NOWOTWORY Journal of Oncology

DOI: 10.5603/njo.104456

ISSN: 0029–540X, e-ISSN: 2300–2115
www.nowotwory.edu.pl

VIA MEDICA

Pictures in Oncology

Incidental diagnosis of low-grade glioma

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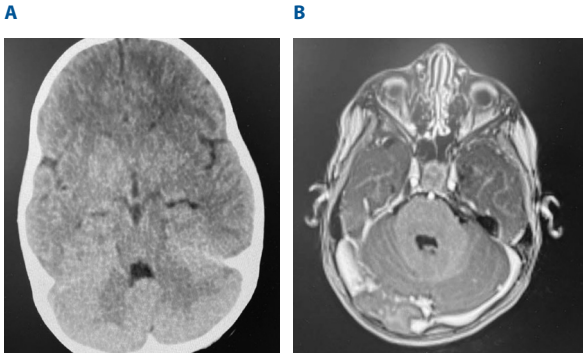

Figure 1. A. Computer tomography scan of the head; **B**. Magnetic resonance scan of the head

Pilocytic astrocytoma (PA) is the most common benign brain tumor in children, with the highest incidence occurring between the ages of 3 and 7 years [1, 2]. The standard treatment is surgical resection, which provides a 95% cure rate in cases of complete tumor removal [1].

A 2-year-8-month-old girl, previously healthy, was admitted to the hospital due to an injury. Unexpectedly, a head computer tomography (CT) scan revealed a tumor measuring 24 × 26 × 24 mm in the pineal region, predominantly hypodense (~ 27 jH) with areas of peripheral hyperdensity (Fig. 1). Magnetic resonance imaging (MRI) confirmed the presence of a tumor (22 × 22 × 22 mm) with restricted diffusion and contrast enhancement (Fig. 2).

The girl underwent a suboccipital craniotomy, during which time the tumor was partially removed. Histopathological analysis revealed markers including GFAP (+), S-100 (+), p53 (–), IDH-1 (–), synaptophysin (–/+), and Ki-67 ~ 1%, confirming the diagnosis of grade 1 pilocytic astrocytoma (G1). Genetic testing excluded mutations in the *BRAF* gene.

Follow-up MRIs over the next two years showed gradual growth of the residual tumor, leading to a second surgical intervention. However, complications during the surgery, including central nervous system (CNS) bleeding, prevented complete resection. Subsequent histopathological examination again confirmed pilocytic astrocytoma G1. Due to the incomplete resection, chemotherapy was initiated following the World Health Organization (WHO) low-grade glioma (LGG) IV protocol, using carboplatin and vincristine.

Currently, the patient has completed intensive chemotherapy and is undergoing maintenance treatment, with the most recent MRI showing no tumor progression.

Although PA is classified as a benign tumor, it can result in significant complications, as demonstrated in this case. Gradual regrowth of the residual tumor after the initial surgery necessitated further intervention and chemotherapy. This case highlights the importance of long-term monitoring and readiness to adapt treatment strategies in the face of complications.

References

1. Roka K, Kersbergen KJ, Schouten-van Meeteren AYN, et al. Towards a risk-based follow-up surveillance imaging schedule for children and adolescents with low-grade glioma. Curr Oncol. 2024; 31(11): 7330–7351, doi: 10.3390/curroncol31110541, indexed in Pubmed: 39590171.
2. Pizzimenti C, Fiorentino V, Germanò A, et al. Pilocytic astrocytoma: The paradigmatic entity in lowgrade gliomas (Review). Oncol Lett. 2024; 27(4): 146, doi: 10.3892/ol.2024.14279, indexed in Pubmed: 38385109.

How to cite:

Różycka KM, Kuczyńska B, Mitura-Lesiuk M, Sławińska D. ***Incidental diagnosis of low-grade glioma.*** *NOWOTWORY J Oncol: online first.*