

Letter of response: Subarachnoid migration of intraocular silicone oil

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We read with interest the letter to the editor: Subarachnoid migration of intraocular silicone oil Subarachnoid migration of intraocular silicone oil.

First of all, we thank Ascaso et al. for their suggestions and comments.

The mechanism and predisposing factors of the migration of silicone oil in the central nervous system are still debated. The migration of silicone into the subarachnoid space could be explained by a continuum between the subarachnoid space surrounding the optic nerve and the subhyaloid space [4, 5]. This continuum might be involved in other pathologies such as Terson syndrome or papilledema in benign intracranial hypertension.

Predisposing factors could be added to explain the silicone migration: increased intraocular pressure (higher than 40 mmHg) allowed a communication of silicone oil with the subarachnoid space [5, 6]; deep cupping of the optic disk allowed the silicone oil to enter the subarachnoid space by breaking through the cerebral pia [2]; the role of congenital anatomical deformities, which would lead to an abnormal passage between the subhyaloid and subarachnoid space [3].

Silicone distribution in different localizations within the ventricle (such as the lateral, third and fourth ventricles) was probably related to the free-floating nature of silicone due a lower gravity than cerebrospinal fluid, suggested by Chang et al. [1]. One hypothesis to explain this relatively low density was a dilution of the silicone oil with CSF [1, 6].

In these present cases, no congenital anatomical deformities and no atypical aspects of the optic disc were found in the history of these patients. The main hypothesis of the migration of oil for these patients remained the increased intraocular pressure.

References

1. Chang C, Chang H, Toh C (2013) Intraventricular silicone oil. Case report. *J Neurosurg* 118:1127–1129
2. Fangtian D, Rongping D, Lin Z, Weihong Y (2005) Migration of intraocular silicone into the cerebral ventricles. *Am J Ophthalmol* 140(1):156–158
3. Grzybowski A, Ascaso FJ (2016) Migration of intraocular silicone oil to CNS: the role of elevated intraocular pressure and congenital optic nerve abnormalities. *Clin Neuroradiol* 26(1):127
4. Mathis S, Boissonnot M, Tasu JP, Simonet C, Ciron J, Neau JP (2016) Intraventricular silicone oil: a case report. *Medicine* 95(1):e2359
5. Papp A, Toth J, Kerényi T, Jäckel M, Süveges I (2004) Silicone oil in the subarachnoid space—a possible route to the brain? *Pathol Res Pract* 200:247–252
6. Shields C, Eagle RC (1989) Pseudo-Schnaber's cavernous degeneration of the optic nerve secondary to intraocular silicone oil. *Arch Ophthalmol* 107:714–717

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