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Central Venous Sinus Thrombosis with Subarachnoid Hemorrhage Following an mRNA COVID-19 Vaccination: Are These Reports Merely Co-Incidental?

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Abstract

BACKGROUND Multiple vaccines have been developed against COVID-19 as a collaborative worldwide effort. On March 18, 2021 the European Medicines Agency reported a serious and rare adverse effect of thrombosis with thrombocytopenia syndrome (TTS) after receiving the ChAdOx1 nCoV-19 vaccine; most of these cases were associated with cerebral venous sinus thrombosis (CVST). To date, there are no cases of TTS-related CVST reported after receipt of either of the 2 mRNA COVID-19 vaccines authorized for use in the United States. We report a case of CVST with the Moderna mRNA vaccine. **CASE REPORT** A healthy 45-year-old male patient without any risk factors presented with new-onset seizures 8 days after the receipt of the 2nd dose of Moderna (mRNA-1273), with concomitant SAH as a complication. One day prior to admission, he noted headaches and neck pain unrelieved by over-the-counter analgesics. Computed tomography (CT) scan brain without contrast revealed a left frontal lobe intracerebral hemorrhage (ICH) along with subarachnoid hemorrhage (SAH). A subsequent contrast-enhanced magnetic resonance imaging (MRI) brain confirmed the CT findings as well as anterior superior sagittal sinus thrombosis. He had normal platelet count with a negative thrombophilia work-up and cancer screening. He was successfully anticoagulated with heparin and discharged on warfarin without neurological sequelae or further seizures. The case was reported to the US Vaccine Surveillance System. **CONCLUSIONS** mRNA vaccine-related CVST is an extremely rare phenomenon. More data are needed to establish causality and understand the role of vaccine-related immune response resulting in thrombotic events with or without TTS.

Conflict of interest statement

Conflict of interest: None declared

Conflict of Interests

None declared.

Figures

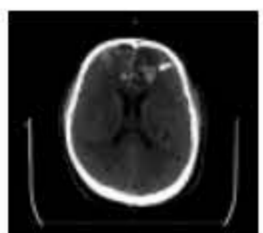


Figure 1. Non-contrast CT brain, axial section...

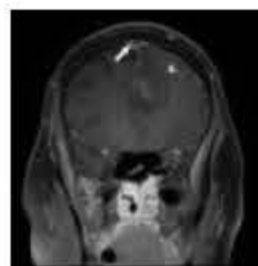


Figure 2. T1-weighted MRI coronal section showing...

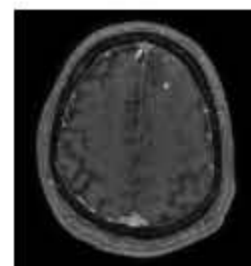


Figure 3. T1-weighted MRI axial section showing...

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