

Editors' Pick in November 2024

Bum-Tae Kim

Former Editor in Chief, Journal of Korean Neurosurgical Society; Department of Neurosurgery, Soonchunhyang University Bucheon Hospital, College of Medicine, Soonchunhyang University, Bucheon, Korea

Among the 11 papers published in the November issue of *Journal of Korean Neurosurgical Society (JKNS)* 2024, the following two papers, which deserve attention from readers, are selected by the editorial boards.

Potential mechanism and involvement of p120-catenin in the malignant biology of glioma⁴⁾

The p120-catenin protein (catenin [cadherin-associated protein], delta 1 [CTNND1]) is an integral component of the synaptic adhesion molecule complex and participates in ensuring cell adhesion stability and regulating dendritic spine formation¹⁾. P120 contributes to the development of tumor microtubules (TMs) in various cancerous tumors. However, its role in the intercellular junction of glioma remains unclear. The purpose of this study was to analyze how p120-catenin influences the malignant characteristics of gliomas and to elucidate potential underlying mechanisms.

The p120 expression level was assessed in the brain tissues of glioma patients and patients with epilepsy using the immunohistochemical method. Meanwhile, quantitative polymerase chain reaction (QT-PCR) technology was employed to assess the expression of p120 in the brain tissues of glioma patients and epilepsy patients. Glioma cells lines were used for in vitro analysis and was quantified by western blotting assay.

The migratory and invasive capabilities of glioma cells were studied by wound healing assay.

On this study, the brain tissues of the glioma group exhibited a remarkable increase in the p120 expression level as compared to brain tissues of the nontumor group. Furthermore, a strong positive correlation was noted between the malignancy degree in glioma brain tissues and p120 expression in Western blotting and QT-PCR. Enzyme-labeled assay showed a remarkable increase in calcium concentration in glioma cells after small interfering RNA (siRNA) treatment.

Therefore, this study showed that p120 plays a key role in promoting glioma cell invasion and proliferation by participating in microtubule formation and regulation of intracellular calcium ion levels and regulating the process.

Prognostic factors of spinal intramedullary hemangioblastoma : analysis of surgical outcomes and tumor characteristics²⁾

Hemangioblastomas are benign tumors (World Health Organization grade I) of the craniospinal axis. They can occur sporadically or in von Hippel-Lindau (VHL) disease. The aim of surgical intervention is complete tumor resection to relieve spinal cord compression, eliminate the mass of abnormal vascular growth, and ultimately prevent or reverse neurological

• Received : October 20, 2024 • Accepted : October 24, 2024

• Address for reprints : **Bum-Tae Kim**

Department of Neurosurgery, Soonchunhyang University Bucheon Hospital, 170 Jomaru-ro, Bucheon 14584, Korea

Tel : +82-32-621-5059, Fax : +82-32-621-6950, E-mail : bumtkim@schmc.ac.kr, ORCID : <https://orcid.org/0000-0003-2646-8165>

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

decline³⁾.

The purpose of this study was to identify risk factors and strategies for neurologic deterioration following hemangioblastoma surgery. A total of 23 patients treated surgically for histologically confirmed spinal hemangioblastoma patients with postoperative follow-up data for more than 1 year were included. Neurological status was evaluated using the modified McCormick scale (MMCS) both before and after surgery. Change in 12-month post-surgery MMCS were used as an indicator of neurological deterioration or improvement following surgical intervention.

There were 25 surgeries performed for 23 patients. All surgical procedures were performed using a posterior approach. Total resection was achieved in 24 cases. There were no surgical complications. The average age of patients was 44.4 years (range, 20–80). Females accounted for 68%. Eight cases (32.0%) were genetically confirmed to have VHL syndrome.

Authors noted that four cases with neurologic deterioration had ventrally located hemangioblastomas. Ventral hemangioblastomas had a higher incidence of neurological deterioration, a larger tumor size, and a higher tumor/cord ratio than dorsal ones. In three cases, the presence of feeders from the anterior spinal artery (ASA) posed expected risks, thereby precluding embolization. Each of these three cases was accompanied by neurologic deterioration and was diagnosed as VHL.

Therefore, this paper suggests that intramedullary spinal cord hemangioblastomas located ventrally are more likely to have postoperative neurological deficits than those located dorsally, and the reason is that ventrally located hemangioblastomas were greater in size than those in other locations. In particular, most of them were supplied by the ASA in VHL patients.

AUTHOR'S DECLARATION

Conflicts of interest

No other potential conflict of interest relevant to this article

was reported.

Author contributions

Conceptualization : BTK; Data curation : BTK; Formal analysis : BTK; Visualization : BTK; Writing - original draft : BTK; Writing - review & editing : BTK

Data sharing

None

Preprint

None

ORCID

Bum-Tae Kim <https://orcid.org/0000-0003-2646-8165>

• Acknowledgements

This work was supported by Soonchunhyang University Research Fund.

References

1. Duñach M, Del Valle-Pérez B, García de Herreros A : p120-catenin in canonical Wnt signaling. *Crit Rev Biochem Mol Biol* 52 : 327-339, 2017
2. Jang HJ, Moon BJ, Kim KH, Park JY, Chin DK, Cho YE, et al. : Prognostic factors of spinal intramedullary hemangioblastoma : analysis of surgical outcomes and tumor characteristics. *J Korean Neurosurg Soc* 67 : 637-645, 2024
3. Mandigo CE, Ogden AT, Angevine PD, McCormick PC : Operative management of spinal hemangioblastoma. *Neurosurgery* 65 : 1166-1177, 2009
4. Wang L, Liang J, Ji S, Wang C, Huang Q : Potential mechanism and involvement of p120-catenin in the malignant biology of glioma. *J Korean Neurosurg Soc* 67 : 609-621, 2024