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Ocular Manifestations Of Hemorrhagic Syndrome Of The Newborn

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Summary:
Babies have very small vitamin K reserves at birth. They are at risk of continuous bleeding if they do not have enough vitamin K to generate hemostasis. Internal or external hemorrhages can occur, including in the brain, at any time up to 6 months of age.
Our aim is to remind you of the importance of taking vitamin K in newborns, and the clinical variability of the manifestations of not taking vitamin K.
We report the case of a newborn at 10 days of age who had presented with exophthalmos since birth, and whose reason for consultation was a retro-orbital hematoma.
The child was initially referred to the emergency department for exophthalmos since birth with no other associated signs.
On examination, an axillary exophthalmos was found on the right side, painful on pressing, causing crying, irreducible with impossible spontaneous palpebral closure and local subconjunctival haemorrhage in the contralateral eye. Cerebral and orbital MRI revealed a right retroorbital formation, suggesting a subacute hematoma responsible for grade 3 exophthalmos with two small cerebellar hematomas.
A complete haemostasis work-up was carried out, including coagulation factor assay, which was unremarkable.
The child was admitted to the pediatric ophthalmology ward after neurosurgical and hematological advice, and received vit K at a dose of 2 mg/kg/week for 3 weeks with local care.

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I. Introduction:

- Hemorrhagic disease of the newborn is rare but can be extremely serious due to the occurrence of cerebral, hepatic or adrenal hemorrhage. Its prevention relies on the administration of vitamin K1 from birth. There are no methodologically sound studies to validate a recommendation based on solid scientific criteria (1)(2).

II. Clinical Case:

Observation:

We report the case of a newborn at 1-0 days of age, the youngest of 5 siblings, with no evidence of consanguinity, from a well-monitored pregnancy carried to term, vaginal delivery with no evidence of dystocia or trauma, immunized to date according to the national immunization program, and with no similar cases in the family.
Consulted for exophthalmos since D-1 of life with no other associated signs.

Ophthalmological examination reveals:
Right eye:
- Visual acuity difficult to quantify.
- True exophthalmos (**figure 1**) with impossible spontaneous palpebral closure (**figure 2**).
- Oculomotor reflexes are preserved.
- Anterior and posterior segments are unremarkable.
- Fluorescein test showed dense Superficial Punctate Keratitis.

Figure 1: Image Showing Exophthalmos Of The Right Eye.

Figure 2: Image Showing Impossible Palpebral Closure

Left eye:
- Visual acuity difficult to assess.
- Subconjunctival hemorrhage in the temporal eye (**figure 1**).
- Oculomotor reflexes preserved.
- Anterior and posterior segments are unremarkable.

- Cerebral and orbital MRI revealed a right retroorbital formation suggestive of a subacute hematoma responsible for grade 3 exophthalmos with two small cerebellar hematomas (**Figure 3**).
- A complete haemogram and haemostasis with coagulation factor assay: Factor XIII were performed and were unremarkable:

- Hemoglobin: 19.1 g/dL
- Red blood cells: 5.31M/MM3
- Platelets: 41000 /mm3
- Patient aPTT: 25.5
- Control aPTT: 30.0
- Prothrombin rate: 100%.
- INR: 1.00
- Fibrinogen: 3.31 g/L

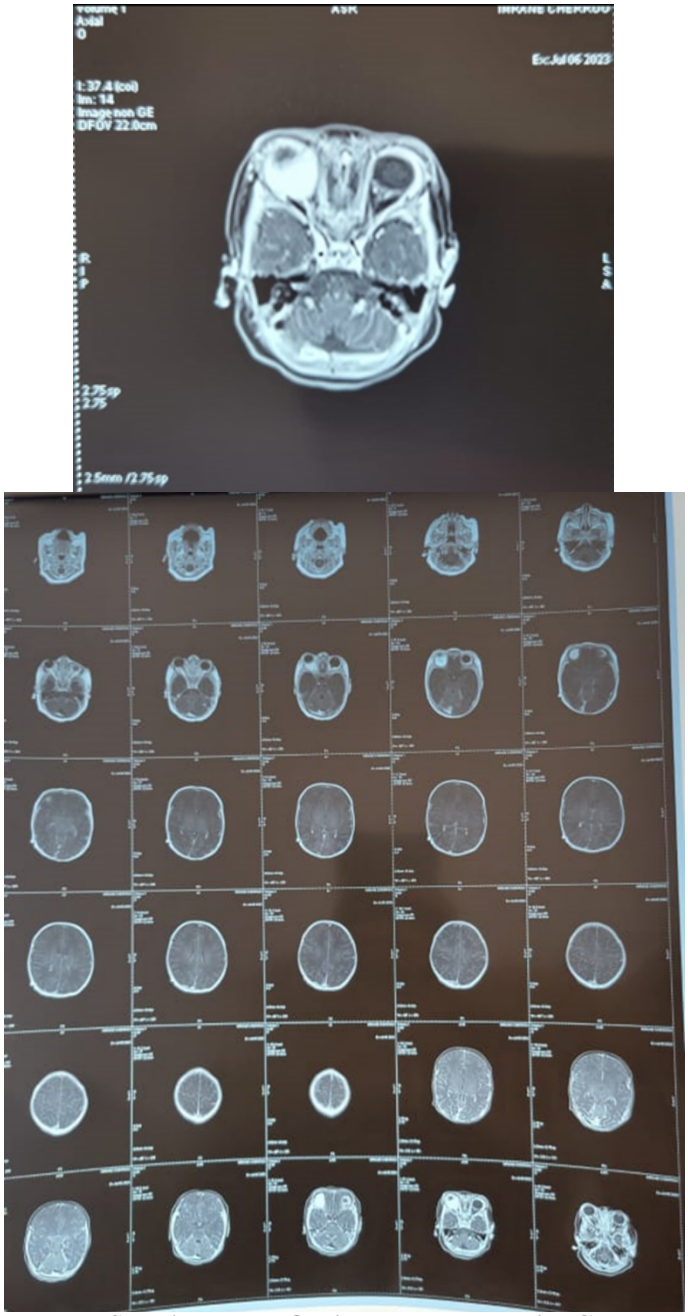

Figure 3: MRI Images Showing Retro-Orbital Hematoma With Cerebellar Hematomas

The patient was admitted to the pediatric ophthalmology ward for management.
The patient received a neurosurgical opinion, which indicated a daily assessment of his neurological condition, and a hematological opinion, which indicated vitamin K at a dose of 2 mg/kg/week for 3 weeks, with a hemostasis workup and coagulation factor assay, which returned normal.
The patient also benefited from twice-daily fundus monitoring.
The exophthalmos and subconjunctival hemorrhage regressed. **(figure4**)

Figure 4: Regression Of Exophthalmos And Subconjunctival Hemorrhage.

III. Discussion

- Hemorrhagic syndrome of the newborn (HSNN) was first identified over a century ago (3).
- It manifests as unexpected bleeding, often in the form of gastrointestinal hemorrhage, ecchymosis and, in many cases, intracranial hemorrhage. SHNN is usually caused by insufficient prenatal vitamin K stores, combined with insufficient vitamin K in breast milk. There are three types of vitamin K deficiency hemorrhage (VKDH): early-onset (within 24 hours of birth), classic (two to seven days of age) and late-onset (two to 12 weeks to six months of age). Early-onset HCVK is often associated with the mother's use of drugs that inhibit vitamin K activity, such as anti-epileptics. Classic HCVK is associated with low dietary vitamin K intake, while late-onset HCVK is associated with chronic malabsorption and low dietary vitamin K intake (4).
- At five days of age, there appears to be no difference between oral and intramuscular administration of vitamin K (5).
- However, between four and six weeks of age, biochemical signs of vitamin K deficiency are observed in up to 19% of infants given 2.0 mg of oral vitamin K at birth, compared with only 5.5% of those given 1.0 mg intramuscularly) (6).
- The benefits of routine vitamin K administration have long been confirmed, but the most effective mode of administration has yet to be fully established (7)

IV. Conclusion:

- Vitamin K1 should be administered as a single intramuscular dose of 0.5 mg (birth weight 1,500 g or less) or 1.0 mg (birth weight over 1,500 g) to all newborns within six hours of birth, after initial stabilization of the baby and a suitable duration of interaction between newborn and mother (or family). (8)

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