Vestibular schwannoma surgery vascular complications

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Cerebral vasospasm is an important cause of morbidity after subarachnoid hemorrhage, but can also occur after vestibular schwannoma surgery.

Delayed neurological deterioration in a patient who has undergone surgery not explained by an intracranial mass lesion should be promptly investigated. If vasospasm is diagnosed, it should be treated aggressively with Triple H therapy and early angioplasty [1].

Case series

2015

In a retrospective analysis of patients treated between April 2013 and February 2014 in a hospital in China. Patients with other intracranial abnormalities, postoperative vasoactive drug use, or postoperative abnormalities in consciousness, vital signs, blood electrolytes or arterial blood gases were excluded. The tumor was removed using the retrosigmoid approach, with care taken to minimize bleeding and protect the facial, trigeminal and lower cranial nerves and brainstem. Flow velocities in the bilateral internal carotid, middle cerebral and anterior cerebral arteries, assessed with transcranial Doppler ultrasonography before surgery and on postoperative days 1, 3, 5, 7 and 9, were used to detect cerebral vasospasm(mild, 120-140 cm/s; moderate, 141-200 cm/s; severe,>200cm/s). Factors associated with vasospasm were identified by univariate and multivariate analyses.

Forty-three (53.8%) of the 80 patients (36 males) included were diagnosed with cerebral vasospasm: 5 (11.6%) were categorized as mild, 36 (83.7%) as moderate and 2 (4.7%) as severe. Multivariate analysis showed that younger patient age, larger tumor size and firm tumor consistency were independently associated with postoperative cerebral vasospasm ($P<0.05$).

In conclusion, younger patient age, larger tumor size and firmer tumor consistency were independently associated with postoperative cerebral vasospasm in patients with vestibular schwannoma [2].

2003

Six cases of vascular complications were identified: one case of cerebral vasospasm secondary to persistence of subarachnoid blood after injury to Dandy's vein; three cases of arterial infarction giving rise to a partial AICA syndrome with an unusual nystagmus in two cases (ipsilateral in one patient and strong controlateral in one patient presenting preoperative vestibular areflexia); one case of hematoma of the cerebello-pontine angle (CPA) causing strong ipsilateral nystagmus; and one case of venous infarction of the cerebellar vermis secondary to accidental sinus thrombosis.

Vascular complications are potentially devastating and should be identified as early as possible. Rapid

extubation is recommended for systematic neurologic assessment. Among abnormal signs and symptoms that should alert the surgeon, marked nystagmus ipsilateral to the operated side or contralateral in patient presenting preoperative vestibular areflexia appears to be of great value [3].

Case reports

LeRoux et al. report one case of symptomatic cerebral vasospasm documented by transcranial Doppler and angiography studies. The patient responded to hypervolemic therapy [4].

1)
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3)
Kania R, Lot G, Herman P, Tran Ba Huy P. [Vascular complications after acoustic neurinoma surgery]. Ann Otolaryngol Chir Cervicofac. 2003 Apr;120(2):94-102. French. PubMed PMID: 12916281.
4)
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