

High-grade **astrocytoma** with piloid features (HGAP) is a recently described brain tumor entity defined by a specific DNA methylation profile. HGAP has been proposed to be integrated in the upcoming World Health Organization classification of central nervous system tumors expected in 2021. In this series, we present the first single-center experience with this new entity.

Methods: During 2017 and 2020, six HGAP were identified. Clinical course, surgical procedure, histopathology, genome-wide DNA methylation analysis, imaging, and adjuvant therapy were collected.

Results: Tumors were localized in the brain stem (n = 1), cerebellar peduncle (n = 1), diencephalon (n = 1), mesencephalon (n = 1), cerebrum (n = 1) and the thoracic spinal cord (n = 2). The lesions typically presented as T1w hypo- to isointense and T2w hyperintense with inhomogeneous contrast enhancement on MRI. All patients underwent initial surgical intervention. Three patients received adjuvant radiochemotherapy, and one patient adjuvant radiotherapy alone. Four patients died of disease, with an overall survival of 1.8, 9.1, 14.8 and 18.1 months. One patient was alive at the time of last follow-up, 14.6 months after surgery, and one patient was lost to follow-up. Apart from one tumor, the lesions did not present with high grade histology, however patients showed poor clinical outcomes.

Conclusions: Here, we provide detailed clinical, neuroradiological, histological, and molecular pathological information which might aid in clinical decision making until larger case series are published. With the exception of one case, the tumors did not present with high-grade histology but patients still showed short intervals between diagnosis and tumor progression or death even after extensive multimodal therapy ¹⁾

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Bender K, Perez E, Chirica M, Onken J, Kahn J, Brenner W, Ehret F, Euskirchen P, Koch A, Capper D, Kaul D. High-grade astrocytoma with piloid features (HGAP): the Charité experience with a new central nervous system tumor entity. J Neurooncol. 2021 May;153(1):109-120. doi: 10.1007/s11060-021-03749-z. Epub 2021 Apr 27. PMID: 33905054; PMCID: PMC8131327.

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