

# *Approach to True Tandem Intracranial Occlusion from Extra- cranial Lesion*

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# Disclosures

- **Co-Chair of the Endovascular Committee:** StrokeNet NIH/NINDs Research Consortium
- **Steering Committee:** NIH/NINDs Defuse 3 Acute Ischemic Stroke RCT
- **Overall International PI:** ARISE II EMBOTRAP stent-retriever acute stroke study.
- **Overall International PI:** ATLAS Brain Aneurysm Stent Embolization Prospective Study
- **Past president:** Society of Vascular and Interventional Neurology (SVIN) and Endovascular Neuro Section AAN
- **Consultant:** Stryker, Penumbra, Medtronic, and Neuravi, ThrombX Medical
- **Co-Founder:** Galaxy Therapeutics LLC

# Introduction

- ✓ **Different techniques have been described for anterior circulation Tandem IC LVO from an EC lesion presenting with acute ischemic stroke (estimated at 10-15% of MT cases).**
  - 1. Target symptomatic IC LVO only approach:**
    - **Cross the proximal lesion and MT to IC LVO only (if Acomm collateral exist)**
  - 2. Combined Extra and Intracranial lesions approach (if no collateral from CL side or to improve the antegrade flow):**
    - **EC first then IC MT (usually in cases when it is hard to cross): Angioplasty w or wo stenting (if recoil or dissection or clotting post plasty only or to improve collateral flow) on the way up and then MT to IC lesion**
    - **IC MT first then EC angioplasty with or without stenting on the way out.**

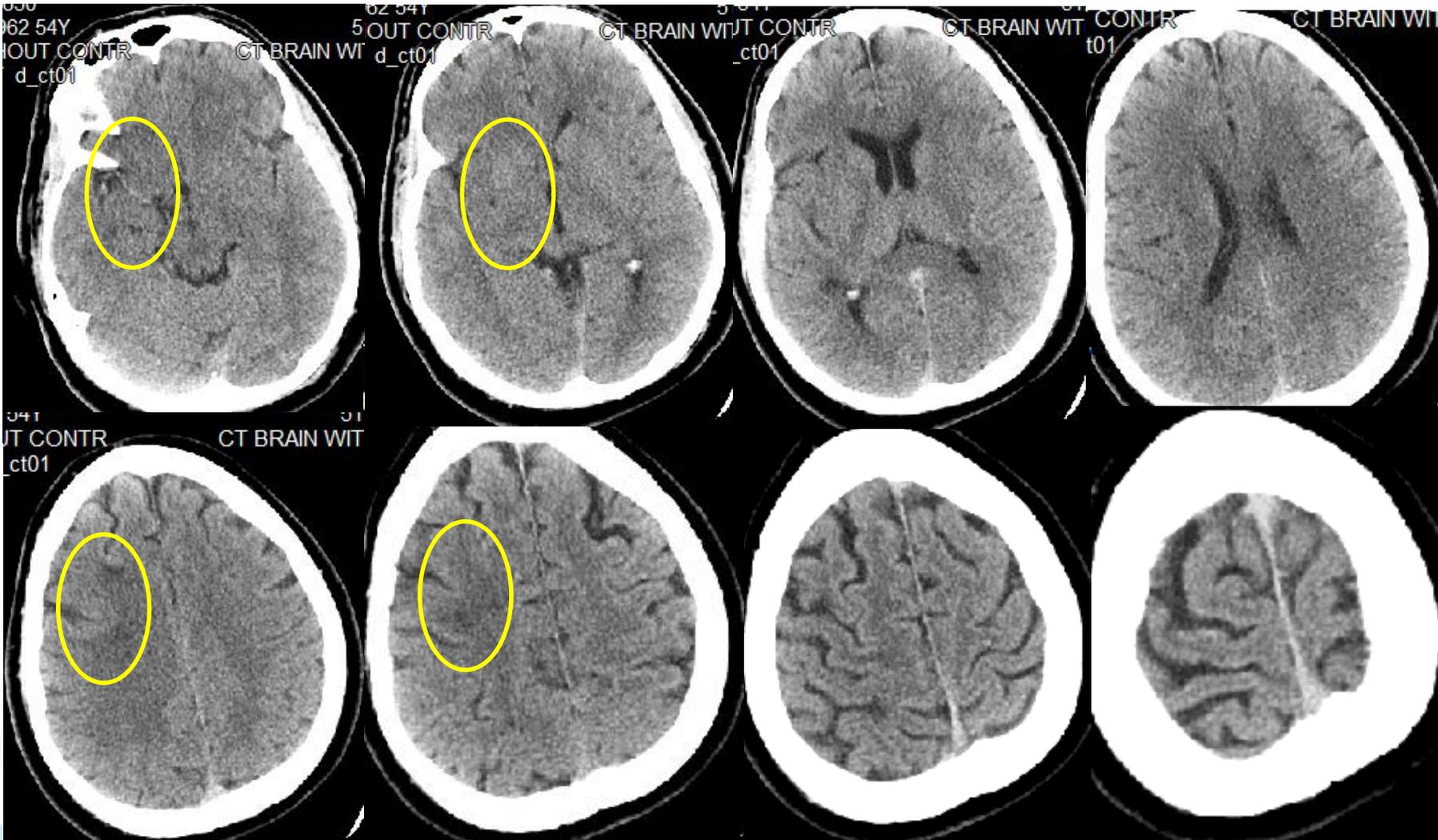
# Combined Approach

- ✓ Usually it consists of switching the sheath and performing the stenting or angioplasty procedure following the MT or prior to MT
- ✓ Here we described utilizing the same MT tools and performing the EC treatment during the stent-retriever incubation time over the same stent retriever microwire while its in place

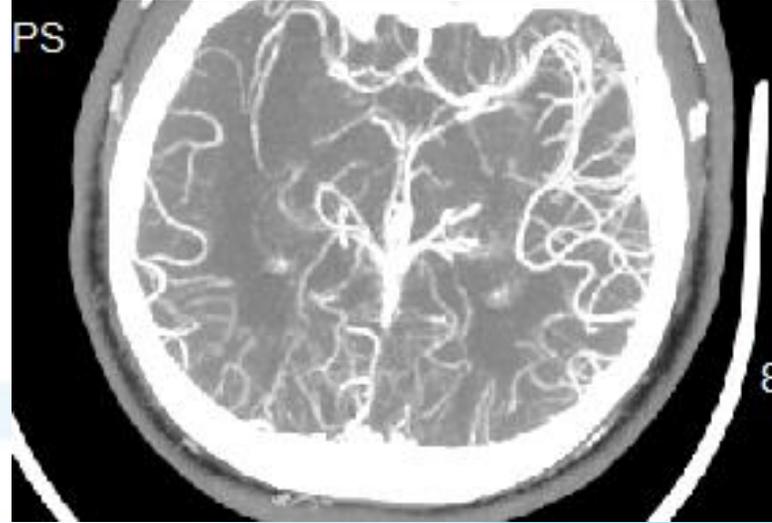
# Case Presentation

- ✓ **54 yo RH man with known hx of HTN, HrLip, Smoking Hx, who presented following an elective laparoscopic cholecystectomy (Sx at 7:44 AM) from an outside hospital with drowsiness post op given Narcan with no improvement; then noted with left sided weakness and neglect.**
- ✓ **In the post op area around 11am**
- ✓ **Stroke susp around 15:00 pm**
- ✓ **Head CT, early stroke signs at 16:59 at the outside hospital**
- ✓ **Transferred to our center, flight for life**
- ✓ **His NIHSS on arrival 18**

# Postop Stroke due to Tandem Lesion: CT (ASPECT 6)



# Postop Stroke due to Tandem Lesion: CTA



# Endovascular Therapy Decision

- ✓ *Head CT scan ASPECT of 6, borderline*
- ✓ *CTA still some cortical pial collateral*
- ✓ *? Acute on chronic severe carotid stenosis, ischemic deconditioning and tolerance?*
- ✓ *Proceed to MT*

# Endovascular Technique: Tools

- ✓ **Femoral sheath 8Fx 55 cm**
- ✓ **FlowGate 8F (0.84) BGC**
- ✓ **Marksman 027 Microcatheter over Synchro 14 preshaed Standard Microwire**
- ✓ **Stent-retriever 4 x 40 mm Solitaire**
- ✓ **Sterling balloons 3 and 5 x 20 mm**
- ✓ **Sterling Balloon inflator ready with 50/50 mmixture**

# Endovascular Technique

**Step I:** Door to puncture 35 m

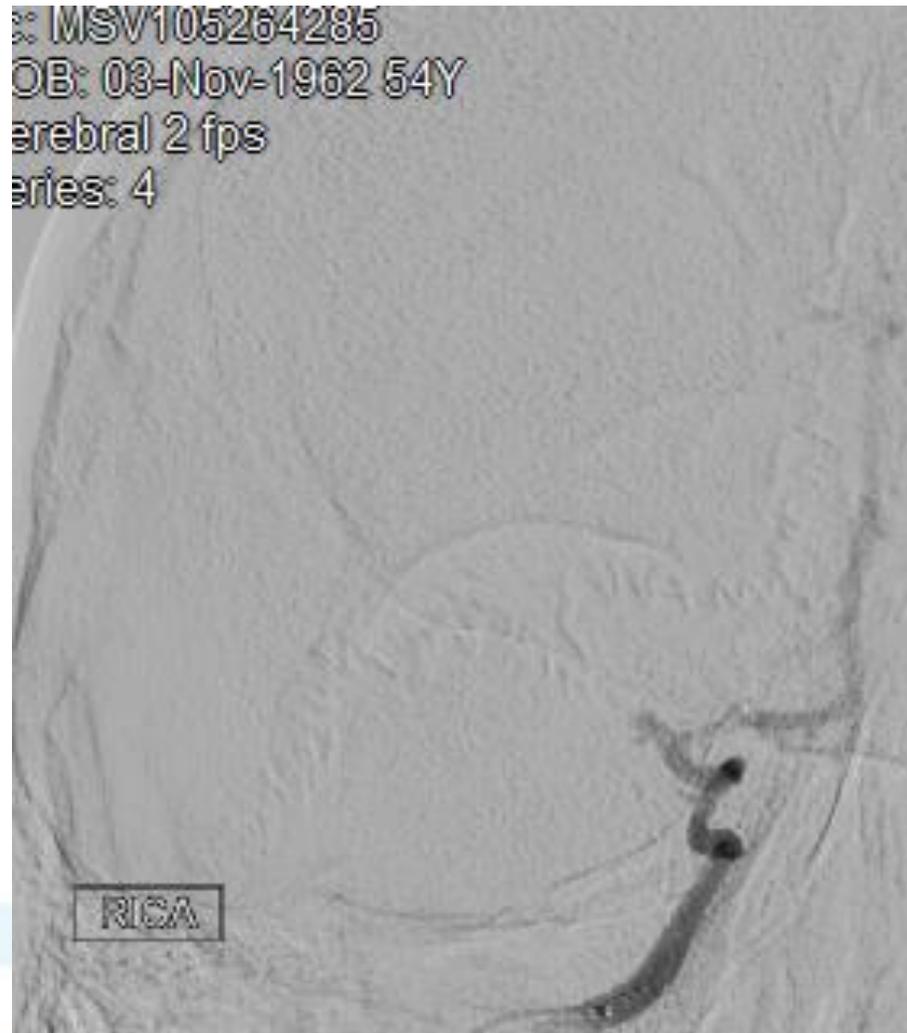
**Step II:** Quick baseline run of the right CCA in AP and Lateral showing the right ICA stump occlusion, delayed phases confirmed the tandem MCA occlusion



# Endovascular Technique

**Step III:** Cross the ICA proximal EC occlusion with microcatheter over synchro 2 standard preshaped 0.14 **while the BGC is inflated fro proximal protection**; and ICA run confirming MCA clot at M1 origin.

Time Puncture to MC  
8 min



# SEIMLESS Technique:

## Simult. Extracranial and Intracranial Mechanical Lesional

**Step IV:** Cross the MCA clot with MC 027

**Step V:** Deploy the stent retriever into the clot and remove/slip the MC out of the body

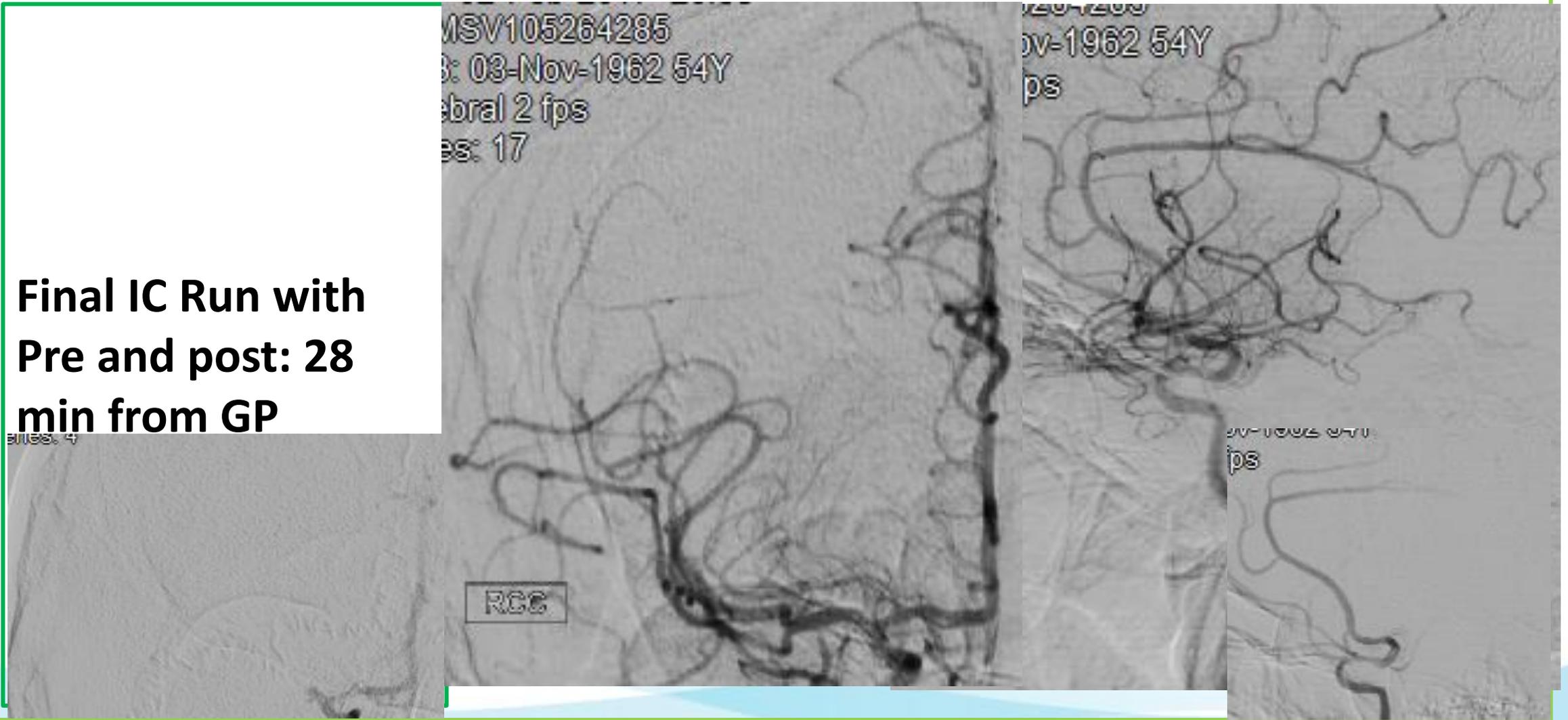
**Step VI:** Carotid angioplasty while the SR deployed: Track the carotid angioplasty balloon overt the SR wire while the BGC inflated

**Time: 25 min from P**



# Simultaneous IC and EC MT Technique: Final results

**Final IC Run with  
Pre and post: 28  
min from GP**



# Simultaneous IC and EC MT Technique: Final results

**Final EC Run with  
Pre and post**



# Follow up

- ✓ His NIHSS improved from 18 to 9
- ✓ 3 months mRS is 3
- ✓ CTA showed patent carotid on the FU images

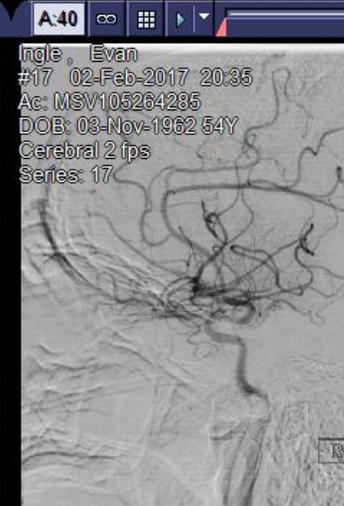
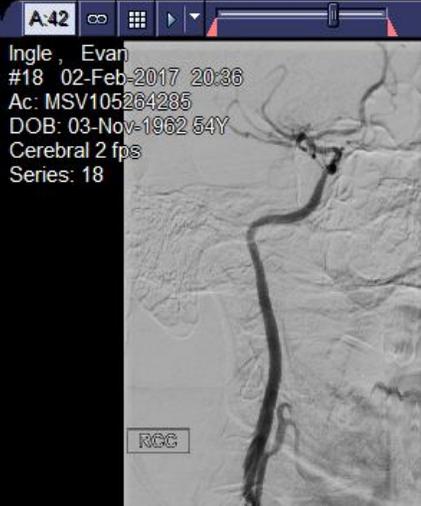
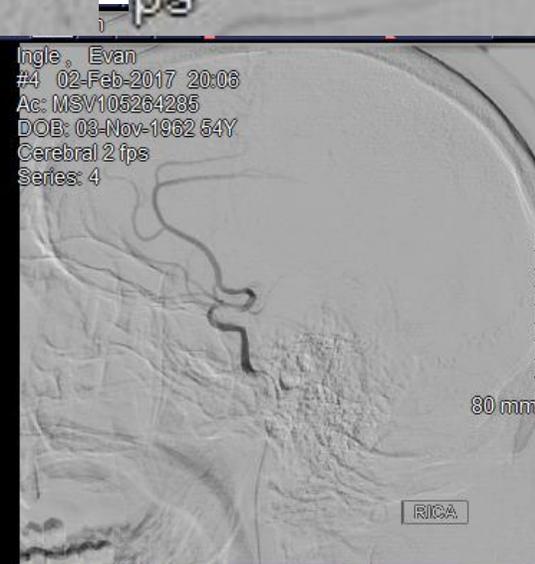
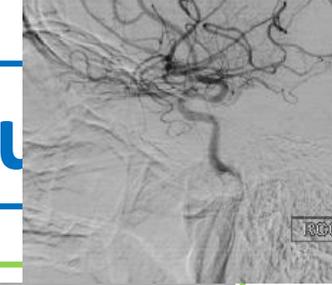
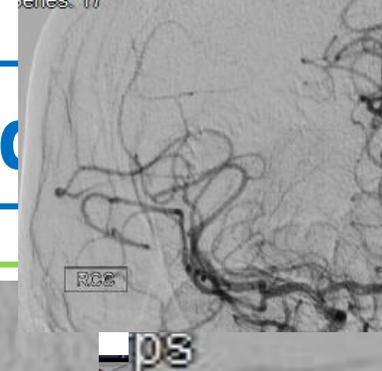


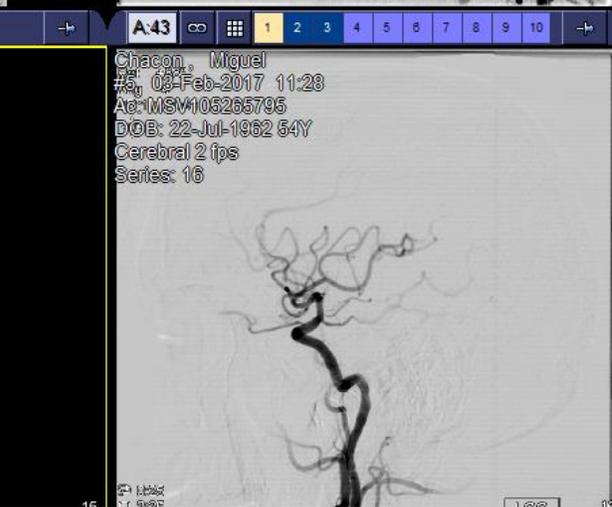
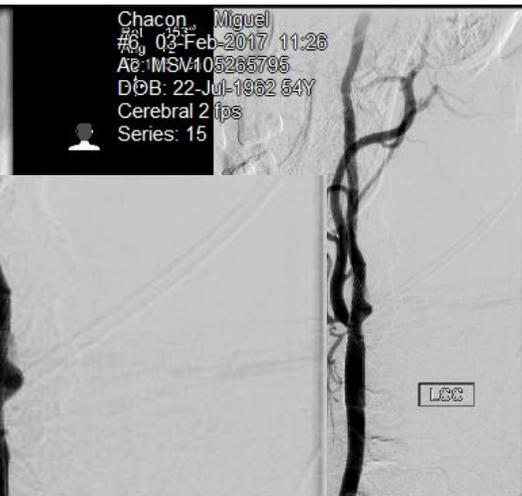
# Endovascular Technique

# Simultaneous IC and EC MT Technique

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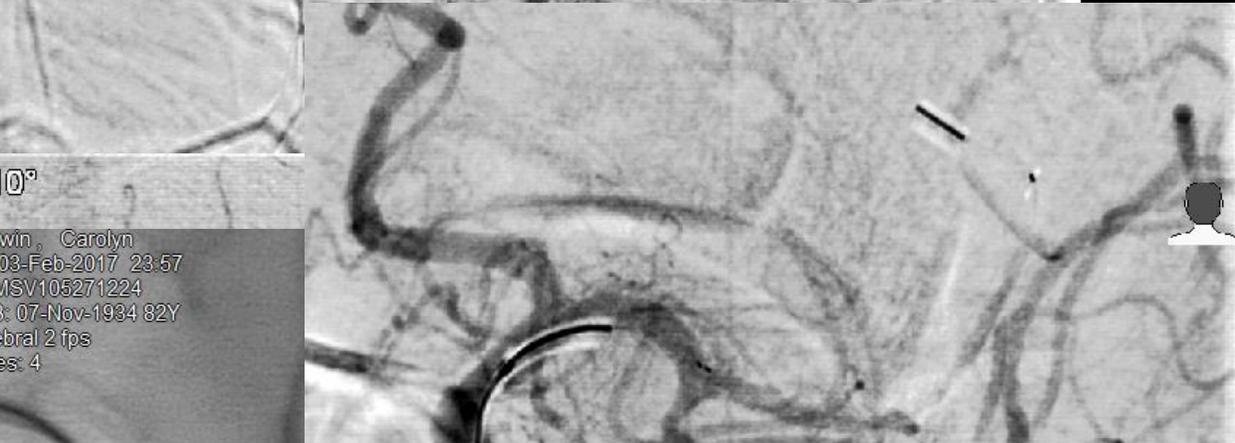
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