

**Fortuitous Discovery of a Cerebellar Hemispheric Agenesis: A Case Report**

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DOI: [10.36347/sasjm.2020.v06i03.007](https://doi.org/10.36347/sasjm.2020.v06i03.007)

| Received: 27.02.2020 | Accepted: 05.03.2020 | Published: 24.03.2020

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**Abstract****Case Report**

Partial hypoplasia of the cerebellum is an extremely rare malformation, which can be responsible for neurological disorders as it can be asymptomatic. Its physiopathology remains unclear and its diagnosis can be made by brain imaging as CT, MRI and transfontanellar ultrasound. We report a case of an asymptomatic child with hypoplasia of the cerebellar hemisphere discovered on a brain CT performed for a benign head trauma.

**Keywords:** Cerebellar hemispheric agenesis, Partial hypoplasia of the cerebellum, Posterior fossa malformation, Brain CT.

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**INTRODUCTION**

Unilateral hypoplasia of the cerebellar hemispheres is an extremely rare malformation, which can be responsible for neurological disorders as it can be asymptomatic and revealed fortuitously by brain imaging performed for another reason.

We report a case of an asymptomatic child with hypoplasia of the cerebellar hemisphere discovered on a brain CT performed for a benign head trauma secondary to a car accident.

**OBSERVATION**

This is a case of a 7-year-old child, with no particular pathological history, victim of an accident on the public highway responsible of a head trauma, admitted in our department for a brain CT. This examination did not show any traumatic injury, but it did reveal an asymmetry of the posterior fossa: the left side was smaller than the right with hypoplasia of the left cerebellar hemisphere and enlargement of the cisterna magna (Figure-1). Based on these imaging results, a diagnosis of unilateral cerebellar hypoplasia was made. Following this discovery, the patient underwent a complete neurological examination which was revealed to be without abnormalities.



**Fig-1:** Images of the brain CT scan, axial (left), sagittal (middle) and coronal slices (right) showing a left hypoplastic cerebellar hemisphere and enlargement of the cisterna magna (orange arrow)

## DISCUSSION

Focal cerebellar hypoplasia can be subdivided into isolated vermal hypoplasia and hypoplasia of a cerebellar hemisphere [2, 3] to explain the pathophysiology of these anomalies, some authors have mentioned an ischemic origin (perinatal asphyxias, foetal suffering, etc.), this explains the frequency of hypoplasia of the vermis which is very sensitive to hemodynamic variations during foetal life [4]. Genetic mutations with somatic mosaicism may also have a role in this pathology [5].

As in our case, unilateral cerebellar hypoplasia may be an incidental finding in a patient without any prior signs of neuromuscular or metabolic disease and without a history of trauma or anoxia. However, unilateral cerebellar hypoplasia can be the cause of seizures, persistent headache, psychomotor disorders with or without symptoms of cerebellar disease [6].

Transfontanellar ultrasound (in case of toddlers) and sectional imaging shows asymmetry of the posterior fossa with underlying hypoplasia of the unilateral cerebellar hemisphere. When performed, brain MRI with angiography sequences can highlight vascular abnormalities in the cerebellar and / or vertebral arteries [6].

## CONCLUSION

Cases of partial cerebellar agenesis are rare and their clinical manifestations are subject to

discussion. Brain Imaging techniques make the diagnosis which is in most case fortuitous.

**Acknowledgements:** None

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