

Mystery Case:

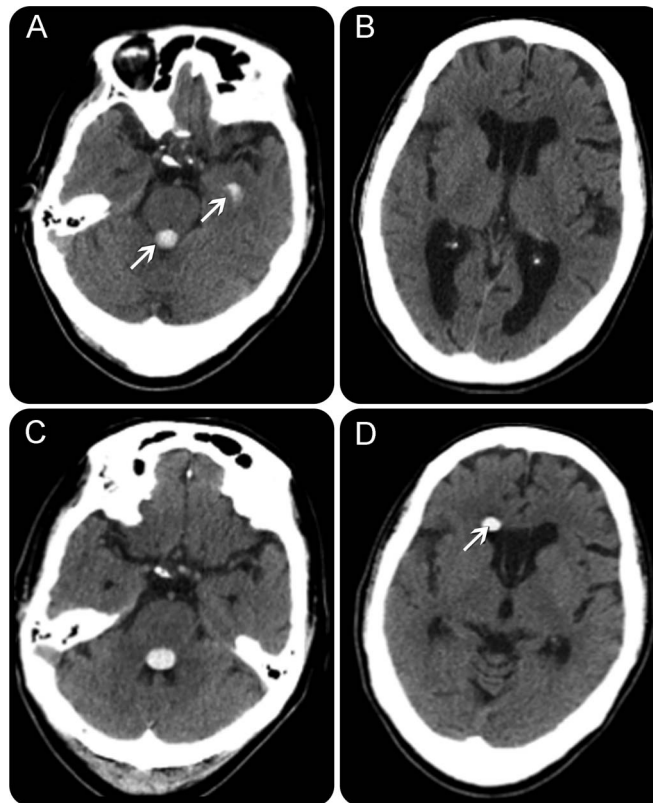
A case of oil in ventricles

Deception for intraventricular hemorrhage

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Figure 1 CT



(A, B) CT scan shows hyperdense mass in the fourth ventricle and temporal horn with no evidence of other masses. (C, D) Next day scan shows evidence of translocation of the hyperdense sign from the temporal to the frontal horn.

A 73-year-old woman with history of diabetic retinal detachment surgery 25 years ago in China presented with dizziness, headaches, and syncope. Noncontrast CT head (NCCT) showed hyperdensity within the left lateral temporal horn and fourth ventricle. Next day NCCT and MRI showed a shift of hyperdensity to the right frontal horn (figures 1 and 2).

Silicone oil has been used for intraocular tamponade in treating complicated retinal detachment.¹ Though rare, intracranial migration of oil has been reported with potential misdiagnosis as hemorrhage secondary to appearance on

CT and MRI.² The mechanism of symptoms is unknown.¹

AUTHOR CONTRIBUTIONS

Haitham Dababneh: drafting/ revising the manuscript, study concept or design, analysis or interpretation of data, accepts responsibility for conduct of research and final approval, acquisition of data. Mohammed Hussain: drafting/ revising the manuscript, study concept or design, analysis or interpretation of data, accepts responsibility for conduct of research and final approval, acquisition of data, study supervision. Asif Bashir: drafting/ revising the manuscript, analysis or interpretation of data, accepts responsibility for conduct of research and final approval, contribution of vital reagents/tools/patients, study supervision.

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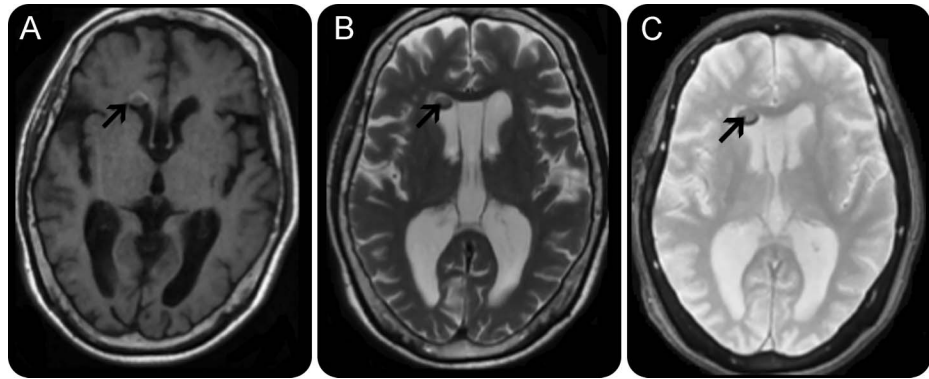
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Figure 2 MRI scan



MRI shows evidence of a mass with hyperintense signal on T1-weighted image (A) in the right frontal horn of the left ventricle, but had variable signal intensity on both T2-weighted (B) and gradient-recalled echo (C) sequences, showing the chemical shift artifact usually associated with silicone breast implant.

DISCLOSURE

The authors report no disclosures relevant to the manuscript. Go to Neurology.org for full disclosures.

REFERENCES

1. Williams RL, Beatty RL, Kanal E, Weissman JL. MR imaging of intraventricular silicone: case report. *Radiology* 1999; 212:151–154.
2. Chang CC, Chang HS, Toh CH. Intraventricular silicone oil. *J Neurosurg* 2013;118:1127–1129.

MYSTERY CASE RESPONSES

The Mystery Case series was initiated by the *Neurology*[®] Resident & Fellow Section to develop the clinical reasoning skills of trainees. Residency programs, medical student preceptors, and individuals were invited to use this Mystery Case as an educational tool. Responses were solicited through a group e-mail sent to the American Academy of Neurology Consortium of Neurology Residents and Fellows and through social media.

All of the responses we received came from individuals rather than groups. A total of 22% of respondents correctly identified the CT findings in this case. These included hyperdensities in the fourth ventricle and temporal horn of the left lateral ventricle on initial imaging, and then in the frontal horn of the right lateral ventricle, with some enlargement of the hyperdensity in the fourth ventricle, on

follow-up imaging. This patient also had the incidental finding of a septum pellucidum cavum. The differential for intraventricular hyperdensities would typically include intraventricular hemorrhage, for which etiologies could include aneurysms or metastases, as suggested by 33% of respondents. However, in this case the findings were caused by intracranial migration of oil from treatment of the patient's diabetic retinal detachment, as proposed by respondent Shinichi Kan. The oil had moved to the contralateral frontal horn in the follow-up imaging.

The patient's MRI scan (figure 2) showed that the right frontal collection was partially hyperintense on the T1-weighted sequence (A) but had variable signal intensity on T2-weighted (B) and gradient-recalled echo (GRE) (C) sequences, in keeping with the chemical shift artifact that can also be seen with silicone breast implants. Blood, on the other hand, would appear clearly hypointense on GRE and would acutely be hypointense on T2 and isointense to hyperintense on T1.

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