

Fig. 1) 21-year-old Woman (first case) with the Symptoms of Headache, Dizziness, Nausea and Vomiting, with Transverse, Sigmoid, Thrombosis and Right Jugular Vein in the Sub-acute Phase (6 to 15 days from onset of symptoms to the time of imaging)- White Arrows indicating Thrombosis in the Transverse and Right Sigmoid Sinuses: Thrombosis (methemoglobin) as a paramagnetic substance in the transverse and sigmoid sinuses has caused dark lines in these areas. Right transverse and sigmoid sinus thrombosis is observed in magnetic images (A), SWI (C), and mIP SWI (D) with decreased signal intensity. Signal change in phase image (B) is not detectable because of proximity of the sinuses with Calvarium bone. Right jugular vein thrombosis is not detectable due to magnetic susceptibility artifact of the temporal bones.

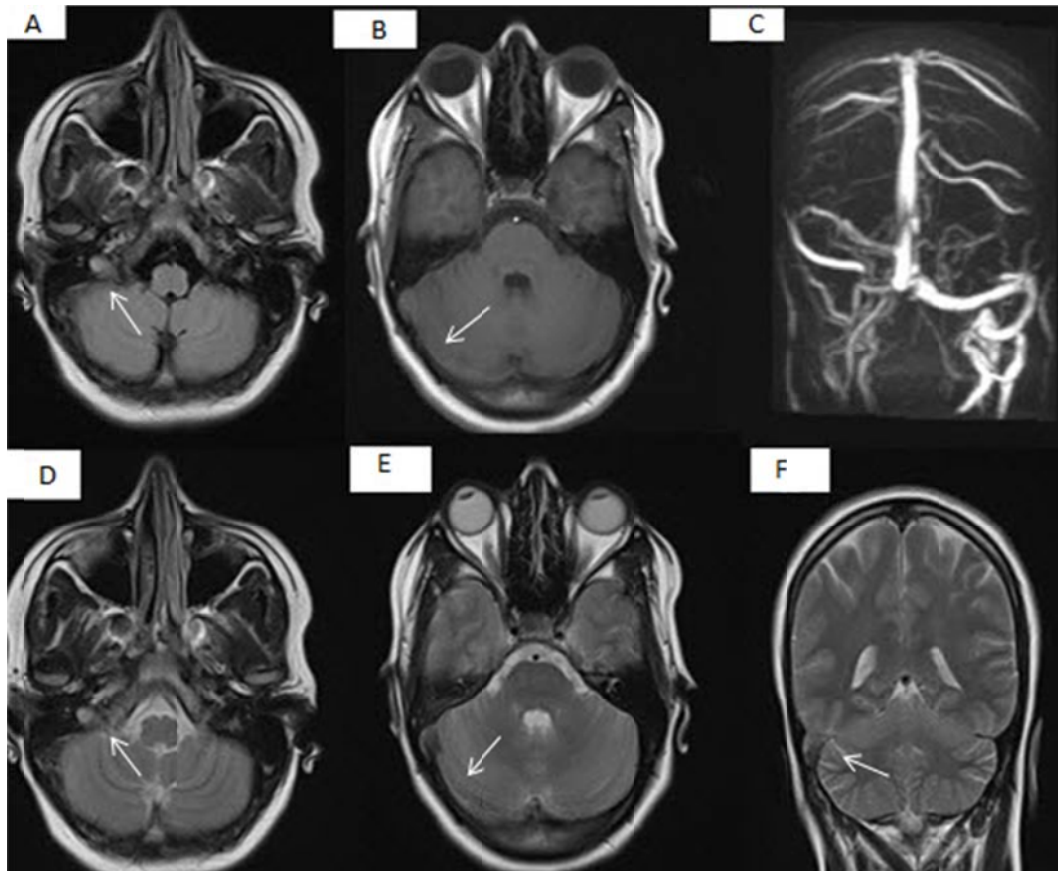


Figure 2) Study of MRI and PC-MRV Routine Sequences in the First Patient: The right internal jugular vein thrombosis in T1W image (A) and T2W (D) has high signal intensity. However, the right transverse and sigmoid sinus thrombosis is shown with the same strength as the parenchyma. Lateral sinuses and anterior superior sagittal sinuses are rarely seen in the axial view. The right transverse sinus thrombosis in T2 coronal cutting (F) has high signal intensity. Transverse and right sigmoid sinus thrombosis and internal jugular vein are observed in MIP PC-MRV image (C) with the absence of signals from the arterial body flow.

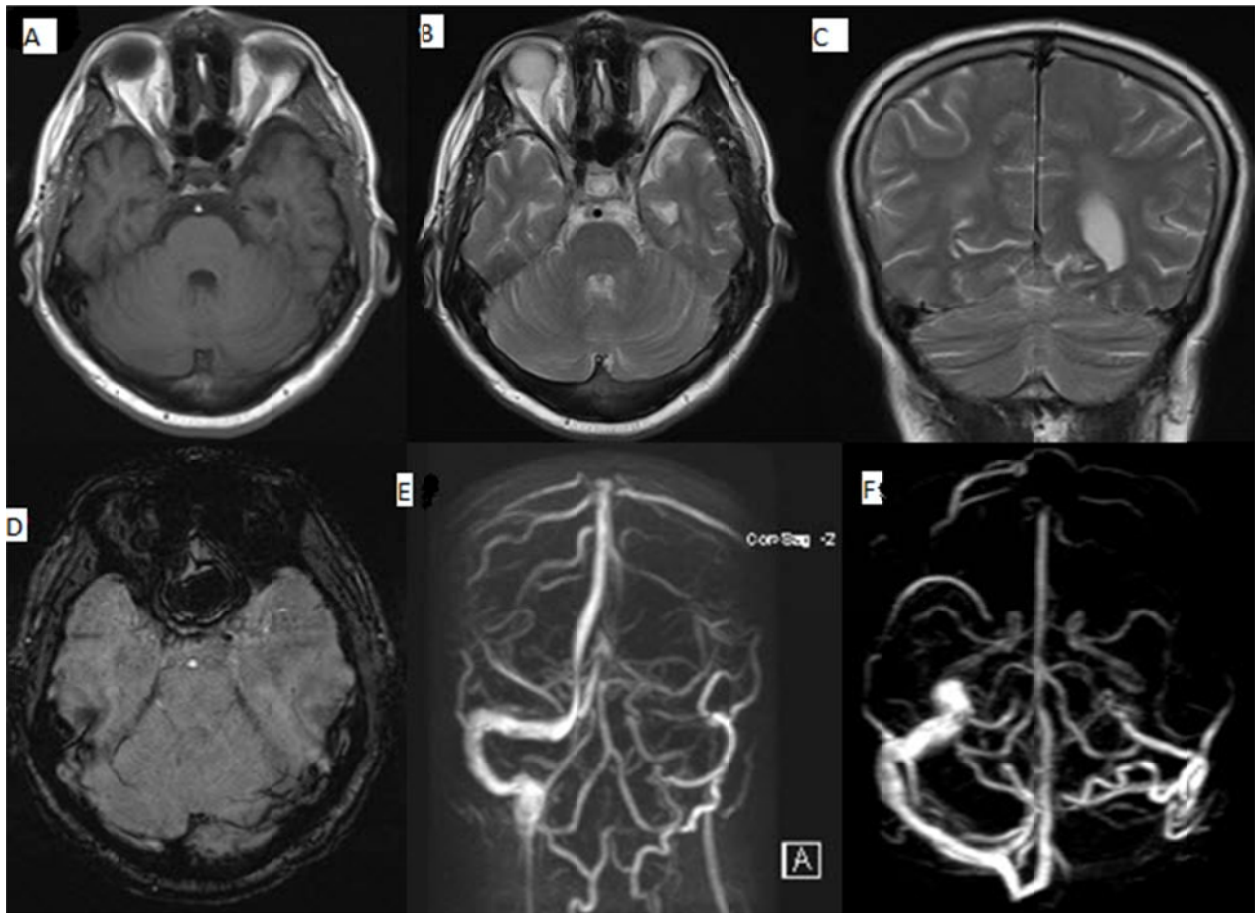


Figure 3) A 54-year-old Man (the patient) with Symptoms of Headache and Blurred Vision with Left Transverse Sinus Thrombosis in the Acute Phase (first 5 days after the onset of symptoms to the time of imaging): Thrombosis is seen in the PC-MRV images (E and F) with lack of signal from venous blood flow. Thrombosis (deoxyhemoglobin) cannot be identified in axial T1W images (A), and axial and coronal T2W images (B and C). It should be noted that the sensitivity of T1W and T2W in the thrombosis display is less in the acute period. Thrombosis in the acute phase has the same intensity as parenchyma in T1W, and it has low signal intensity in T2W. Thrombosis, in the SWI image (D) has a decrease in the slight signal intensity, but it is not enough for diagnosis. Therefore, the sensitivity of SWI in display of transverse sinus thrombosis is less in the acute phase.

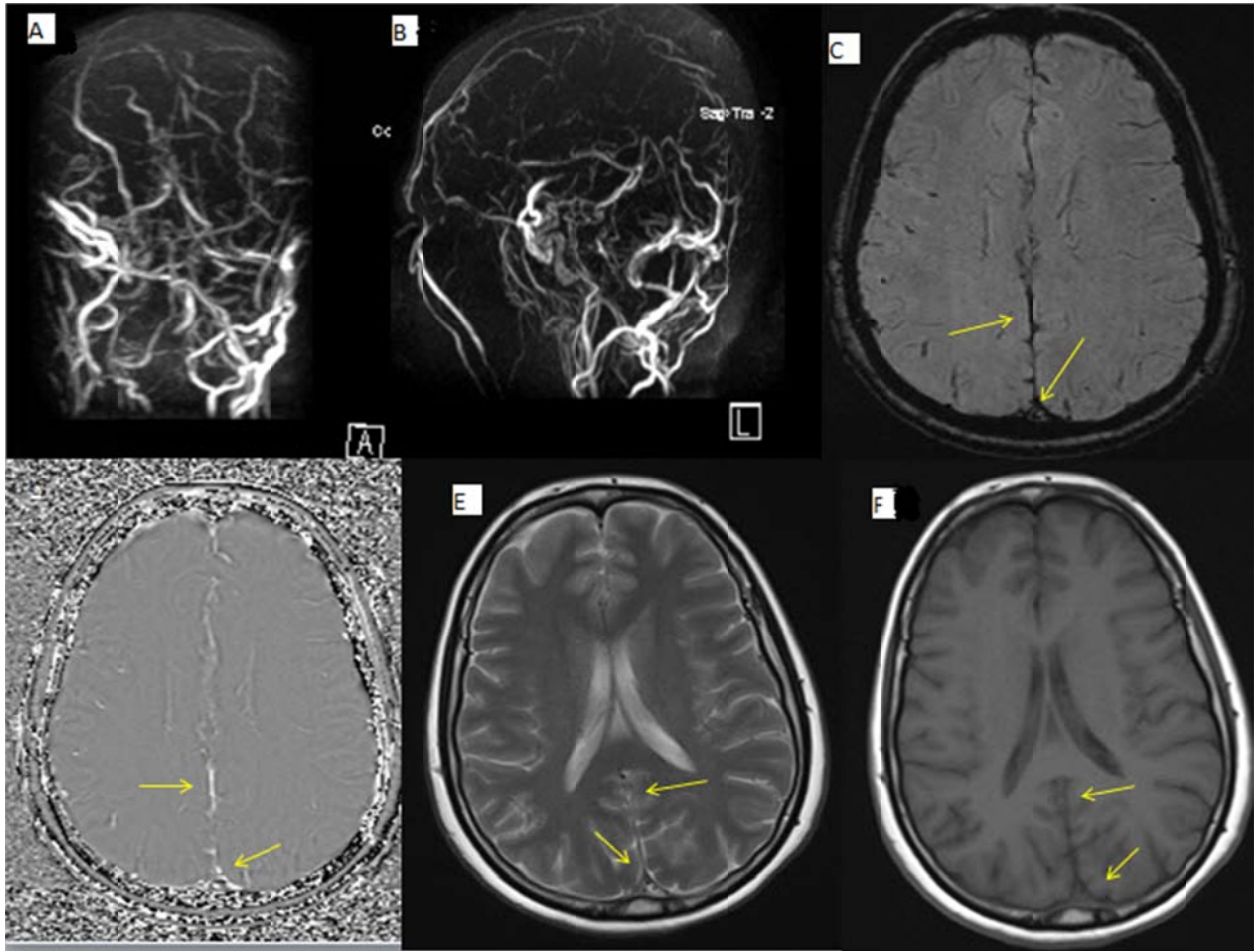


Figure 4) A 54-year-old Woman (case III) with Severe Headache with All Dural Sinus Thrombosis in Sub-acute Phase: Superior sagittal sinus thrombosis has high signal intensity in T2W image (E) and has the same intensity as parenchyma in T1W image (F). Inferior sagittal sinus thrombosis is not visible in T1W and T2W images (E and F) because the thickness of their slices is 5mm. Superior and inferior sagittal sinus thrombosis is observed with signal intensity reduction in SWI image (C), and it is observed with high signal intensity in SWI image (D). SWI sequence, compared to spin echo sequence (T1W and T2W), has more sensitivity to paramagnetic effects of thrombosis, and the thickness of SWI sequence slices is 2mm. Superior and inferior sagittal sinus thrombosis is observed in PC-MRV images (A and B) in the absence of signals from sinus venous blood flow.