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Letter to the Editor

Vitamin-K Deficiency May Not be the Only Cause of Intracerebral Hemorrhage, and Hemorrhage Not the Only Cause of Hydrocephalus

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Letter to the Editor

We read with interest the article by Klein *et al.* regarding a seven-week-old female infant with hydrocephalus and multilocular intracerebral hemorrhages with intraventricular extension, attributed to vitamin-K deficiency ^[1]. The patient received vitamin-K, and a ventriculoperitoneal shunt was implanted ^[1]. Long-term follow-up was not reported ^[1].

A first point of criticism is that the causes of the intracerebral hemorrhages were not sufficiently elucidated ^[1]. There is no mention of whether the patient suffered birth trauma due to mechanical stress during delivery. Were forceps used, or were there other complications during birth? Furthermore, magnetic resonance angiography (MRA) or computed tomography angiography (CTA) could have provided insight into whether fragile vessels or vascular malformations (e.g., arteriovenous malformations) were the underlying cause of the hemorrhages. Likewise, it is not stated whether the patient experienced hypoxia or asphyxia during labor, delivery, or the postpartum period - events that could have led to damage of the blood vessels. Even though vitamin-K deficiency was assumed, it is important to rule out hereditary coagulation disorders. Was there any evidence of coagulopathies in the family history? It would also be necessary to clarify whether a congenital infection was present that might have impaired blood flow and compromised vascular integrity.

A second point is that, while the hydrocephalus was attributed to the intracerebral hemorrhage, alternative causes for the hydrocephalus were not considered. Moreover, it remains unclear whether the patient had communicating (non-obstructive) or non-communicating (obstructive) hydrocephalus. Knowing the type of hydrocephalus is crucial, as treatment depends on its classification. Information regarding whether or not the fourth ventricle was dilated would also have been of vital importance. In addition to intraventricular hemorrhages, potential causes of congenital hydrocephalus include hereditary aqueductal stenosis, neural tube defects (such as spina bifida), cerebral malformations (such as Chiari malformation or Dandy-Walker syndrome), intrauterine infections (such as toxoplasmosis, cytomegalovirus, rubella, or syphilis), and various genetic disorders. A third point is that serum vitamin-K levels were not determined ^[1]. To objectively confirm vitamin-K deficiency, demonstrating reduced vitamin-K levels would have been essential.

Unless alternative causes for intracerebral hemorrhage and hydrocephalus have been considered and appropriately ruled out, these conditions should not simply be attributed to vitamin-K deficiency.

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References

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