



## Reversible subacute hair loss induced by levetiracetam

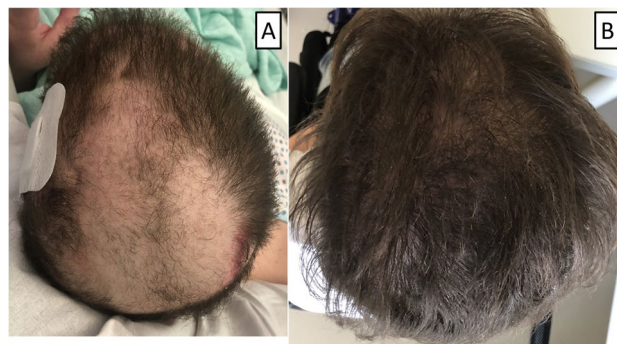
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Dear Editor,

A 25-year-old female was referred to the neurosurgery unit for subarachnoid hemorrhage due to the rupture of a communicating aneurysm. After embolization of the vascular malformation and 6 weeks in the Intensive Care Unit, the patient clinically improved. Magnetic resonance angiography showed exclusion of the aneurysm and the patient, due to symptomatic epilepsy, was discharged home on 1000 mg/day. Four days later, the patient presented with acute deep coma. CT scan showed recurrent subarachnoid hemorrhage due to partial aneurysm rehabilitation. The aneurysm was re-embolized and a decompressive craniectomy was performed. During this surgical procedure, a 5 cm × 5 cm area of alopecia without erythema, edema, or scale was collaterally appreciable on the cranial vault. Four weeks after the rebleeding, her clinical condition improved and bone repositioning was performed, but the area of alopecia had enlarged a little more. At 9 weeks, the area of alopecia extended 15 cm × 12 cm (Fig. 1A). In the absence of a hereditary condition, immune system abnormality or another alopecia-related disease or procedure, this unusual hair loss was hypothesized to be related to the antiepileptic treatment, which had been continued during the hospital stay. Levetiracetam was discontinued and phenobarbital started at 100 mg/day. The progression of

alopecia stopped immediately and the patient's hair has mostly grown back 3 months later, without any supportive therapy (Fig. 1B). Levetiracetam is an antiepileptic drug used to treat partial, myoclonic, and tonic-clonic seizures. Severe life-threatening skin reactions as toxic epidermal necrolysis and Stevens-Johnson syndrome have been reported with levetiracetam. Acute alopecia is a rare condition in patients taking levetiracetam [1] and may be underestimated. Alopecia causes relevant esthetic damage, especially in young patients, and every effort must be made to devise a solution.



**Fig. 1** **A** The patient shows a very large hair loss at 9 weeks. **B** The patient's hair has mostly grown back 3 months after levetiracetam discontinuation

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**Author contribution** All authors contributed to the study conception and design. Material preparation, data collection, and analysis were performed by Paolo Missori and Antonio Currà. The first draft of the manuscript was written by Paolo Missori and Antonio Currà, and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

**Data Availability** The data that support the findings of this study are available from the authors upon reasonable request.

## Declarations

**Conflict of interest** The authors declare no competing interests.

**Ethical approval** Written and signed informed consent from patient for publishing the case report has been obtained.

**Consent to participate** Written informed consent was obtained from the patient.

## References

1. Zou X, Hong Z, Zhou D (2014) Hair loss with levetiracetam in five patients with epilepsy. *Seizure* 23:158–160. <https://doi.org/10.1016/j.seizure.2013.11.007>

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