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Gender-specific growth dynamics of neurofibromatosis type-2-related tumors of the central nervous system.

Lawson McLean A, et al. Acta Neurochir (Wien). 2016.
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Abstract

BACKGROUND: To date, few studies have been published about the growth dynamics of tumors associated with neurofibromatosis type-2 (NF2), none of which evaluated gender-specific differences. Our aim was to compare radiographic data of female and male patients with NF2.

METHODS: MR images of 40 patients (20 female, 20 male) from the regional NF2 referral center were included in this analysis. Tumor sizes were determined by semi-automated volumetric measurement. Intracranial tumors were measured on post-contrast T1-weighted MRI datasets and volumes of intramedullary spinal tumors were determined from sagittal T2-weighted MRI datasets.

RESULTS: The median follow-up time was 91 months (range, 16-199 months) per patient. Intracranial tumors: On average, female patients had 13.4 neoplasms, while male patients had 6.75 ($p = 0.042$). The overall median time to tumor progression of ≥20 % was 20 months for females and 18 months for males. Tumors of the cerebellopontine angle (CPA) that had undergone previous surgery had shorter progression-free intervals in females than in males (16 and 24 months, respectively; $p = 0.012$). The median 1-year growth rate was 17.5 ± 44.6 % in females compared to 12.5 ± 44.9 % in males ($p = 0.625$). Intramedullary spinal tumors: On average, females had 2.05 tumors and males had 1.75 tumors ($p = 0.721$). Median time to tumor progression was 21 months in females and 44 months in males ($p = 0.204$). After 2 years, the median growth rate was 24.4 ± 56.8 % in female and 13.5 ± 40.4 % in male patients ($p = 0.813$).

CONCLUSIONS: The radiographic data in this study suggest that female patients are affected by a greater number of tumors than male patients and that post-surgery tumors of the CPA grow faster in females than in males.

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Lawson McLean AC, et al. Clin Neurol Neurosurg. 2016.

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