

**“TO BE OR NOT TO BE – THAT IS THE QUESTION”:
whether acute cephalalgia during intravenous immunoglobulin treatment
for Guillain-Barré syndrome associated with anti-GD1b antibodies is
a post lumbar puncture headache or a cerebral venous thrombosis.**

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Introduction: Human plasma-derived immunoglobulin products represent an important treatment for immunodeficiency syndromes, autoimmune and inflammatory diseases. Thromboembolic events (TEEs) are rare (1-2%) but potentially fatal complications of intravenous immunoglobulin (IVIg), that tend to occur during or within 24 hours of Ig administration^{1,2}.

Case report: A 36 year-old Caucasian woman, in treatment with combined vaginal contraceptive ring (120 mg of etonogestrel/15 mg of ethinyl estradiol), was admitted for an acute development of cervico-dorsal-brachial pain, progressive legs and arms weakness, 7 days after a respiratory infection. When admitted, she discontinued contraceptive ring. Cerebrospinal fluid analysis was normal. Nerve conduction studies showed an acute inflammatory demyelinating polyneuropathy pattern characterized by decreased motor nerve conduction velocity and conduction blocks. A diagnosis of Guillain-Barré syndrome (GBS) with serum positivity for anti-GD1b IgG antibodies was made. The patient was treated with IVIg (0.4 g/kg per 5 days). After the lumbar puncture and the first dose of IVIg, she developed a subacute persisting headache, poorly improving with the lying position. Blood exams were normal, except for mildly increasing D-dimer. Six days after the last administration of IVIg, she developed right arm tingling. Brain MRI showed a T2 hyperintense with decreased ADC values at the left postcentral gyrus. The Magnetic Resonance Venography with 3D and 4D PCA technique showed a complete occlusion of superior sagittal sinus, veins of Trolard, straight sinus, left transverse sinus, right sigmoid sinus and internal jugular, and a partial occlusion of right transverse sinus. She was treated with intravenous unfractionated heparin, and then oral anticoagulant. After the event, she reported to have independently taken combined contraceptive pills (0.02 mg of ethinyl estradiol/3 mg of drospirenone) during the recovery.

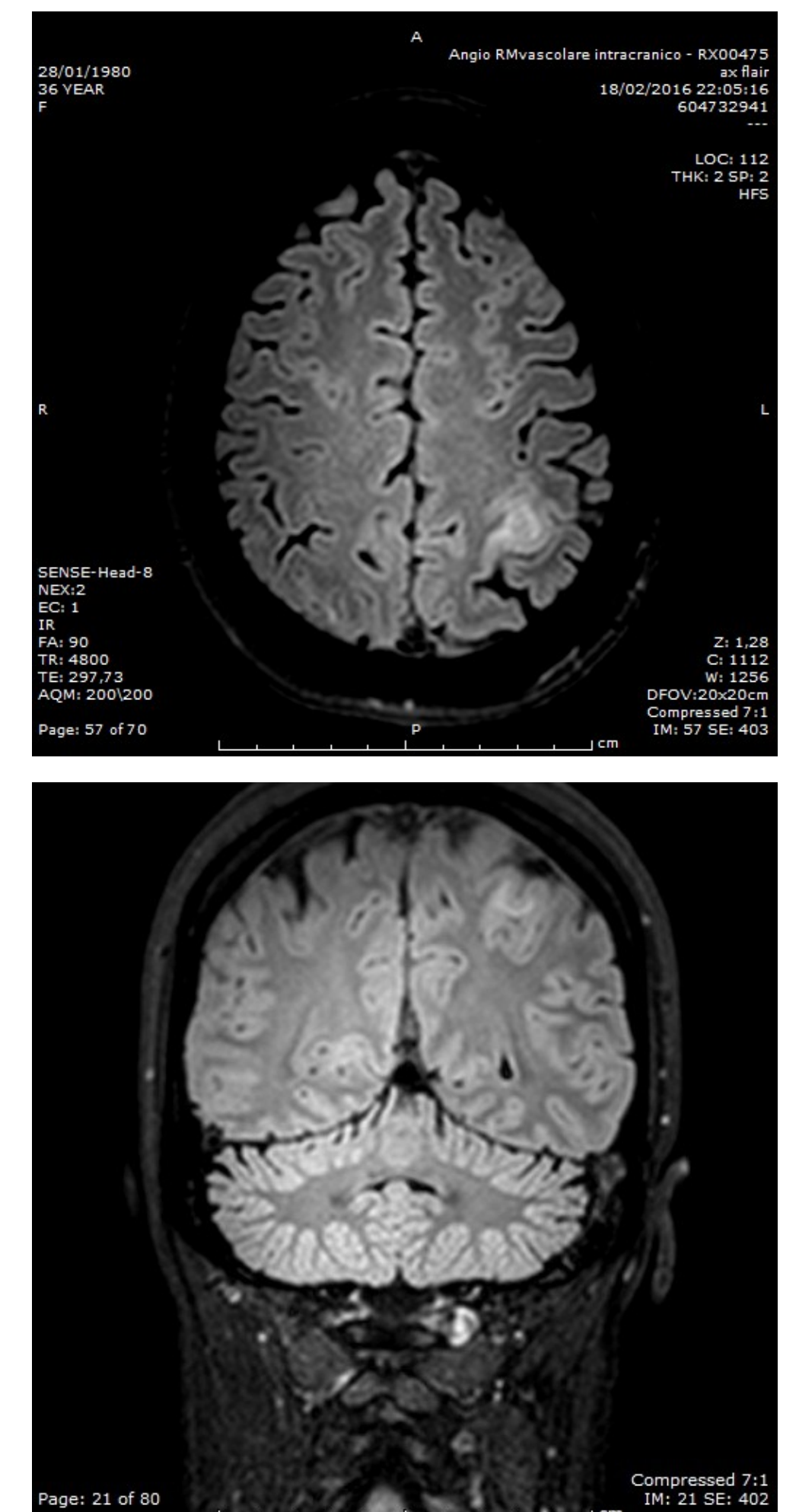
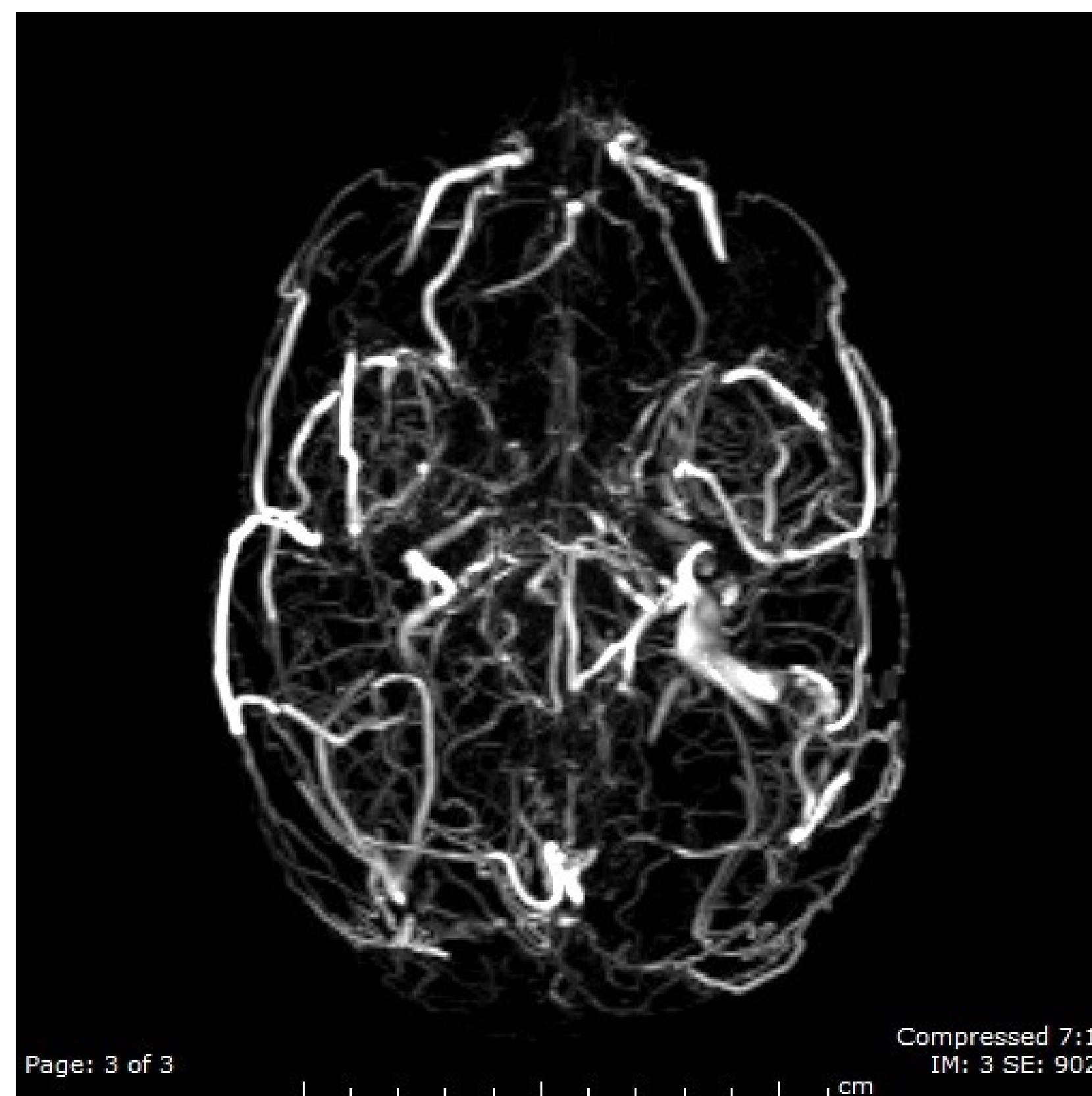
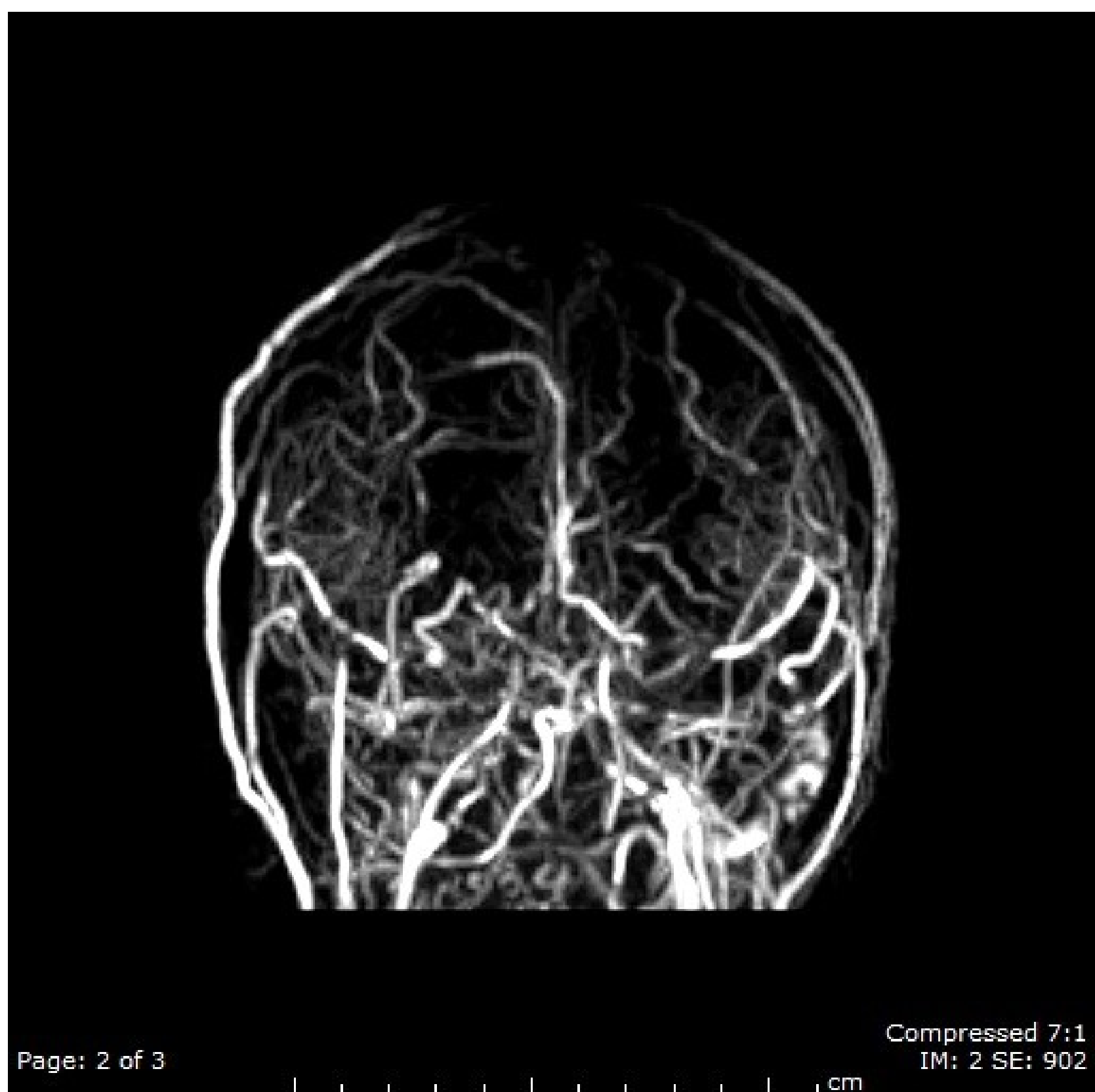


Fig 1-2: MRI Venography with 3D PCA sequences show multiple dural venous sinus thrombosis.

Fig 3-4: Axial and Coronal FLAIR brain MRI sequences show left postcentral gyrus lesion.

Discussion: Since TEEs during IVIg are considered a rare but fatal adverse effect, thromboembolic risk factors might be evaluated before starting IVIg. Among those, contraceptive therapy, both oral and vaginal³, may represent an important co-factor. In GBS, lumbar puncture and IVIg first administration often proceed simultaneously; a consequent development of persistent headache might include different and sometimes serious diagnosis.

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3. Kolacki C, Rocco V. The combined vaginal contraceptive ring, NuvaRing, and cerebral venous sinus thrombosis: A case report and review of the literature. *J Emerg Med*. 2012;42(4):413-416. doi:10.1016/j.jemermed.2011.06.011.