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CORRESPONDENCE

Spinal anesthesia in a patient with Marchiafava-Bignami disease

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To the Editor,

We present a novel case report of spinal anesthesia in a patient with newly diagnosed Marchiafava-Bignami disease (MBD). This disease is characterized by demyelination or necrosis of the corpus callosum and most commonly occurs in chronic malnourished alcoholics.[1,2] The disease typically appears in middle or late adult life and may be associated with Wernicke's encephalopathy.[1] Symptoms are variable but include confusion, dementia, incontinence, spasticity, dysarthria, and ataxia. On imaging, a computed tomography scan of the head shows hypodense regions within the corpus callosum, and magnetic resonance imaging (MRI) reveals decreased T1-weighted and increased T2-weighted signals, particularly in the central portion of the corpus callosum and possibly in nearby white matter tracts.[1]

Our patient, a 73-yr-old male with a history of chronic alcoholism, hypertension, and ocular myasthenia gravis, presented at our institution for revision of his right total hip arthroplasty. His last alcoholic drink was approximately one month prior to admission. His neurological symptoms included a wide-based gait, ataxia, and intermittent bilateral spastic paraparesis of the legs. Magnetic resonance imaging of his head revealed hypodense T1 signals in the corpus callosum body, while an MRI of his spine was normal. Based on these findings, a new diagnosis of MBD was made.

Following informed consent, 0.75% hyperbaric bupivacaine 15 mg mixed with hydromorphone 0.2 mg was injected intrathecally at the L3-L4 level using a 25G Whitacre spinal needle. The neuraxial block was assessed by loss of cold sensation and was found to be adequate at the T4 dermatomal level. Propofol was infused intravenously for sedation at 100 $\mu g \cdot kg^{-1} \cdot min^{-1}$ during surgery, which proceeded uneventfully. Morphine 5 mg and dimenhydrinate 20 mg were injected subcutaneously for postoperative analgesia and antiemesis, respectively. At the end of the case, the patient was oriented to person, place, and time. On postoperative day 1 follow-up, there were no motor or sensory deficits or any evidence for spastic quadriparesis.

Currently, there is little information available on the anesthetic management of patients with MBD. One reported case describes a malnourished 21-yr-old female with a remote history of alcohol abuse who developed transient acute encephalopathy after receiving a general anesthetic for laparoscopic cholecystectomy.[3] Although the literature lacks reports on spinal anesthesia in patients with MBD, we elected to proceed with spinal anesthesia after considering our patient's normal spine MRI, lack of recent spastic paraparesis, type of surgery, and a previous uneventful spinal anesthetic for his initial right total hip arthroplasty. As well, we preferred to avoid general anesthesia in a patient with a known supratentorial disease due to the lack of information on any potential for unpredictable interactions of general anesthetic agents with the MBD disease process. In addition, the corpus callosum may be particularly sensitive to general anesthetics, as an MRI study showed significantly increased T2 signalling in the corpus callosum of ten asymptomatic female patients four to five hours after standard general anesthesia.[4] While the clinical implications of that particular study are unknown, it nevertheless highlights the potential for general

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anesthetics to impact the corpus callosum. Although MBD is a demyelinating disorder, MBD does not involve the spinal cord, as was verified by the normal spine MRI in our patient. Since intrathecal hyperbaric local anesthetics primarily affect spinal cord nerves, we did not expect the agents to reach a level high enough to affect the demyelinated interhemispheric tracts of the corpus callosum.

In conclusion, we report a novel case of uneventful spinal anesthesia administration in a patient with MBD. This case suggests that spinal anesthesia may be considered a viable alternative to general anesthesia in patients with MBD, when appropriate.

Conflicts of interest None declared.

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