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# Late effects of medulloblastoma treatment: multidisciplinary approach of survivors

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## Abstract

**Purpose:** Medulloblastoma is one of the brain tumors with increased life expectancy due to improvements in treatment approaches. Besides the promising results, various undesirable effects can be encountered. This study's aim is to review long-term follow-up outcomes of our cases with medulloblastoma.

**Methods:** Age at diagnosis, histological type of medulloblastoma, resection extension, chemotherapy and radiotherapy schemes, follow-up duration, and endocrinological, neuropsychiatric, cardiological, auditory, and visual examination results were evaluated in 20 patients diagnosed between 2007 and 2018 and followed 5 years and more.

**Results:** Twenty of 53 patients were included to the study. Eleven (55%) were male. Mean age at diagnosis was 6.95 years; mean age at the time of the study was 14 years. Mean follow-up time was 8.95 years. In terms of surgery, 14 (70%) were gross total, 1 (5%) was near total, and 2 (10%) were subtotal resection. In histopathological examination, 14 (70%) were classical medulloblastoma, 4 (20%) were desmoplastic medulloblastoma, and 1 (5%) was anaplastic medulloblastoma. With regard to endocrinological evaluation, 15 (75%) patients had hypothyroidism, 5 (25%) had growth hormone deficiency, 7 (35%) had clinical growth hormone deficiency, and 5 (25%) had sex hormone disorders. In neuropsychiatric examination, 11 (55%) patients had neurological sequelae, 18 (90%) patients had psychiatric issues, and 14 (70%) patients had two or more neuropsychiatric problems simultaneously. One (5%) patient had mitral valve insufficiency. Twelve patients (60%) had hearing loss. According to visual examination, 6 (30%) patients had refraction problem, 4 (20%) had cataract, and 1 (5%) had dry eye.

**Conclusion:** Careful monitoring of long-term side effects is important for improving the quality of life of medulloblastoma patients. Besides endocrinological and other somatic sequelae of the disease and treatment, increased neuropsychiatric problems showed us that only cure is not the issue while treating childhood medulloblastoma.

**Keywords:** Attention deficit disorder; Hearing loss; Hypothyroidism; Medulloblastoma; Mental retardation.

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