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Results of surgical treatment of hemangioblastomas and spinal cavernomas

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Introduction: Vascular tumor of spinal cord is a rare pathology, which by histological nature is most often presented by hemangioblastomas and cavernomas of different localization. Cavernomas and hemangioblastomas arise sporadically, however hemangioblastomas may be associated with the von Hippel-Lindau disease. The spectrum of clinical manifestations of these pathologies is quiet wide—from asymptomatic carriage to severe neurological deficit that lead to permanent disability or death of the patient.

Materials & Methods: From 2013 to 2017, Burdenko Neurosurgery Institute operated 350 patients with intramedullary tumors of different histological nature. Among them, there were 31 of intramedullary hemangioblastomas. Of these, three patients were diagnosed with von Hippel-Lindau disease. In addition to that, Burdenko Neurosurgery Institute performed 26 surgeries for removal of cavernous malformations (CM) on various parts of the spinal cord. Those included 19 intramedullary cases (5.4%), three extramedullary ones, two intradural ones and two extradural cases. Retrospectively, 19 patients were examined with cavernous malformations of intramedullary location. The diagnosis is based on MRI data and neurological examination. The patients were assessed on a McCormick classification part of pre-operative and post-operative treatment.

Results: For patients with hemangioblastomas, mean follow-up was 45 months (36–144 months). The average time of pathogenic pathway was 36 months (12–300 months). MRI examinations of 21 patients showed syringomyelia. Post-operatively only two patients had deterioration of neurological condition, with the rest of the patients showing pre-operative state. For cavernous malformations, the average age of the patients was 44 (20–76 years old). The average duration of symptoms was 8–9 months, with the follow-up period of 4–6 months. The average size of tumors ranged from 0.4 to 1.2 cm. The average removal time was 1.0 to 3.5 hours and the average intraoperative blood loss was 130–300 ml. On the first day after the surgery, one patient developed intradural hemorrhage after removal of the intramedullary hemorrhage.

Conclusion: Surgery of vascular tumors of the spinal cord is a sophisticated and multicomponent task that requires searching for the correct approach to treat the patient, a decision made on the need for embolization of vascular tumor, as well as microsurgical treatment when needed.