Anaplastic meningioma case series

Between 1998 and 2016, 806 adult patients with histologically confirmed malignant meningioma from West China Hospital, and The Fifth Central Hospital of Tianjin were included. The mean age at diagnosis was 61.0 years (median 61.0 years), with a range of 19-104 years. Univariate analysis revealed that male gender, distant metastasis, and age ≥ 80 years as significant adverse factors for OS and CSS. These factors remained significant in the multivariate analysis. The nomogram demonstrated satisfactory discrimination, with a C-index value of 0.663 for OS and 0.654 for CSS, respectively. For both OS and CSS, the DCA curves indicated that the nomogram model performed better than other clinical variables.

Older age, male gender, distant metastasis, and radiotherapy were significantly related to poor prognosis; and the extent of resection did not affect survival [1)].

2018

56 patients from the Department of Neurosurgery, Beijing Tiantan Hospital, Beijing, China underwent surgeries between December 2008 and January 2016. Postoperative pathology reports confirmed the diagnosis of AM. Prognostic factors and the management were analysed in this study. AM was then divided into two groups. One group was primary AM, the other group was secondary AM.

Of all the 56 AM patients, 31 were male and 25 were female (male to female ratio of 1.24:1). The 1-, 3-, and 5-year progression-free survival (PFS) rates were 78.6%, 41.1% and 29.7%, respectively, and the corresponding overall survival (OS) rates were 82.1%, 50.1% and 45.0%, respectively. Homogeneous contrast might be a potential better prognostic factor for PFS (HR = 1.824, P = 0.083). Treatment with postoperative radiotherapy (PRT) was significantly associated with longer PFS (HR = 0.390, P = 0.007) and OS (HR = 0.376, P = 0.008) according to univariate analysis. Gross-total resection (GTR) was a favourable factor for PFS (HR = 2.059, P = 0.035) and OS (HR = 2.802, P = 0.004).

Achieving GTR is a favourable treatment strategy for patients with AM in this study and patients receiving postoperative radiotherapy (PRT) after resection is essential [2)].

2017

A study aimed at examining associations between patient and tumor-related factors and tumor-related death in patients with Atypical meningioma and anaplastic meningiomas (AAM) .

Garzon-Muvdi et al., conducted a population-based cohort study utilizing prospectively collected data from the Surveillance, Epidemiology, and End Results (SEER) database. Patients with diagnosis of AAM from 1973 to 2012 in the SEER database were included. Patients lacking clinical information were excluded. Multivariate analysis between patient and lesion characteristics, and AAM-related death was performed to adjust for confounding factors. We identified and included 522 patients in our study. Mean age at diagnosis was 60.8 ± 15.7 years. The majority of patients were White(73%), 15.5% Black, and 9.8% Asian. Average tumor size was 48.2 ± 20.3 mm. The tumor was locally confined in 57.1%, whereas it had intracranial extension in 29.3%, and extracranial extension in 8.8% of patients. The vast majority (94.8%) of tumors were supratentorial. Gross total resection (GTR) was documented in

65.5% of patients. Age at diagnosis (p = 0.001), tumor size (p = 0.003), surgery result (GTR vs. subtotal resection, p = 0.027), and radiation therapy (p = 0.2) were found to be significantly different between the comparison groups. In a multivariate proportional competing risk regression analysis age (HR 1.03, CI [1.01,1.04], p < 0.001), infratentorial location (HR 2.81, CI [1.20, 6.56], p = 0.017), tumor size (HR 1.01, CI [1.00,1.02], p = 0.032),and radiation treatment (HR 1.52, CI [1.11, 2.09], p = 0.01) were significantly associated with tumor-related death. The association of age at diagnosis, tumor size, location, and radiotherapy with overall survival in patients with AAM is demonstrated. The results provide a context for individualized treatment plans in patients with AAM. Additional studies focusing on issues such as the use of radiation and chemotherapy will clarify the best modality to achieve disease control [3].

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Zhang GJ, Liu XY, Wang W, You C. Clinical factors and outcomes of malignant meningioma: a population-based study. Neurol Res. 2022 Mar 30:1-9. doi: 10.1080/01616412.2022.2056343. Epub ahead of print. PMID: 35353024.
2)
Zhang GJ, Zhang YS, Zhang GB, Li D, Zhang LW, Wu Z, Zhang JT. Prognostic factors and the management of anaplastic meningioma. Clin Neurol Neurosurg. 2018 Mar 27;170:13-19. doi: 10.1016/j.clineuro.2018.03.028. [Epub ahead of print] PubMed PMID: 29715576.
3)
Garzon-Muvdi T, Yang W, Lim M, Brem H, Huang J. Atypical and anaplastic meningioma: outcomes in a population based study. J Neurooncol. 2017 Jun;133(2):321-330. doi: 10.1007/s11060-017-2436-6. Epub 2017 Apr 20. PubMed PMID: 28429237.