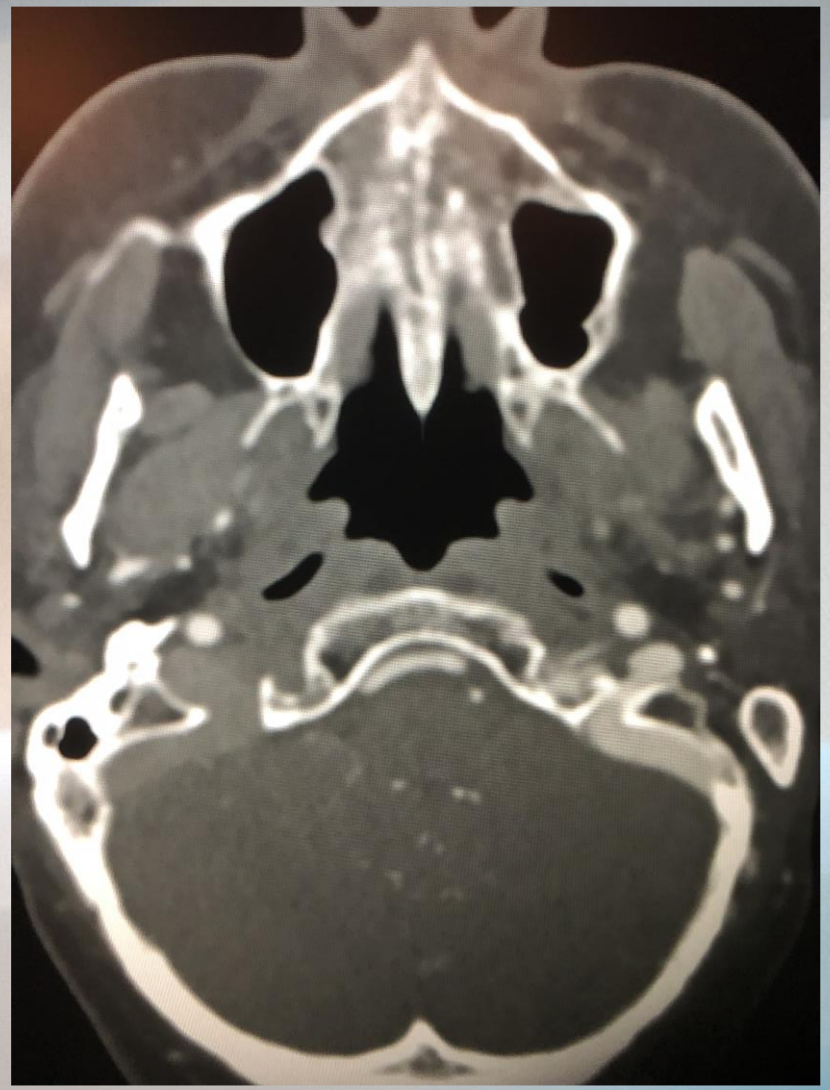
WITHIN THE LAST DECADE BETTER UNDERSTANDING OF THE DISEASE OF CSDH HAS EMERGED. THIS IS NOT A DISEASE OF VENOUS OOZING. TRAUMA IMITATES THE FORMATION OF INFLAMMATORY NEOVASCULAR MEMBRANES DUE TO DAMAGE TO DURAL BORDER CELLS. THIS LEADS TO INFLAMMATION OF PROANGIOGENIC CELLS. THESE CELLS CREATE NEOVASCULAR MEMBRANES THAT OOZE AND BLEED.

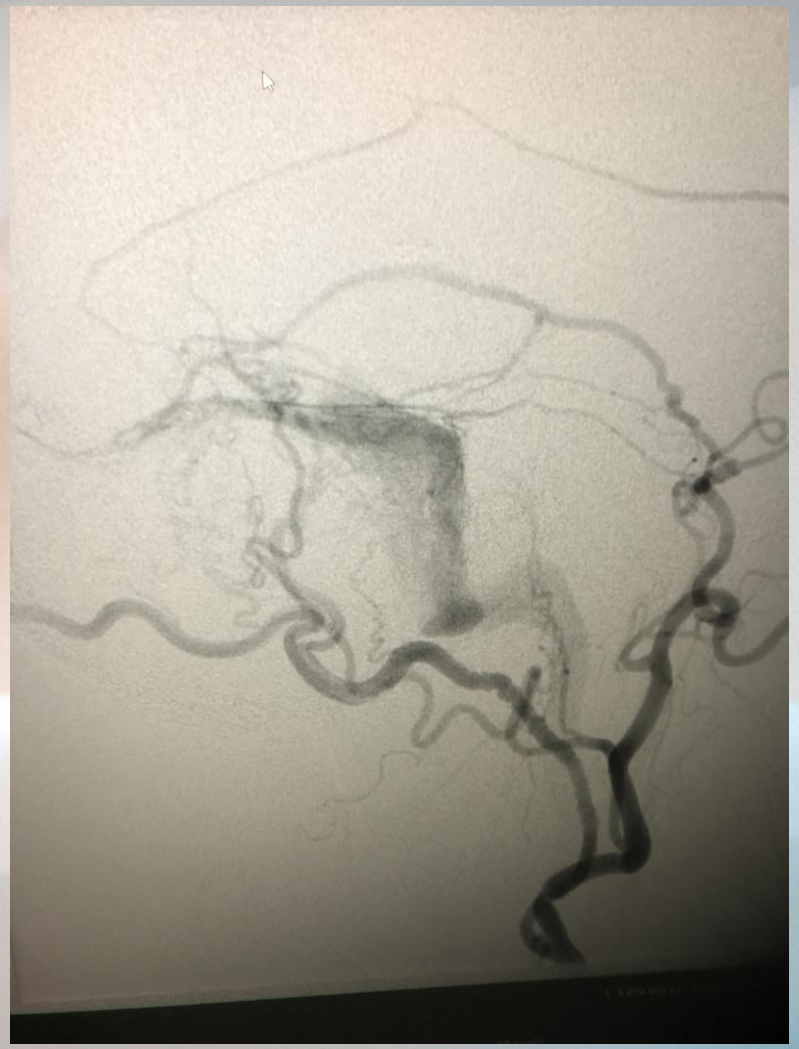
MMA EMBOLIZATION HAS THUS COME TO THE FOREFRONT OF CHRONIC SDH TREATMENT.

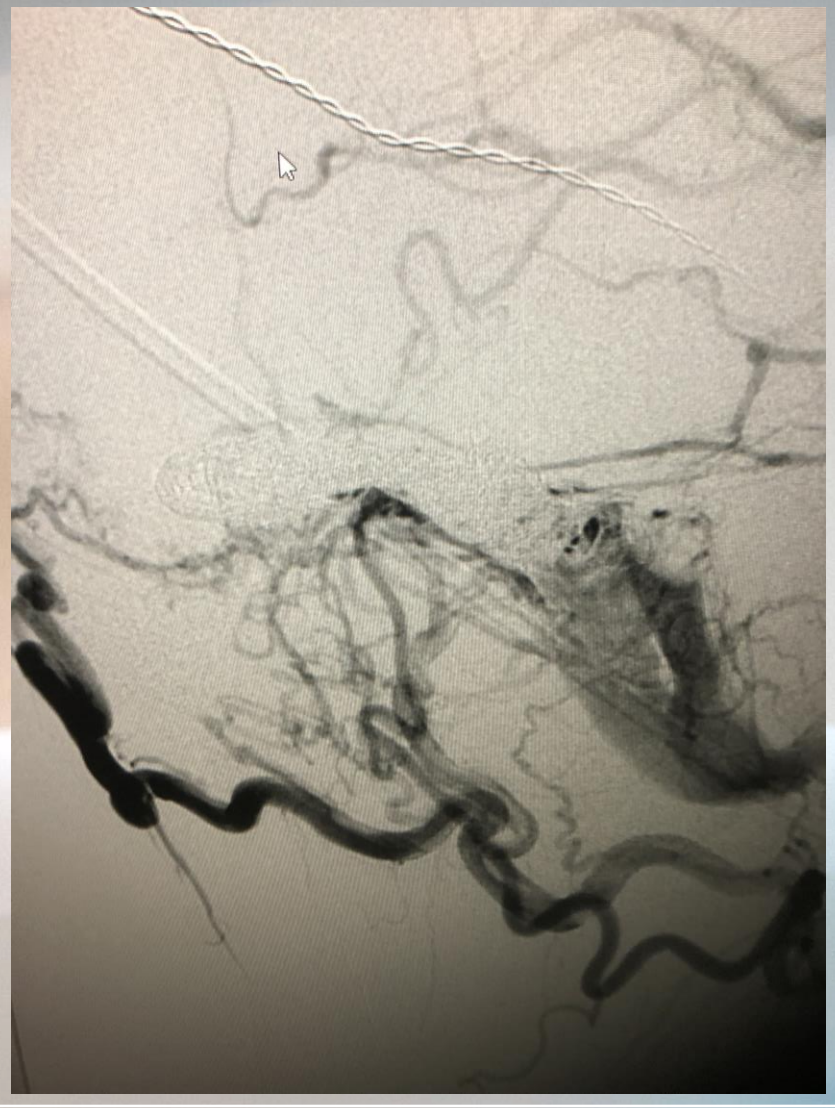
MULTIPLE STUDIES SHOW NOT ONLY NONINFERORITY BUT ACTUAL IMPROVED OUTCOMES WITH EQUAL IN-HOSPITAL COMPLICATION RATES.

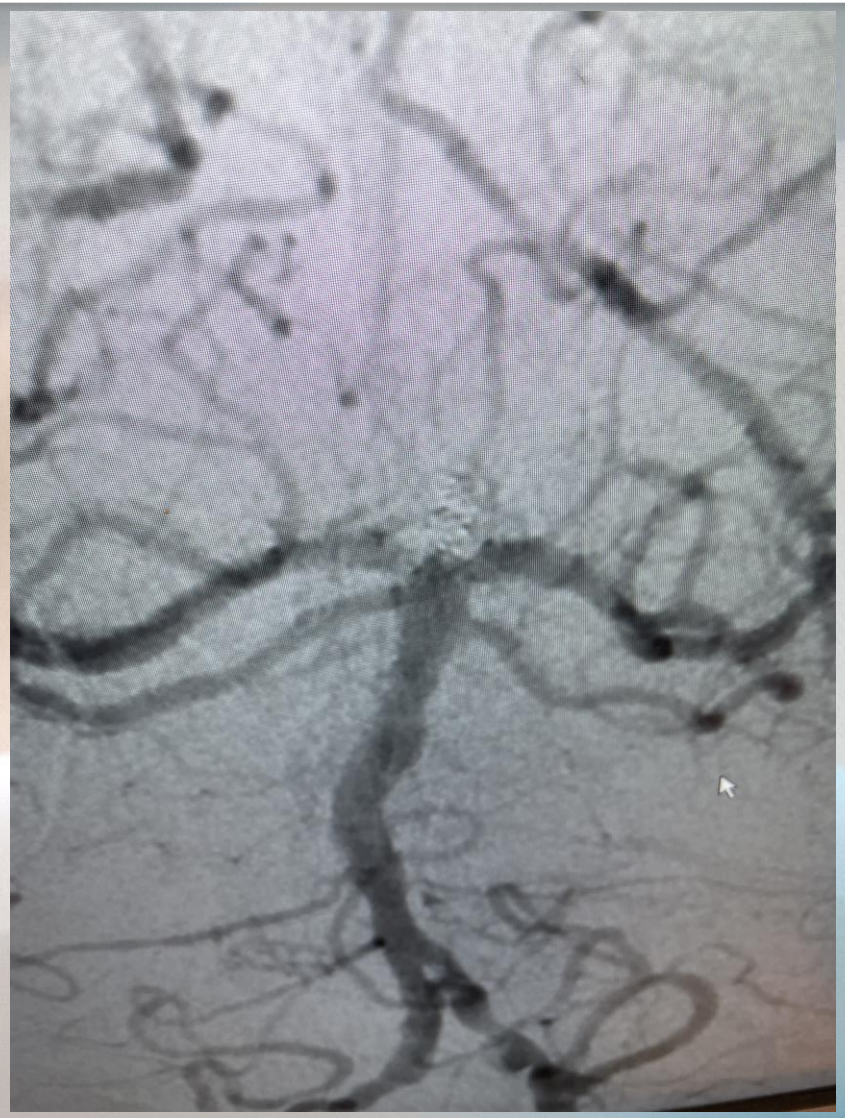


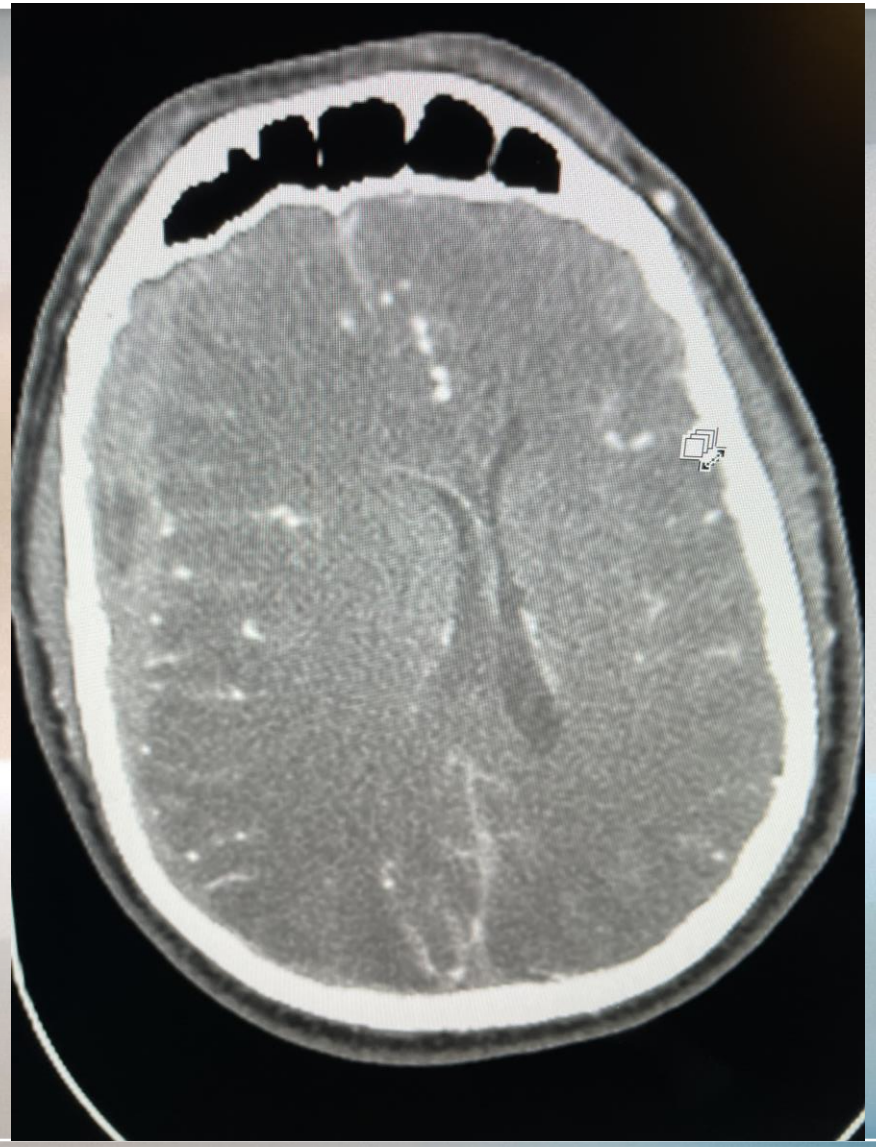


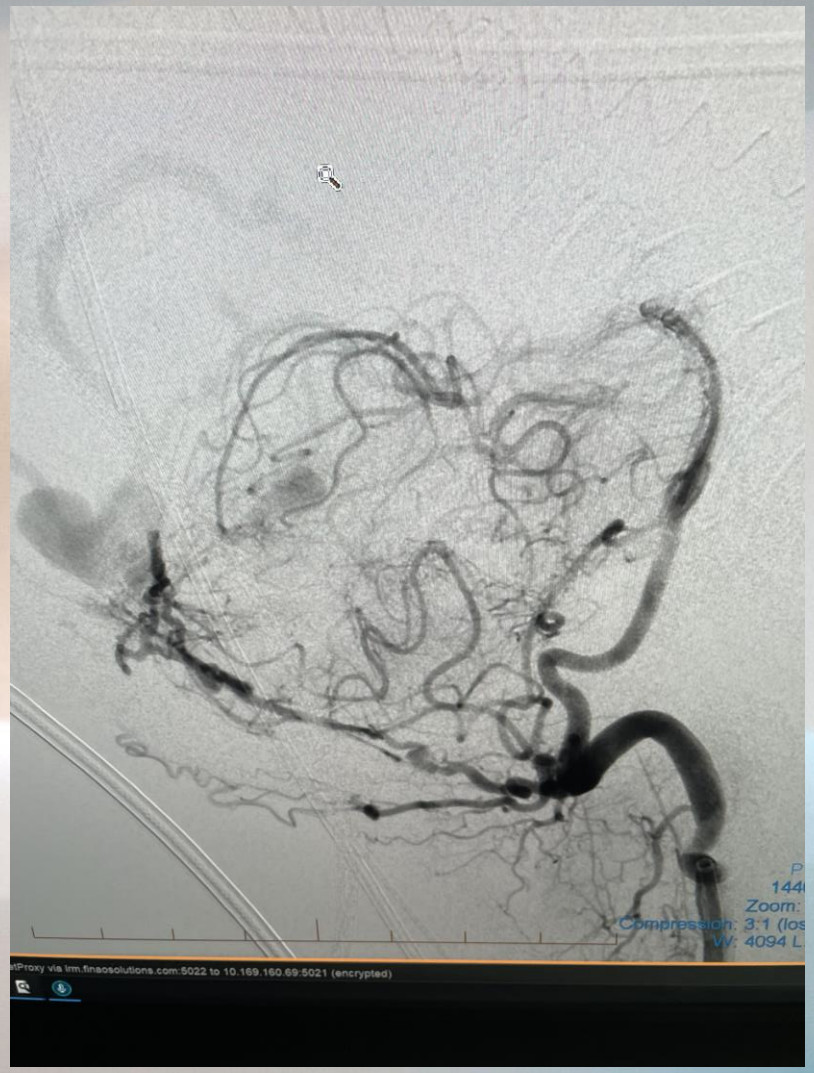








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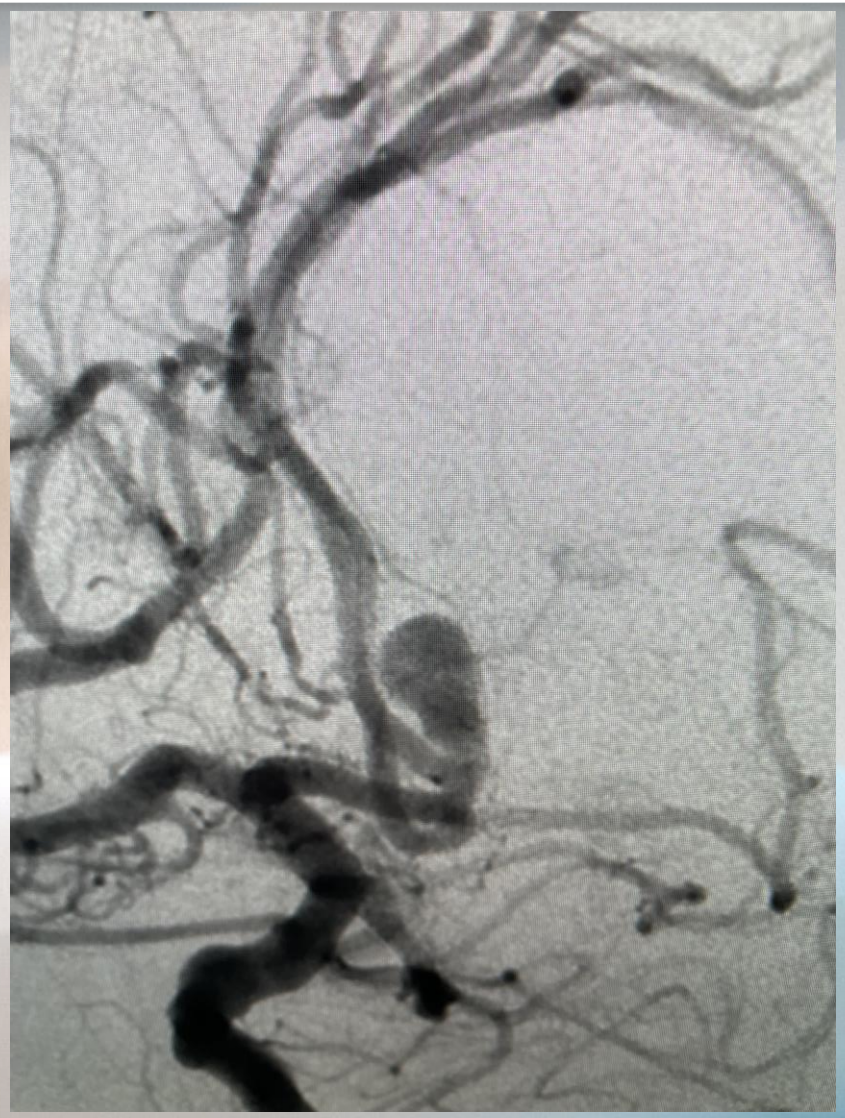

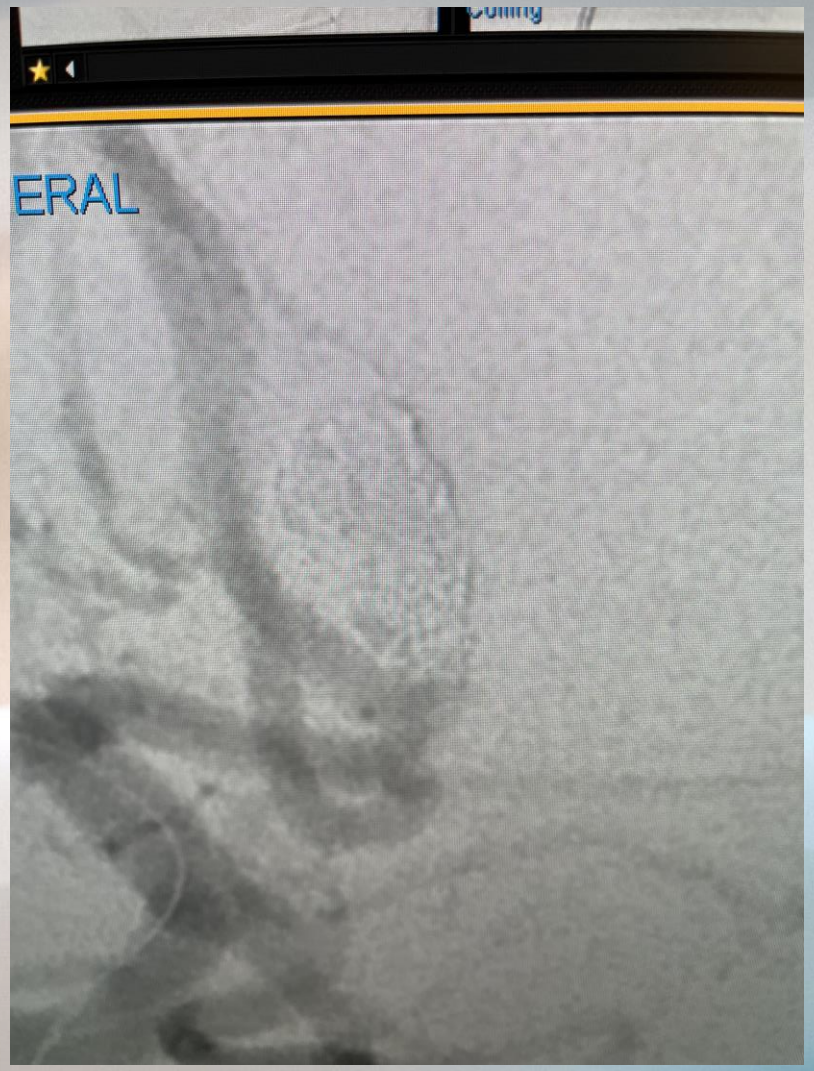
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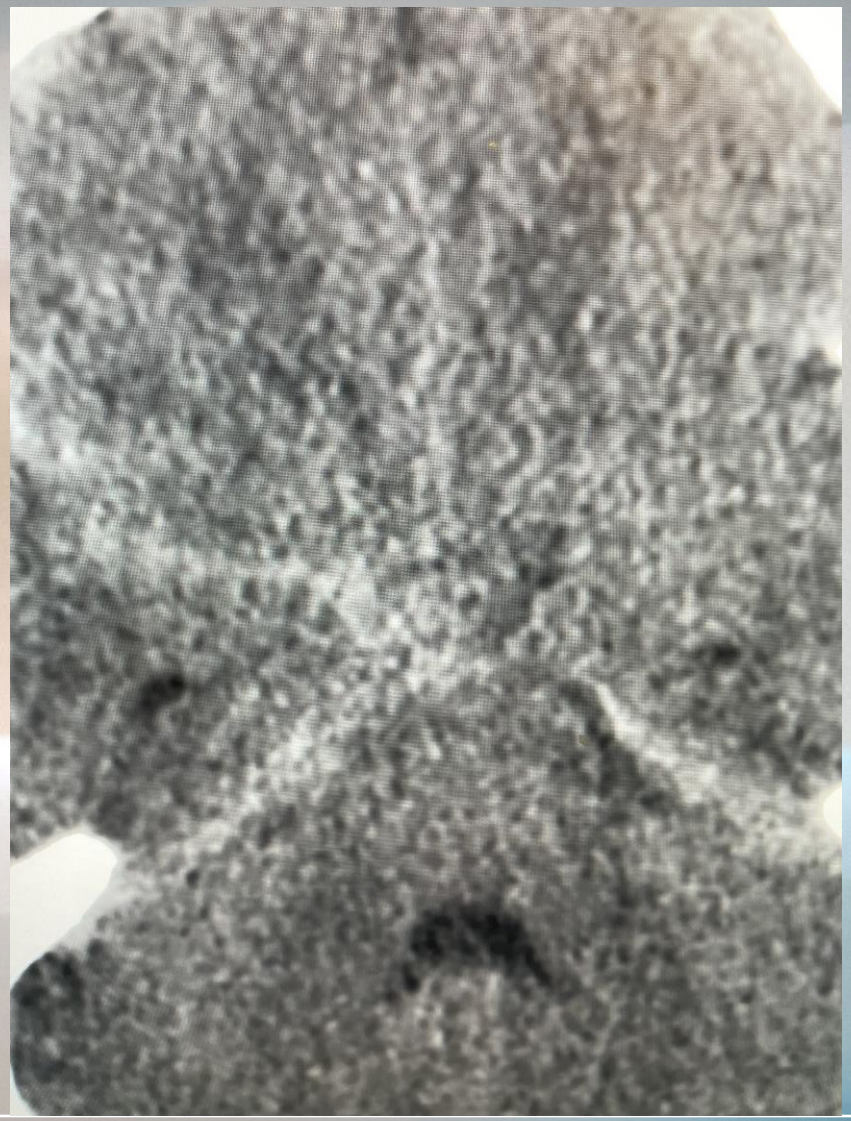

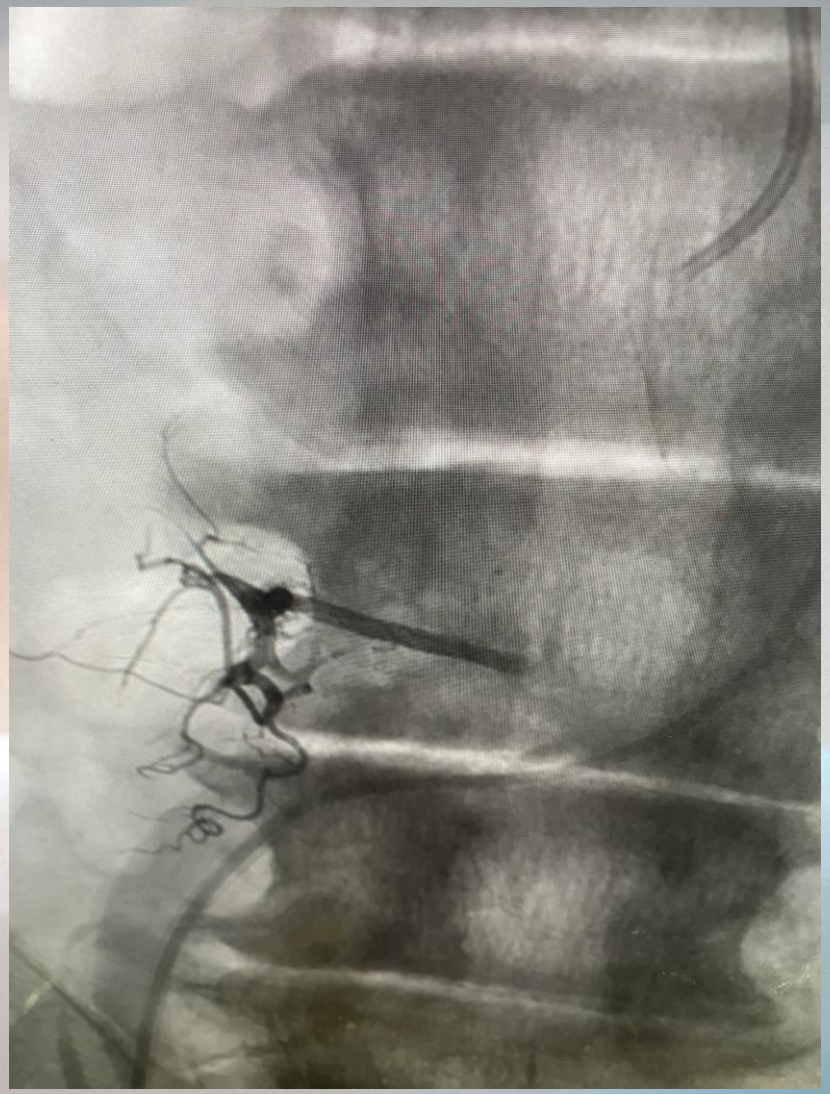


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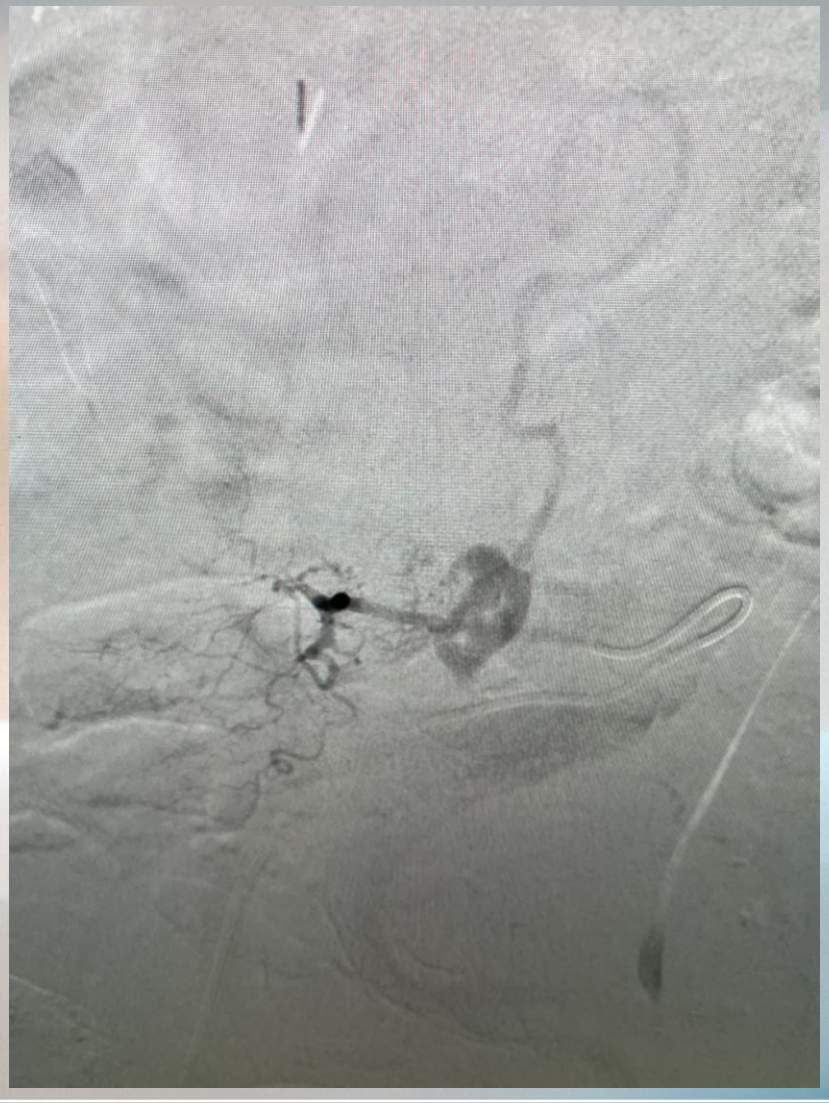

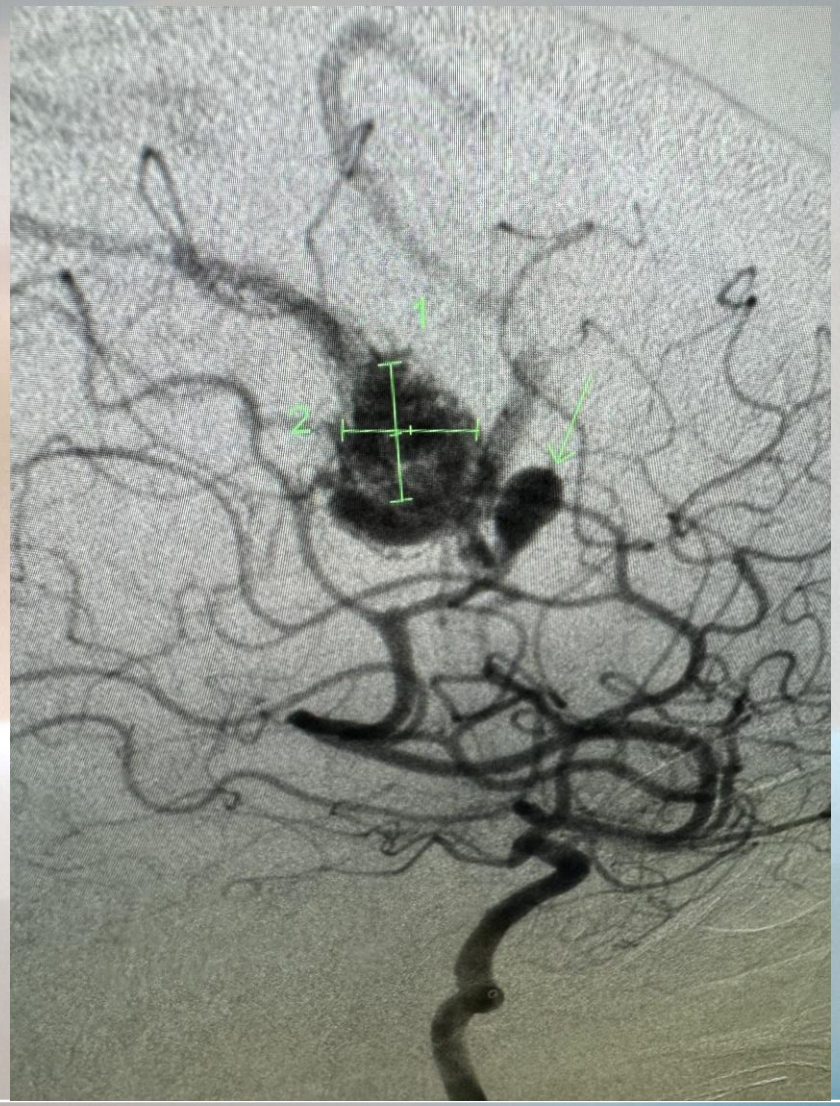
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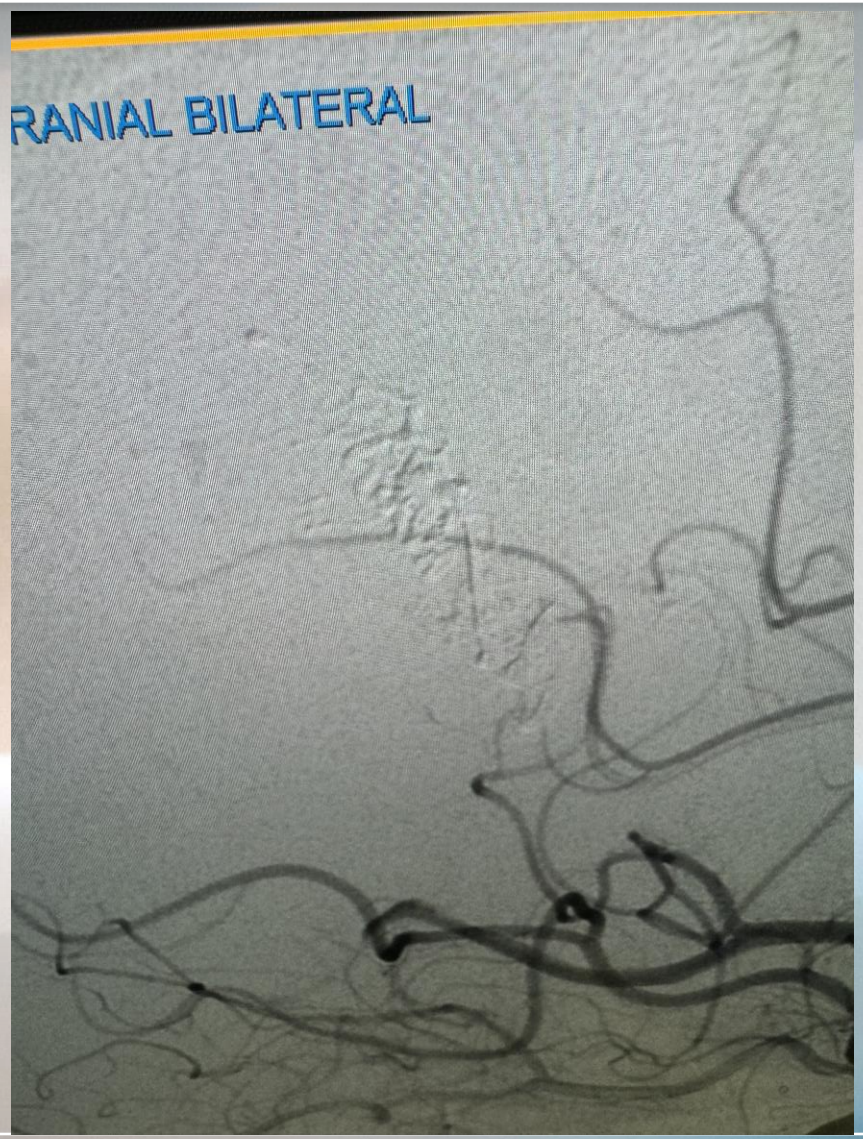
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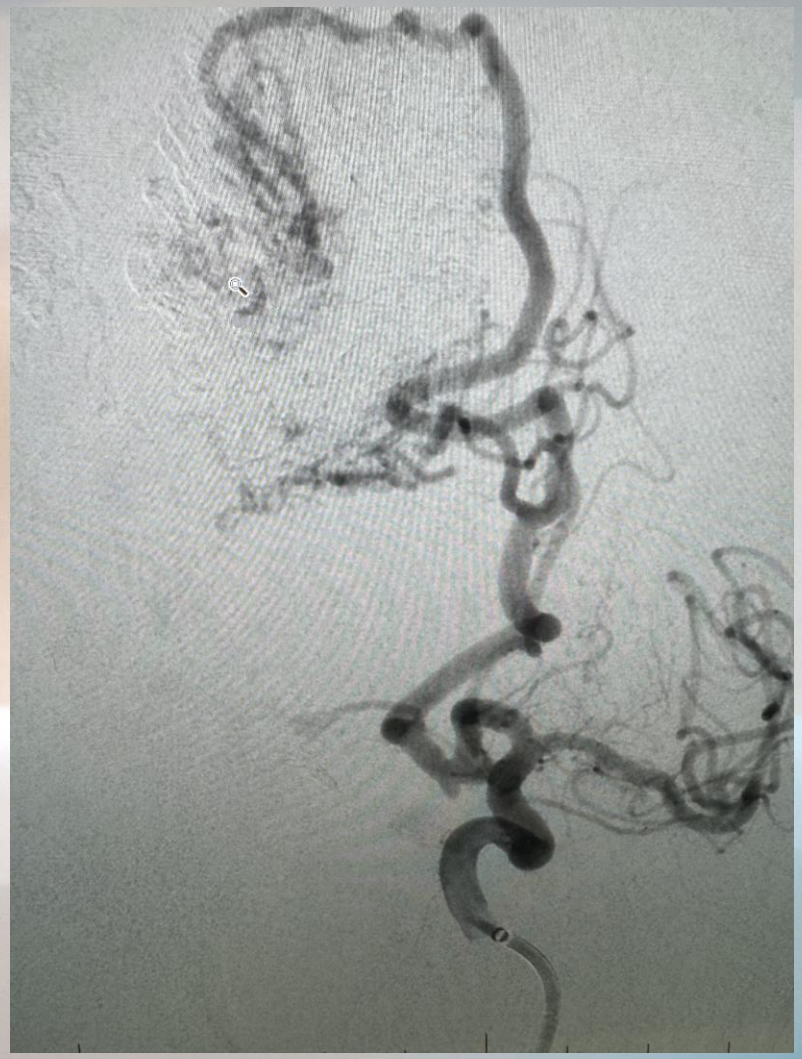

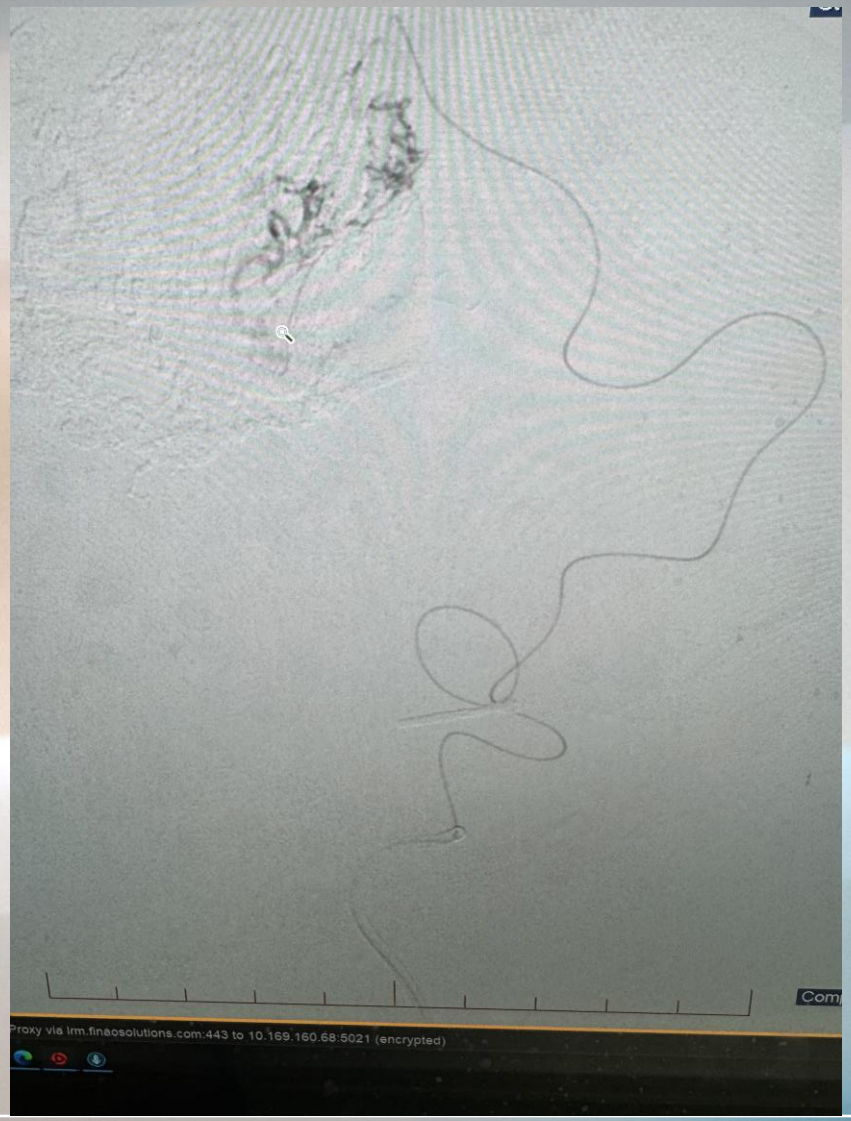
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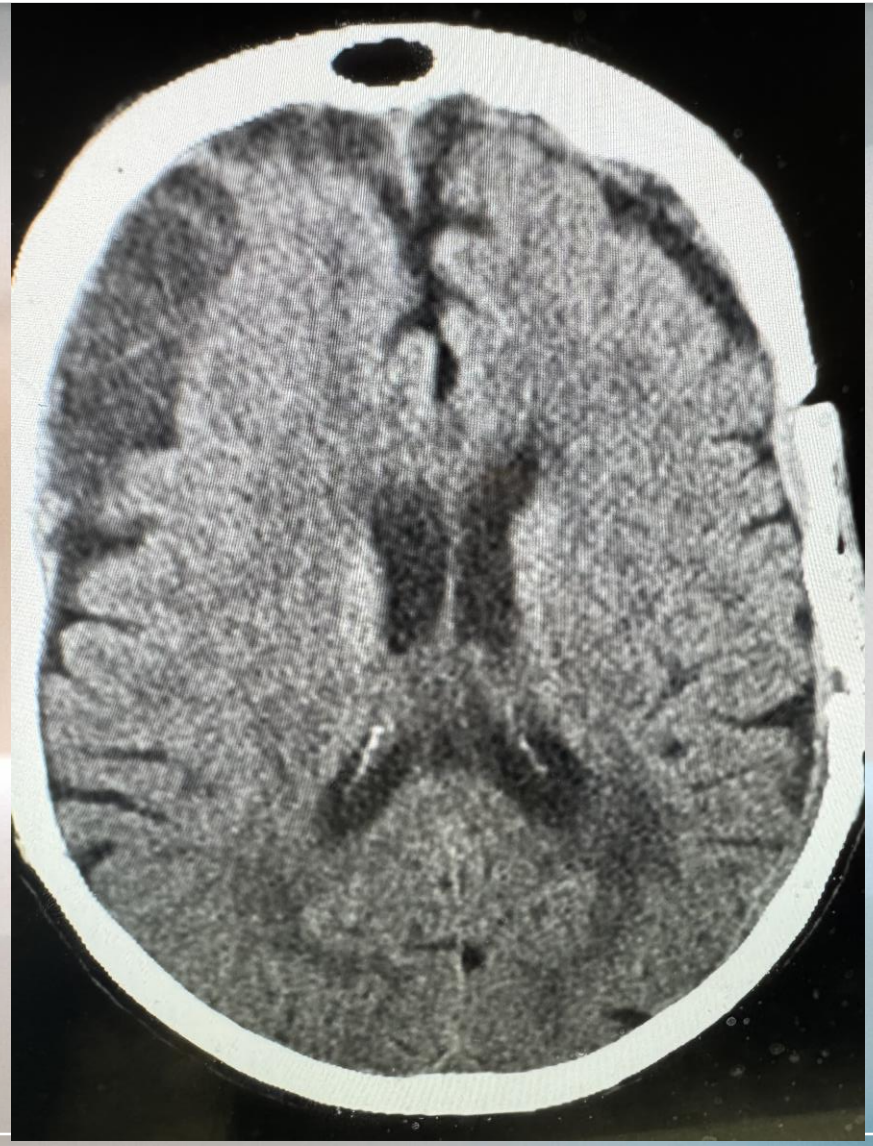

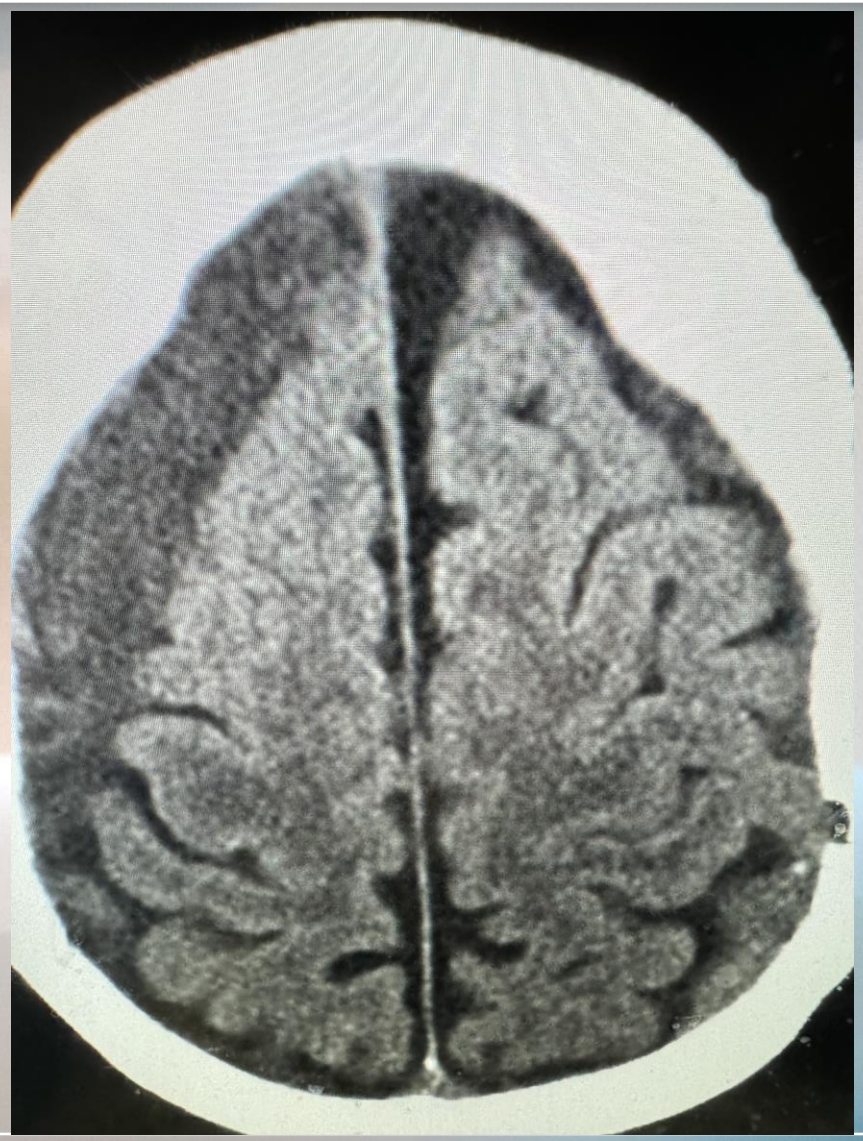

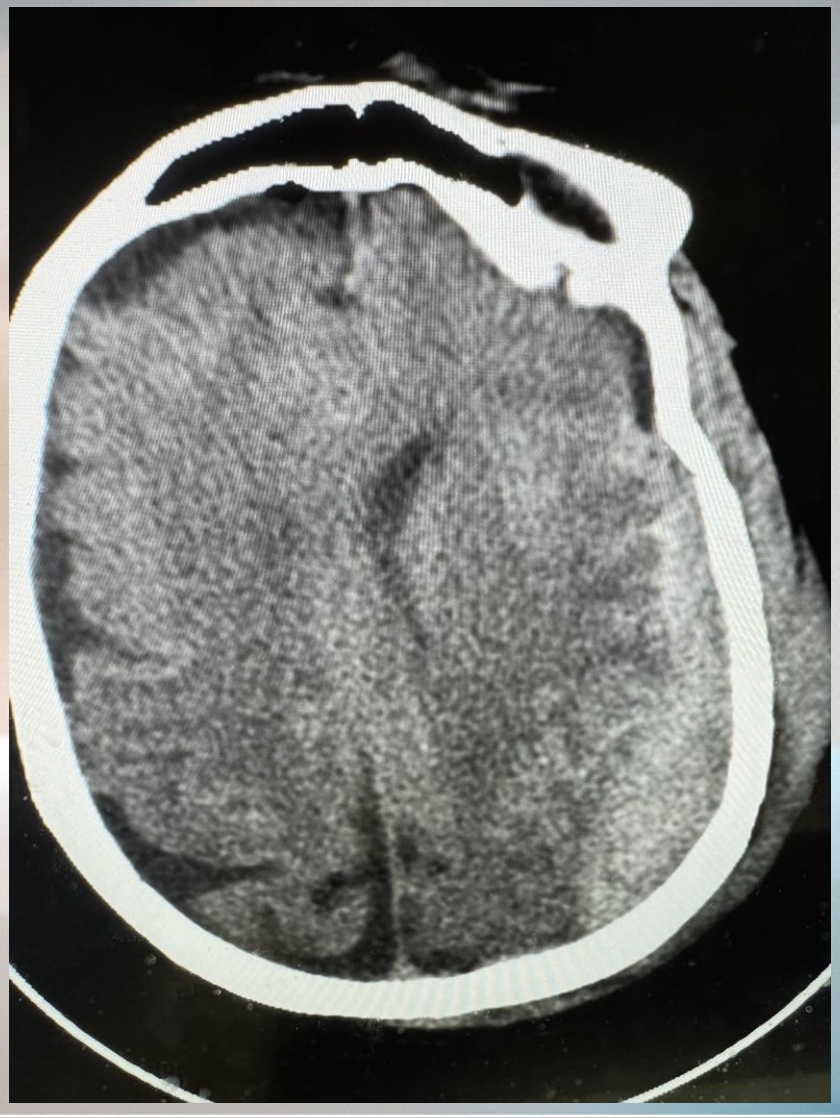

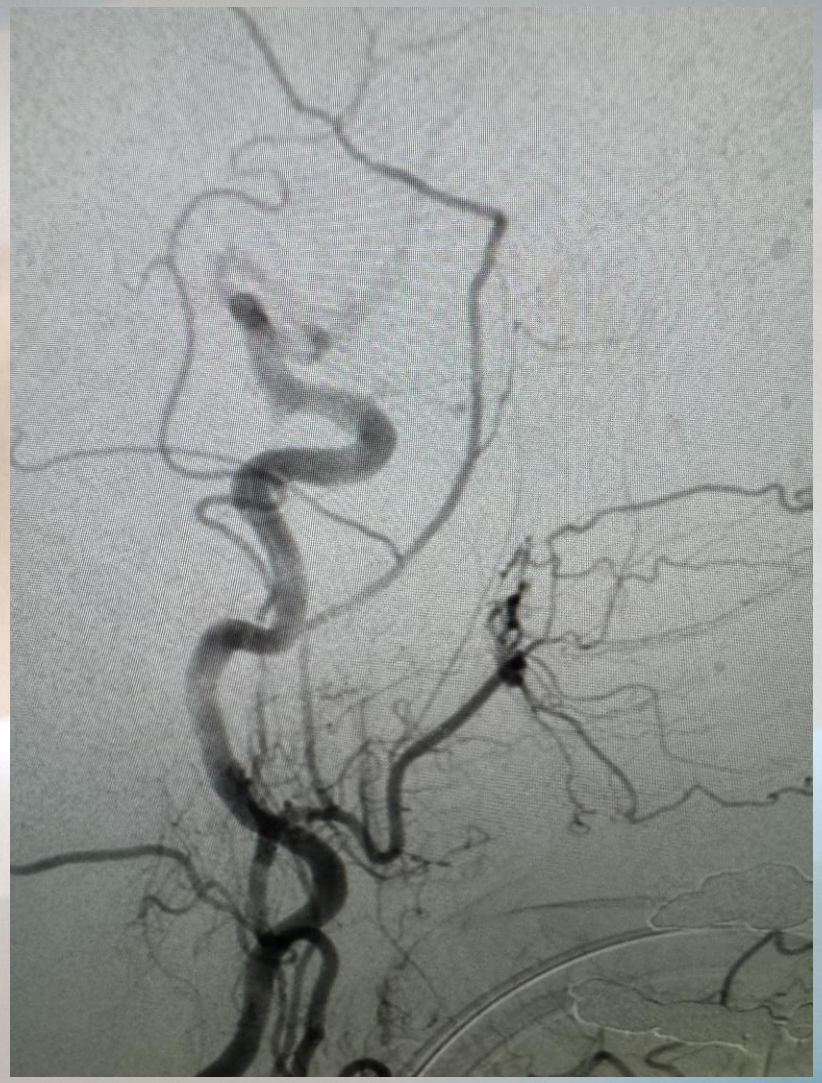

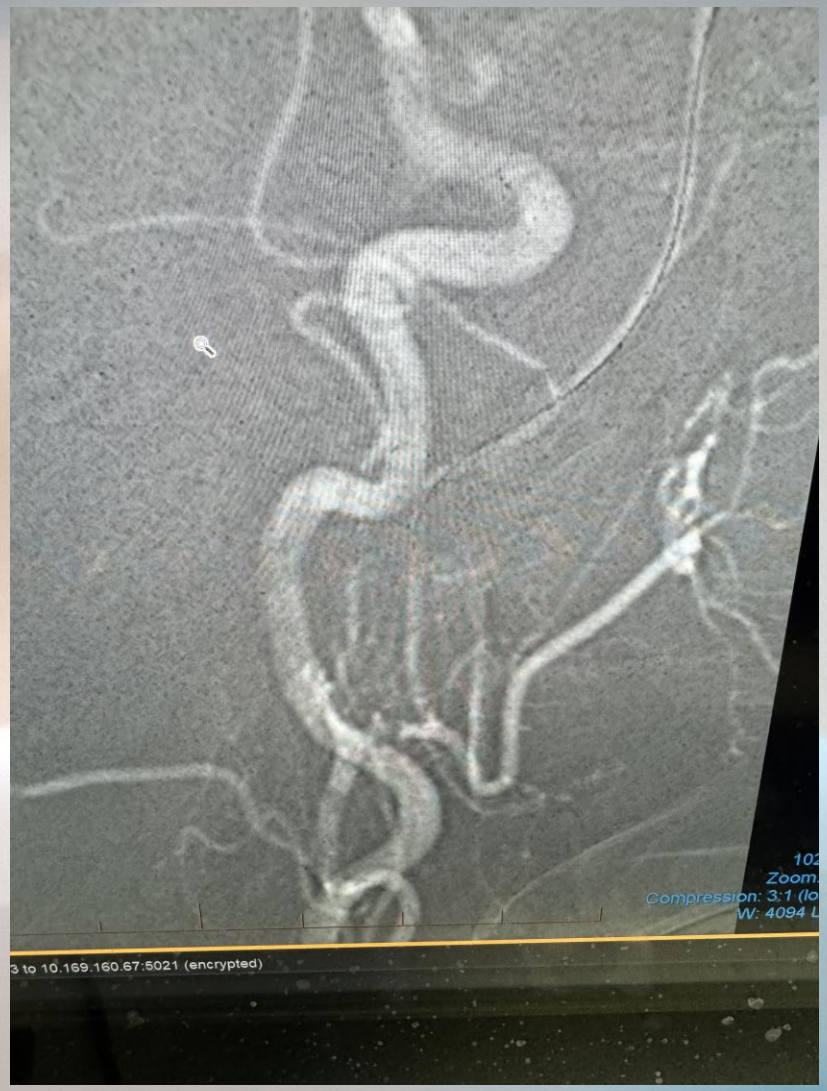
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