

# Early endovascular approach in acute internal carotid artery dissection

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# Disclosure

Speaker name:

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I do not have any potential conflict of interest

# Introduction

## Internal carotid artery dissection

- Annual incidence in the US - 2.6 to 2.9 per 100.000 individuals - carotid artery dissection
- Spontaneous dissection accounts for 20% of all ischemic strokes
- Spontaneous internal carotid artery dissection is 1.72 per 100.000 individuals

# Material and Methods

- A 51-year-old male patient who came to the emergency center complaining of paresthesia in upper left limb, discomfort, hypertension and anxiety.
- He works for a water distribution company and said the symptoms started at the moment he made a great effort to turn on a water valve.
- Comorbidities:  
Hypertension taking losartan and metoprolol

# Material and Methods

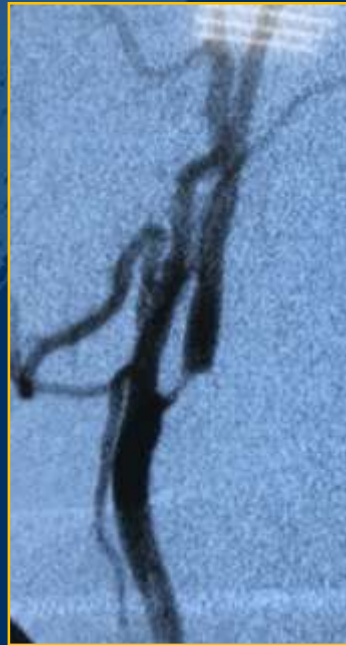
- On physical examination pulses were normal, pupils were reactive to light and blood pressure was 165 x 81 mmHg.
- Cardiac enzymes and ECG results were normal, ruling out myocardial infarction
- On-call physician asked for vascular surgery team evaluation due to upper left limb paresthesia
- Complementary tests revealed critical stenosis in right internal carotid artery on color doppler ultrasound(CDU) with images suggesting carotid dissection.
- Carotid angiogramography demonstrated and confirmed right internal carotid(RIC) dissection.

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- Carotid angiography was performed under general anesthesia and demonstrated critical stenosis with subocclusion of this artery on first injection. On the following images right internal carotid artery was no longer seen.



- Our opinion was to ask the anesthesiologist to wake up the patient. He woke up without any sequelae, so our team conclude that the lack of flow in RIC was due to arterial spasm.
- The patient was then referred to ICU, taking enoxaparin and dual antiplatelet aggregation.
- He developed high blood pressure peaks, without paresthesia improvement and flash light appeared in the right eye.



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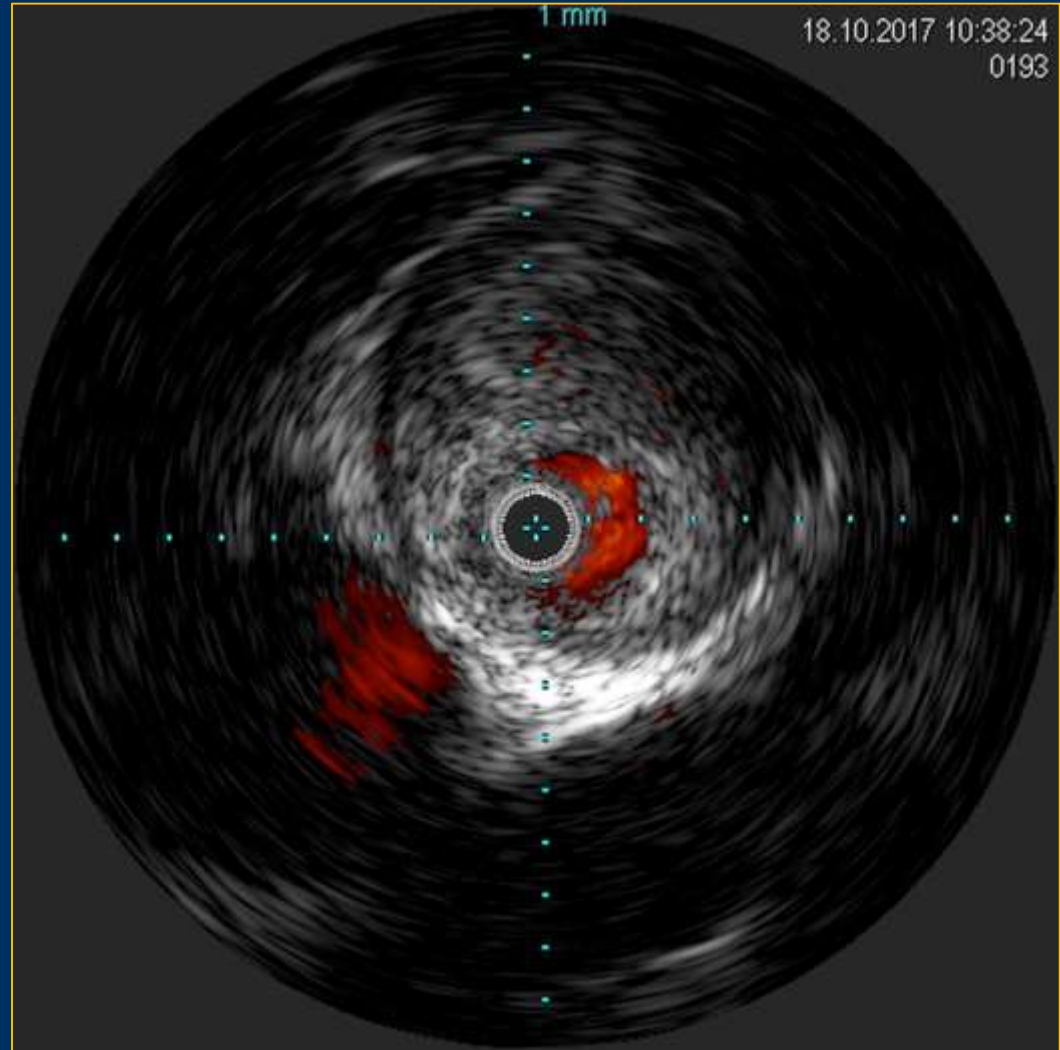
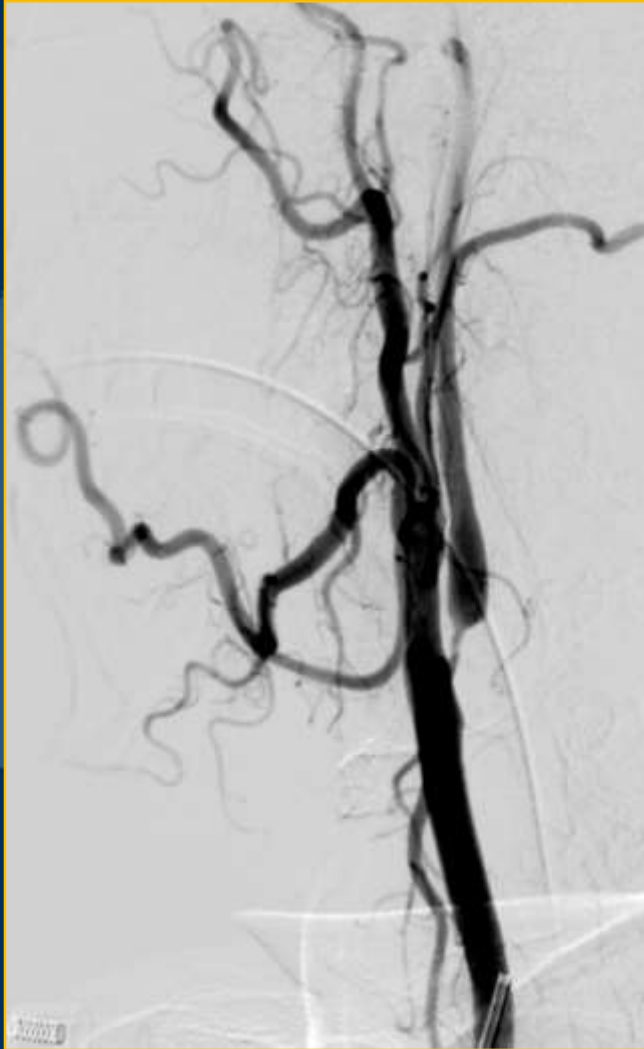
- Blood pressure levels were stabilized and the patient was transferred to a bigger center to be treated, where the hemodynamic center has more accurate equipment and a better life support.
- Endovascular treatment was the treatment of choice due to the lack of symptoms improvement and the risk of stroke.



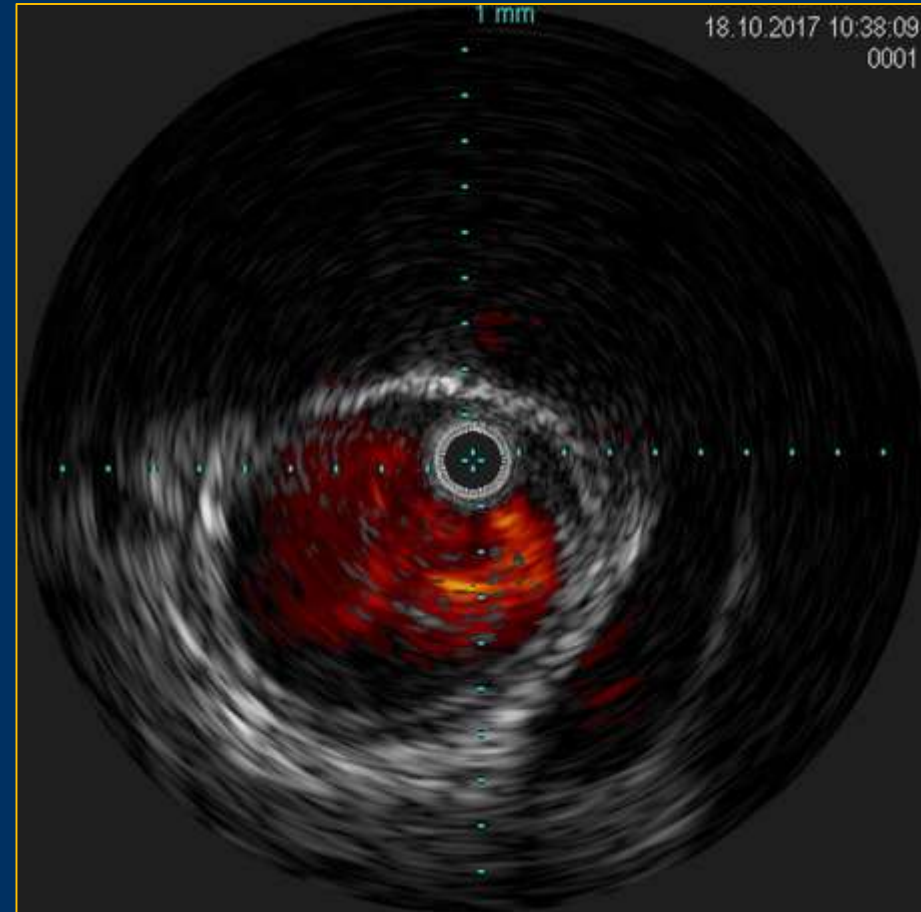
# Material and Methods

- Performed common femoral artery puncture by Seldinger Technique, inserted a 5 F introducer, followed by aortic arch angiography.
- Papaverine 50 mg IV, Selective catheterization of external carotid artery followed by sheath placement in common carotid artery.
- Angiography was performed. Cerebral protection was made with an emboshield Nav 6 filter inserted distal to dissection area.
- IVUS eagle eye 0,014 (Volcano) was inserted revealing critical ostial stenosis.

# Material and Methods



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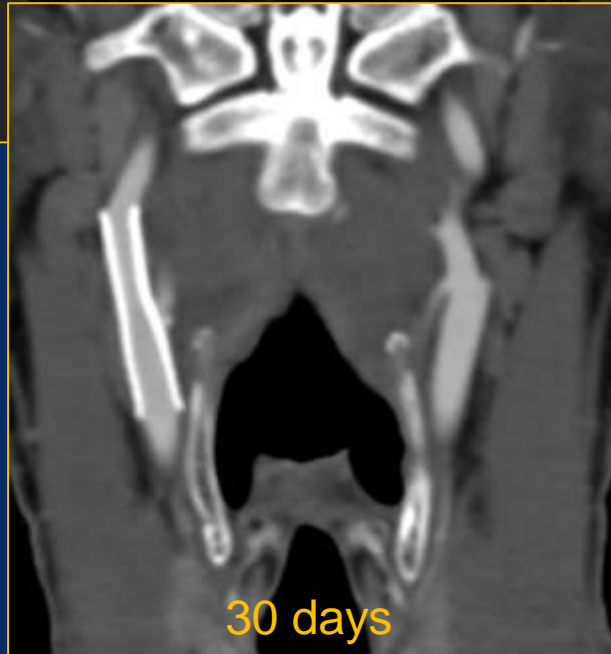
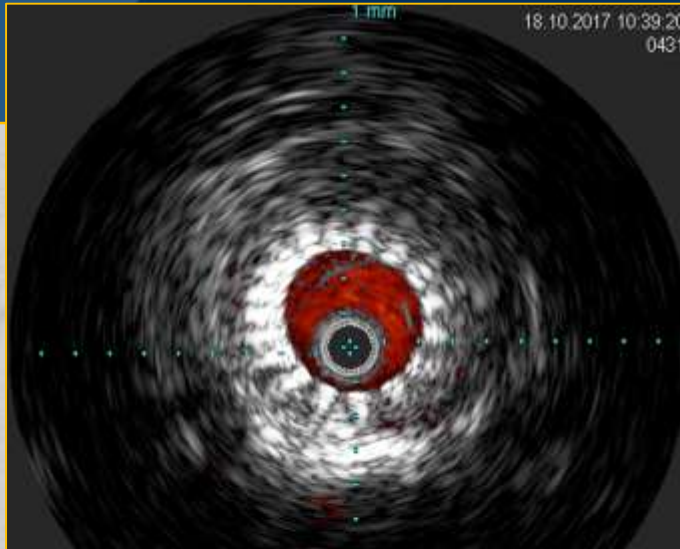
# Material and Methods

- IVUS has helped the diagnosis to select the best stent, the best place to angioplasty, and most of all to help identify the true lumen
- Sequential angioplasties were performed starting with 2x20 mm, 4x20 mm balloon and 5x20 mm (Viatrak<sup>®</sup> - Abbott).
- Angioplasty and stent placement were well succeeded, with an insertion of X.Act – 9/7 mm – 40 mm – Abbott stent.

# Material and Methods

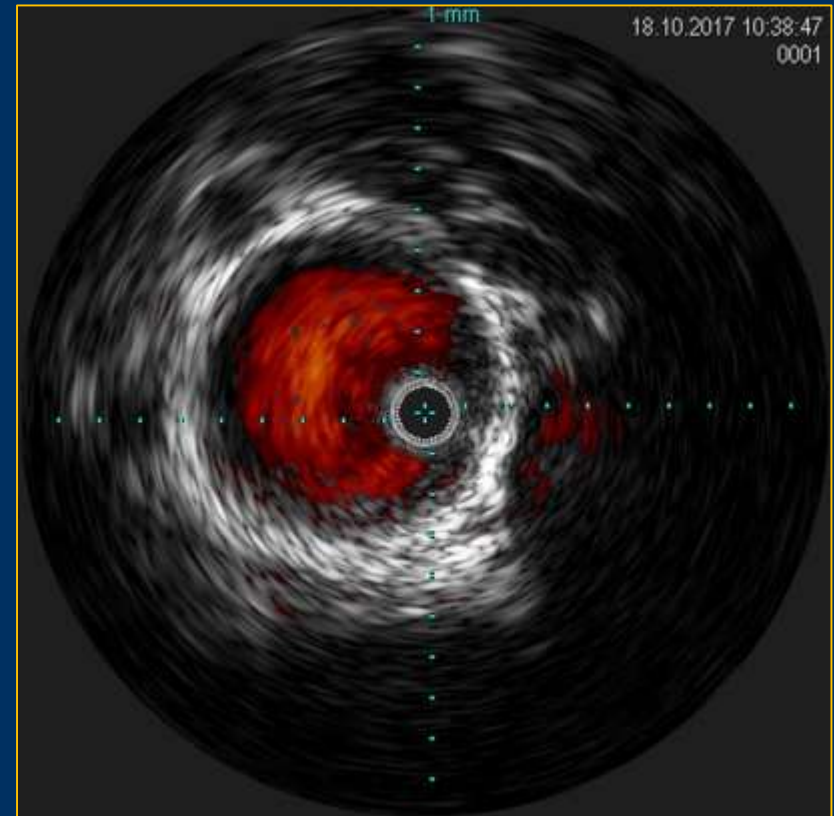
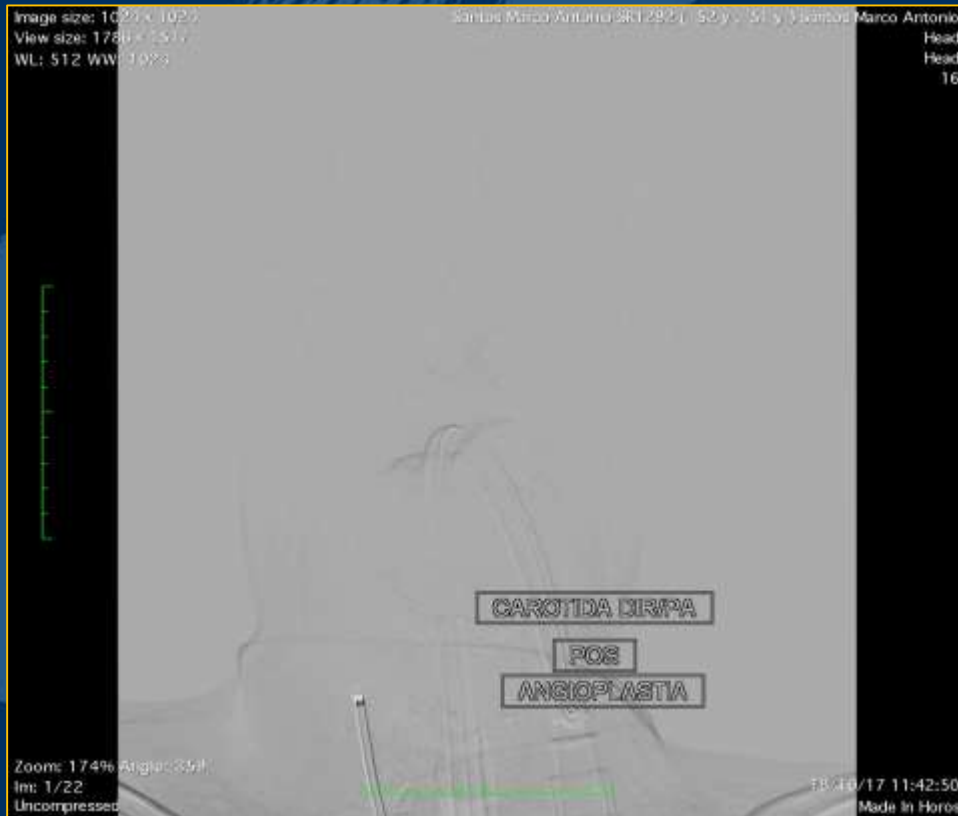
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# Material and Methods



# Results

- Good outcome, discharged 48 hours later.
- Patient's symptoms disappeared entirely after stent placement, without any sequel.
- NIHSS score 0.
- Discharged after 48 hours taking aspirin 100 mg, clopidogrel 75 mg and rosuvastatin 20 mg daily.
- 30-day control angiotomography demonstrated no lesions and good stent flow.
- One year follow-up without any sequelae and stent patent.



# Conclusions

- Endovascular treatment is feasible in short acute internal carotid dissection , and may be considered a good treatment option, especially in early diagnostics.
- IVUS is a very important tool that helps the correct identification of the true lumen and helps choose the best stent and the correct place to insert it.
- Early recognition of the condition is examiner dependent.
- Early treatment avoids dissection progression and in this particular case avoided hemispheric stroke.

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