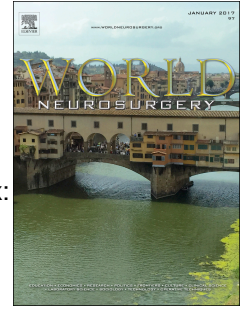


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Microvascular Decompression and Arachnoid Cyst Fenestration for Treatment of Medulla Oblongata Compression Caused by Arachnoid Cyst-Vascular Loop Complex: Case Report and Discussion.

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ABSTRACT:

Vascular compression of neural structures has long been established as an etiology for dysfunction of multiple cranial nerves. Classically, as is the case of trigeminal neuralgia, vascular compression by an offending artery and sometimes vein exerting pressure at the root entry zone of the trigeminal nerve can lead to the characteristic pain syndrome. In these cases, microvascular decompression is an effective, durable surgical intervention to relieve the neuralgia. In this report, we present a unique case of a patient with direct compression of the medulla oblongata by an arachnoid cyst and associated vascular loops, with subsequent resolution of the patient's symptoms following fenestration of cyst and microvascular decompression.

BACKGROUND:

Vascular compression of neural structures has long been established as an etiology for dysfunction of multiple cranial nerves (1-3). Classically, in the case of trigeminal neuralgia, vascular compression by an offending artery and sometimes vein exerting pressure at the root entry zone of the trigeminal nerve can lead to the characteristic pain syndrome (1, 4). Similar processes affecting the facial nerve, glossopharyngeal nerves are known to cause hemifacial spasm, and glossopharyngeal neuralgia, respectively (5, 4). In these cases, microvascular decompression is an effective, durable surgical intervention to relieve the neuralgia (6,7, 8). In this report, we present a unique case of a patient with compression of the medulla oblongata by an arachnoid cyst and associated vascular loops.

Arachnoids cysts are thought to be related to foldings of the arachnoid membranes, containing cerebrospinal fluid leading to cyst formation. These account for 1% of all atraumatic intracranial mass lesions (9). These are typically found in arachnoid-rich regions of the brain and spinal cord, most commonly in the Sylvian fissures. These congenital lesions can cause compression of neural structures leading to disturbance of cerebrospinal fluid circulation (10, 11, 12).

Our review of the literature reveals case reports of arachnoids cysts that have been implicated in the pathophysiology of trigeminal and facial nerve dysfunction, but none with direct compression of the brain stem (13-14). In addition, there have been multiple case reports of vascular compression of the brain stem, relieved by microvascular decompression, but to our knowledge there have been no reports of arachnoid cysts causing medullary compression(14,15). In that sense, this is a rare and unique case of a compressive arachnoid cyst causing a multitude of signs and symptoms attributable to dysfunction of the medulla oblongata, with subsequent resolution following surgical cyst fenestration and decompression.

CASE REPORT:

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