Unmasking a subarachnoid hemorrhage

Figure MRI performed with face mask shows diffuse bilateral frontal sulcal hyperintensities

(A) Hyperintensities in fluid-attenuated inversion recovery sequences, disappearing after mask removal (B). (C) The face mask used by our patient, containing a metal part (arrow) in the upper part of the face mask, probably responsible for the susceptibility artifact.

A 53-year-old patient presented with acute headache. CT and intra/extracranial CT angiography were normal. A traumatic lumbar puncture showed 8,500 erythrocytes/mm³ and 24 leukocytes/mm³. MRI showed extensive sulcal fluid-attenuated inversion recovery (FLAIR) hyperintensities suggesting subarachnoid hemorrhage (figure). However, since T2*-weighted sequences were normal and the patient was wearing a face mask (for a possible meningeal infection), a radiologic artifact was suspected. Immediately after, MRI without face mask showed absence of FLAIR abnormalities, confirming the suspected susceptibility artifact probably caused by the metal part of the face mask.

Other artifact-related causes of subarachnoid FLAIR hyperintensities include CSF flow, vascular pulsation, motion artefact, and supplemental oxygen.¹

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