Spinal cord anaplastic astrocytoma

Treatment

Microsurgery followed by adjuvant chemoradiation is recommended for the treatment [1].

Outcome

Spinal cord anaplastic astrocytoma is a rare spinal high-grade astrocytoma with aggressive nature, the prognosis remains poor even after comprehensive treatments [2].

Case series

A total of 27 consecutive patients diagnosed as spinal cord AA between January 2008 and May 2015 in Department of Neurosurgery of Beijing Tiantan Hospital were retrospectively reviewed. There were 18 males and 9 females, the mean age was (30.7±13.0) years (ranging from 5 to 52 years). The lesions were located at cervical level in 8 patients, at thoracic level in 9 patients, at cervicothoracic level in 3 patients, and at thoracolumbar level in 7 patients, the average number of vertebral was 3.3±1.3.The median time from onset of symptom to surgery was 4 months, ranging from 3 days to 48 months. The clinical presentations were weakness (23 cases), paresthesia (22 cases), pain (20 cases), sphincter disorder (15 cases) and paralysis (7 cases). The preoperative modified McCormick scale was as follows: grade Ⅱ for 6 cases, grade Ⅲ for 7 cases, grade Ⅳ for 7 cases, grade Ⅴ for 7 cases. The tumors were surgically removed via posterior median approach with the monitoring of the somatosensory-evoked potentials to minimize the neurological injury. All of the patients were recommonded to receive adjuvant chemotherapy and radiotherapy postoperatively after pothological verified and followed up by clinic interview or telephone postoperatively. Log-rank test was used to calculate the survival rate. Results: Gross total resection and subtotal resection were achieved in 18 patients and partial resection in 9. Twenty patients received adjuvant chemotherapy and (or) radiotherapy, 7 patients did not received chemoradiation postoperatively. Nineteen patients died and 8 were alive at the last follow-up. The median survival time was 23 months with 1 and 2-year survival rates of 85.2% and 50.0%.There was no statistical significance between subtotal resection group and partial resection group($\chi(2)=0.089$, $P=0.880$), the survival rates of patients in chemotherapy group and radiotherapy group were increased significantly($\chi(2)=6.687$, $P=0.001$; $\chi(2)=14.887$, $P=0.002$). Conclusions: Spinal cord AA is a rare spinal high-grade astrocytoma with aggressive nature, the prognosis remains poor even after comprehensive treatments. Microsurgery followed by adjuvant chemoradiation is recommended for the treatment [3].

Case reports

A 17-year-old female complained of lower extremity pain that progressed to low back pain accompanied by paraparesis. Magnetic resonance imaging revealed a mass in the conus medullaris of the spinal cord at the thoracic spine 11-12 level. The patient underwent resection of the mass. The

pathological diagnosis was anaplastic astrocytoma based on the densely proliferating astrocytic tumor cells without necrosis or microvascular proliferation. The patient received chemoradiotherapy with oral temozolomide and a total of 54 Gy of local irradiation, followed by 24 courses of temozolomide as maintenance chemotherapy. The patient survived for 8 years without tumor recurrence following the initial treatment. Genetic analysis of the tumor revealed a BRAF V600E mutation that has not yet been reported in spinal cord high-grade gliomas (HGGs). In recent years, the molecular therapy targeting the BRAF V600E mutation has been applied in clinical practice for several cancer types. Although the frequency in spinal cord HGGs is uncertain, it is necessary to investigate BRAF V600E mutation as a potential therapeutic target in the future [4].

[1] [2] [3]
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[4]
Takamiya S, Hatanaka KC, Ishi Y, Seki T, Yamaguchi S. Spinal cord anaplastic astrocytoma with BRAF V600E mutation: A case report and review of literature. Neuropathology. 2020 Jan 27. doi: 10.1111/neup.12636. [Epub ahead of print] PubMed PMID: 31986557.