

## Case presentation

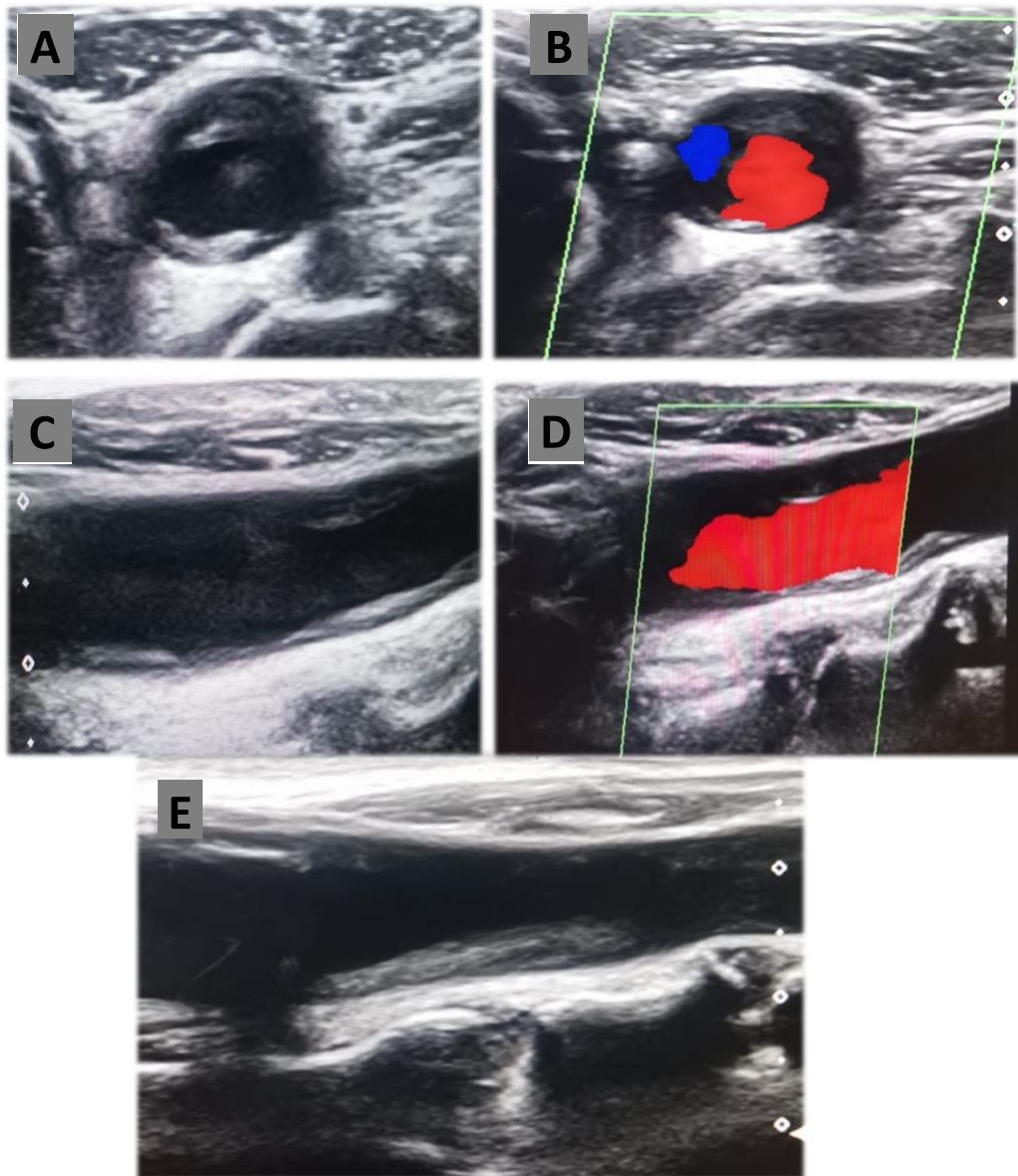
### Case No.1

History:- 60 year-old male.

Clinical presentation:- Right sided lower limb weakness

Proved brain MRI findings:- Diagnosed as left parietal non hemorrhagic infarction

Carotid duplex:-



**Figure 1**

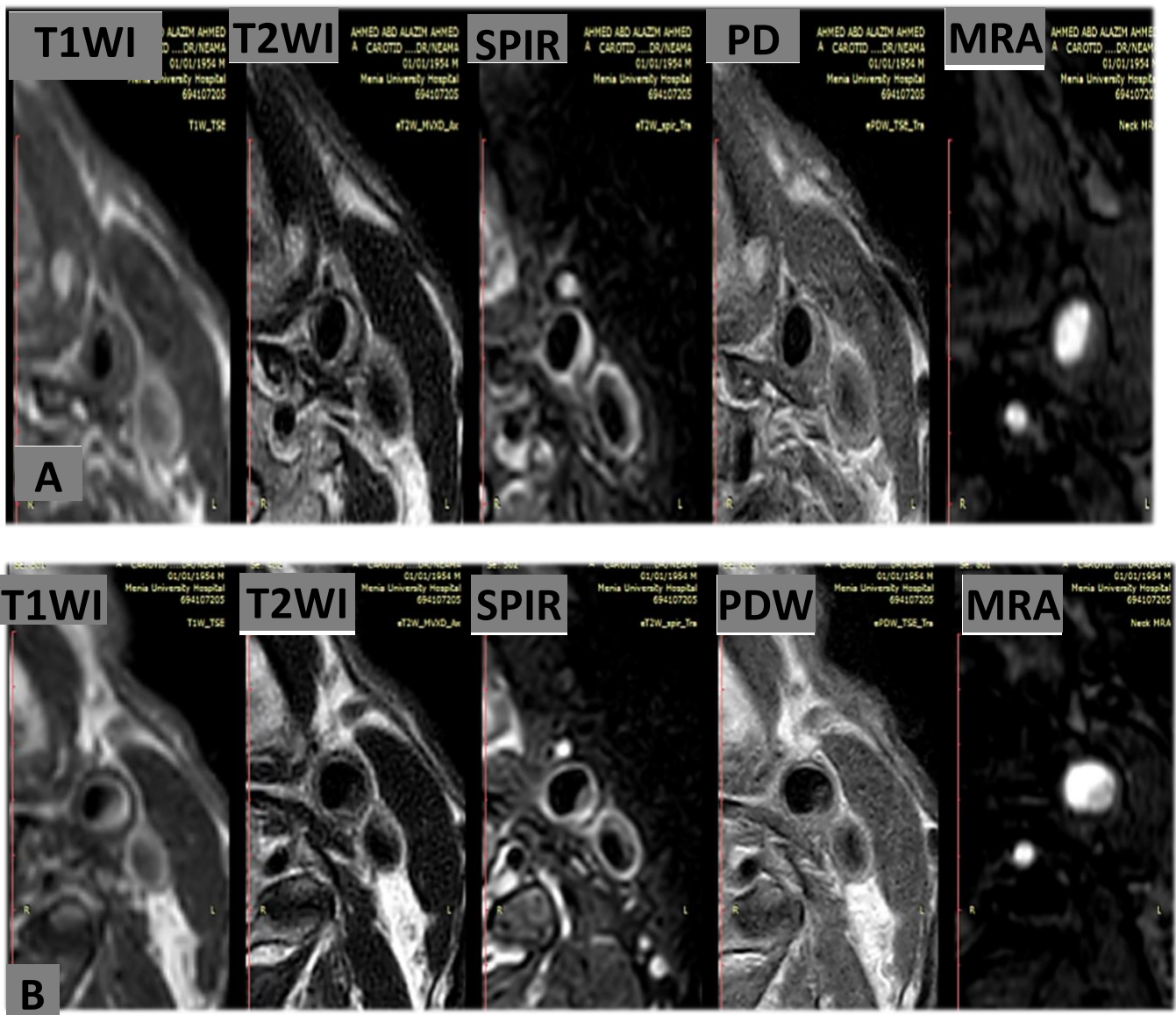
**A, B:** Transverse -section ultrasound /Doppler images of the left CCA ,

**C,D:** longitudinal –section ultrasound/Doppler images of left CCA

A hypo to iso echoic athermanous plaque with smooth surface exerting less than 70% stenosis of the lumen

**E:** longitudinal –section ultrasound image showing a hyper echoic atheromatous plaque at distal left CCA.

## Carotid MRI:-



**Figure 2**

**A:** T1WI, T2WI and MRA axial images showing an atheromatous plaque within the left CCA with smooth surface and less than 70% occlusion of its lumen, PDW axial image showing thinned fibrous cap

**B:-** A thrombus is noted at the distal left CCA that appears hyperintense at T1WI axial image, isointense to slightly hyperintense at T2WI axial image, At PDW axial image, it shows an interruption of the underlying endothelium.

## Radiological diagnosis:-

- Vulnerable atheromatous plaque at left CCA with thinned fibrous cap that is seen interrupted at its distal portion with thrombus on top (about 2-3 weeks age) hyperintense at T1, isointense to slightly high signal at T2
- MRI has converse role in detection of thrombus on distal margin of plaque (above endothelium lining), not another plaque as considered by carotid Duplex

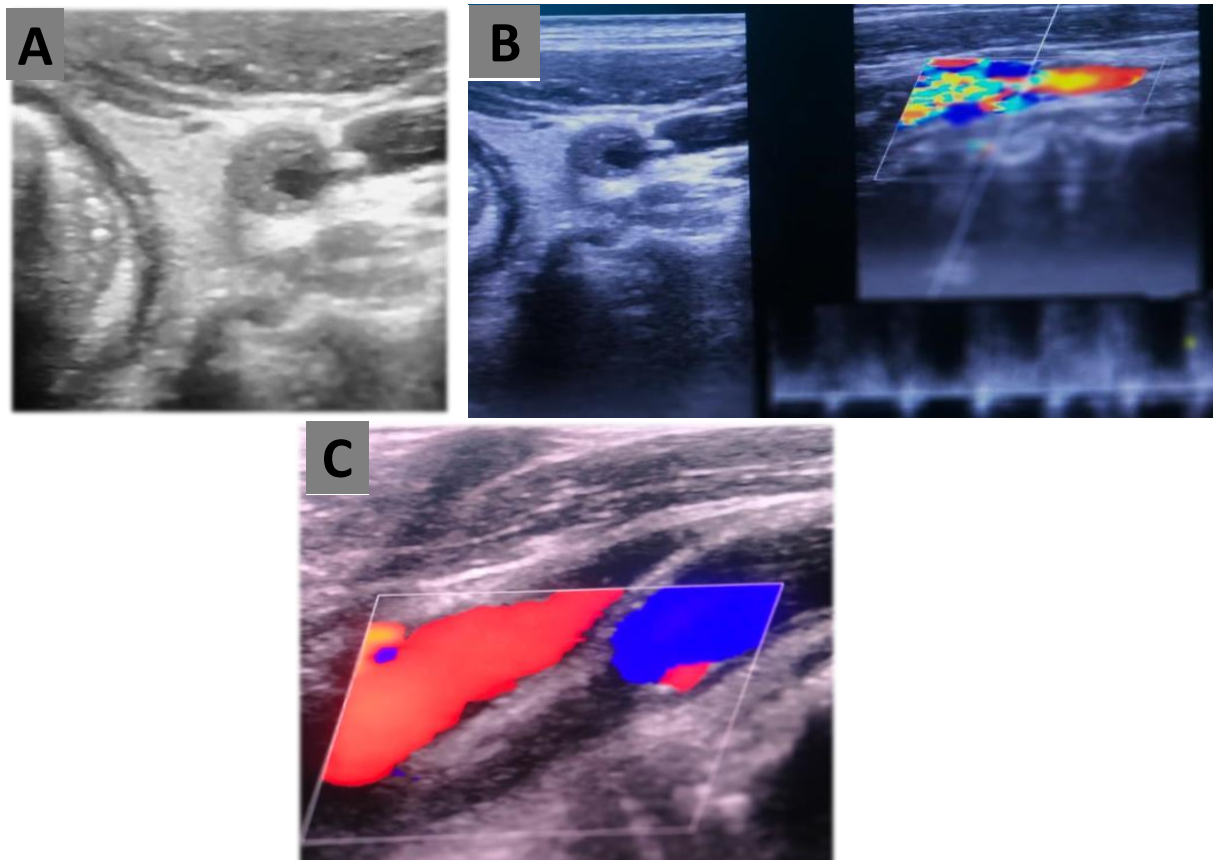
## Case no.2

History:- 68 year-old male.

Clinical presentation:- Dysarthria for 15 minutes

Proved brain MRI findings:- left temporal non hemorrhagic infarction

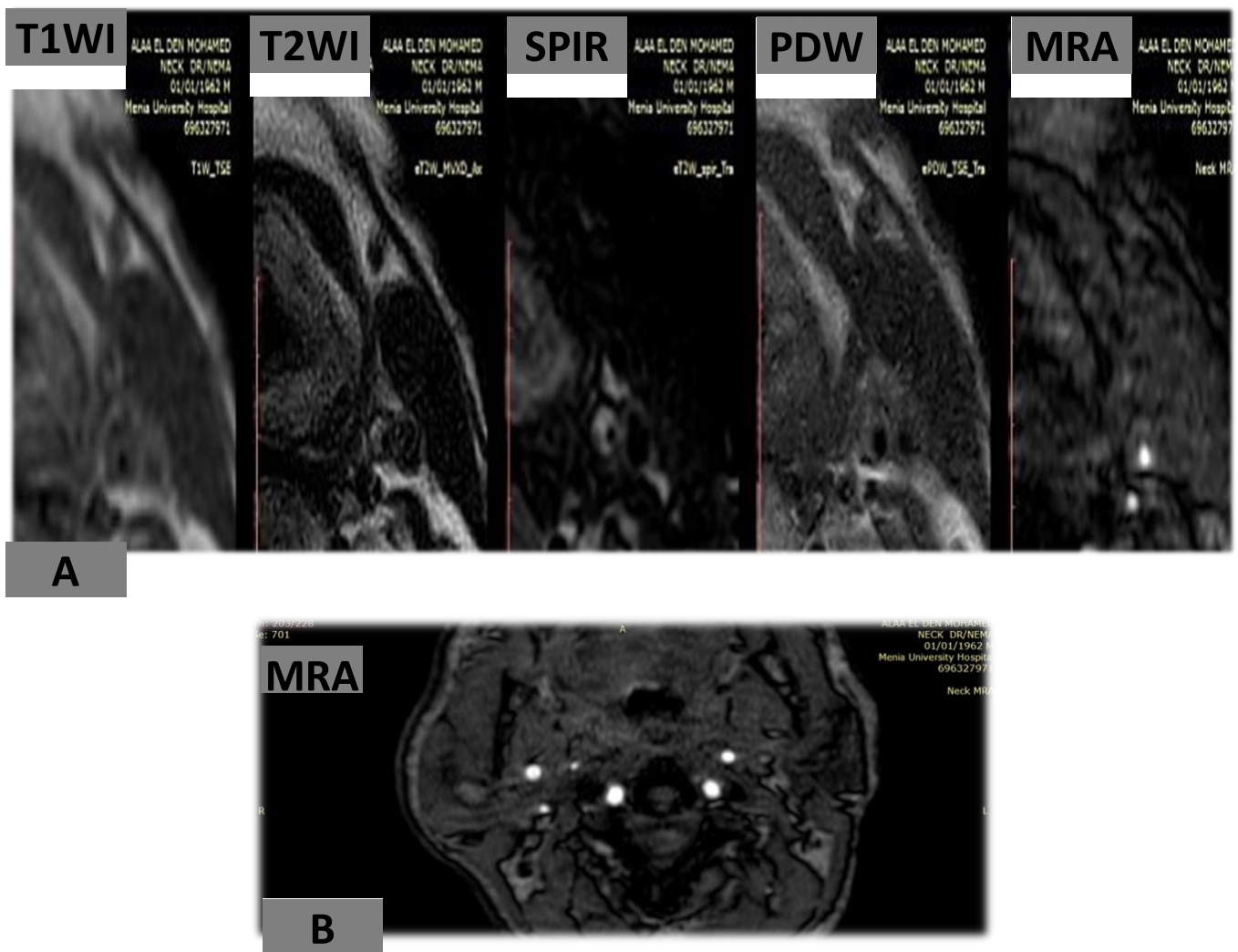
carotid duplex:-



**Figure 1**

- **A,B** transverse section ultrasound/Doppler images of left CCA showing a hypo echoic atheromatous plaque seen at the left CCA with smooth surface .B, the plaque has more than 70% stenosis with high PSV about 250 cm/sec .
- **C** Longitudinal section ultrasound /Doppler images of cervical portion of right ICA that is seen completely occluded (same or relatively reduced caliber) by hypo to iso echoic thrombus.....**Chronic occlusion.**

## Carotid MRI:-



**Figure 2**

- **A**, An atheromatous plaque is noted at the left CCA with smooth surface that shows intra plaque hemorrhage attaining high signal at T1WI, SPIR axial images and T2 axial image denoting recent intra plaque hemorrhage (1 week age).
- **A**, Mixed calcification of plaque is noted (deep and superficial), **superficial calcification appears only at MRA**.
- **B**: Near totally occluded right cervical ICA detected at MRA axial image as chronic thrombus (more than 6 weeks) appears **with low signal intensity cannot be detected by other conventional MRI sequences**. Prominent right ECA and ascending cervical artery at the right side due to chronic near complete occlusion of right ICA

## **Radiological diagnosis:-**

- Vulnerable atheromatous plaque at left CCA with intra plaque hemorrhage ( recent about 1 week age) hyper intense at T1 and T2 SPIR as well as mixed calcifications
- MRI has additional role in detection of intra plaque hemorrhage and mixed calcification
- MRI has converse role in detection of tiny flow within the apparently totally occluded right ICA by carotid duplex.