

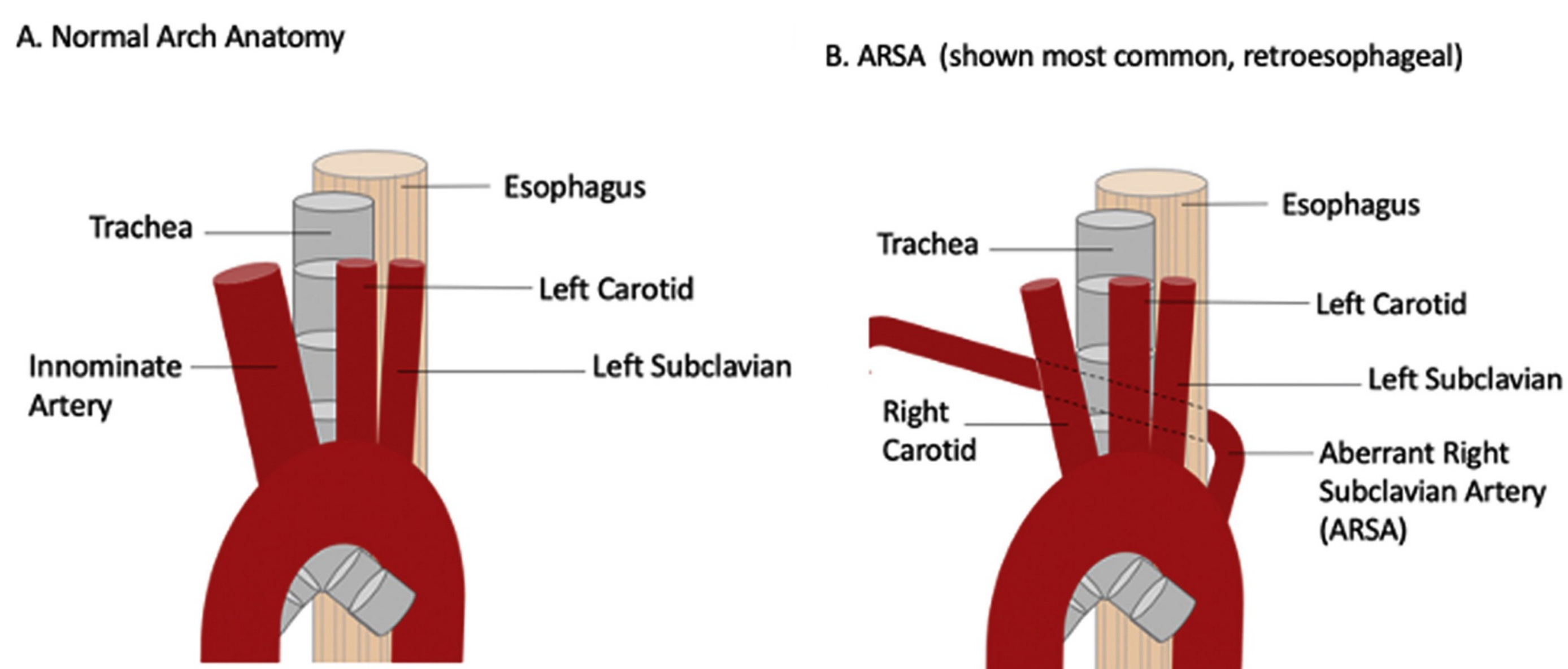
# A Case of Vertebral Basilar Insufficiency in the Setting of a Completely Occluded Aberrant Right Subclavian Artery

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## Introduction

An **Aberrant right subclavian artery (ARSA)** is a vascular anomaly where the subclavian originates from the aortic arch rather than the brachiocephalic trunk with a prevalence of 0.19% to 2.5%. Subclavian artery stenosis can lead to retrograde flow from an ipsilateral vertebral artery which can result in significant cerebrovascular symptoms, like **vertebral basilar insufficiency syndrome (VBI)** in which patients can present with ataxia, dysphasia, dizziness, or dysarthria.

We present the case of a 76 y.o female patient who presented with both conditions, each exceedingly rare.



## Patient Presentation

76 y.o F complained of intermittent dizziness, near syncope, and lightheadedness for 2 days. She reported 3 episodes of dysarthria over the past month.

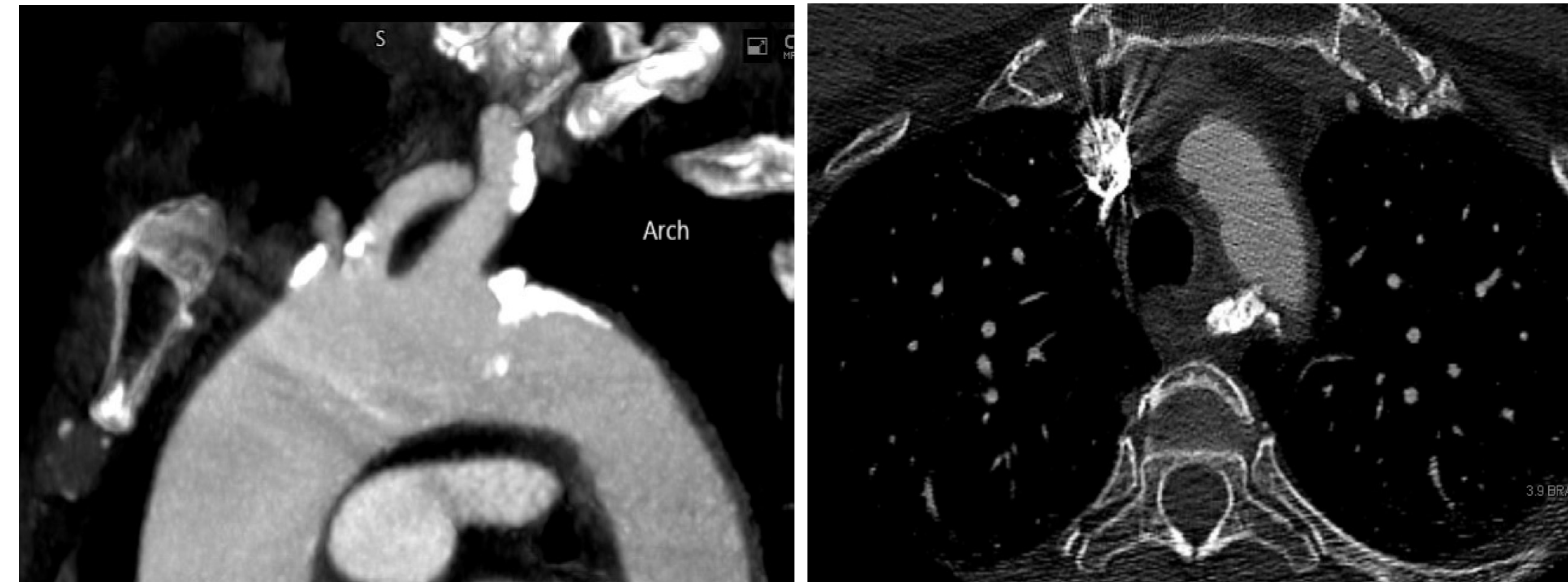
PMH/Meds: RA on methotrexate/folic acid, hypothyroidism taking levothyroxine, and osteoporosis.

Lifelong episodes of lightheadedness and weakness of the right hand that worsen with activities and positional changes.

Physical exam: Absent radial and ulnar pulses on the right with a systolic blood pressure difference from left to right arm of >60 mmHg.

No signs of dehydration including negative skin tenting, dry mucous membranes, or delayed capillary refill.

## Evaluation

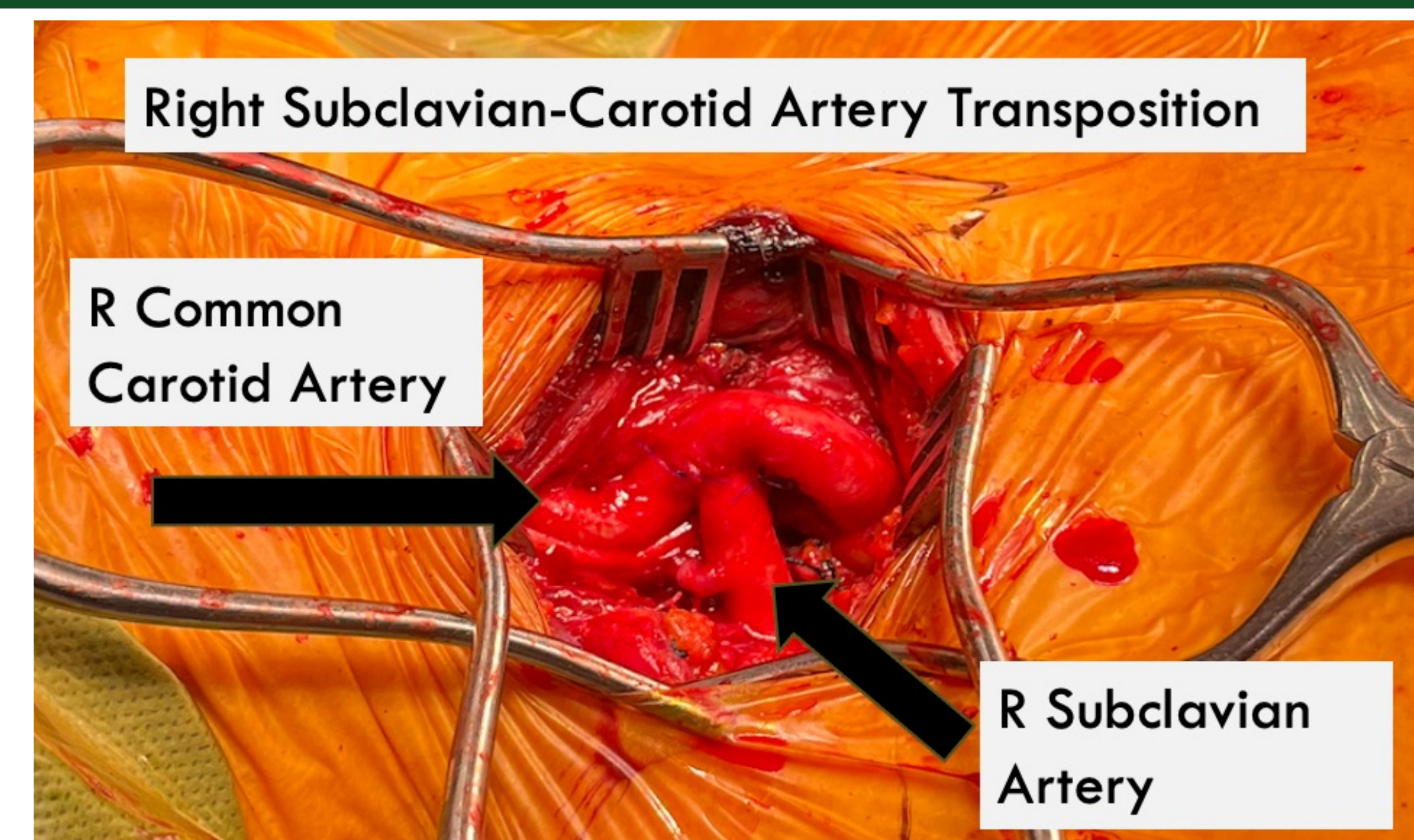


**CTA (above):** The ARSA is densely calcified with complete occlusion of the origin with reconstitution of blood flow at the mid segment.

**MRI w/o Contrast:** No evidence of ischemic lesion in the brain

**Carotid Duplex:** Retrograde flow of the right vertebral artery with decreased peak-systolic velocities at the right brachial artery compared to left

## Operation



**Right Subclavian-to-Carotid artery transposition Performed**  
Right subclavian artery was anastomosed in parachuting fashion with a running 5.0  
Flow confirmed with doppler intra-operatively.  
EEG monitoring during case.

## Clinical Course

**09/2023:** Patient evaluated and diagnosed at the emergency department

**10/2023:** Patient underwent RCST complicated by Horner syndrome post-operatively

**12/2023:** Horner syndrome symptoms improving. No reported dizziness, dysarthria, or upper extremity weakness.

**03/2023:** Patient underwent blepharoplasty for upper eyelid ptosis repair

## Discussion

A completely occluded ARSA resulted in reversal of blood flow of the right vertebral artery causing VBI associated symptoms with no ischemic damage per MRI findings.

Transposition was performed as opposed to bypass due to the location of the vertebral artery and higher long term patency rates for native end-to-side tissue anastomosis compared to a PTFE bypass/endovascular repair.

While an endovascular option can be considered in selective patients with occluded subclavian arteries, it was not performed in this patient due to its proximity to the esophagus and the chronic nature of the plaque.

Reinforces Still's Osteopathic theory of the Importance of unimpeded flow: "the rule of the artery is absolute, universal, and it must be unobstructed, or disease will result."

## Disclosures

None