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Case Report

Unusual presentation of late vitamin K deficiency bleeding in an infant

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Introduction

Hemorrhage in neonates and infants is a life-threatening emergency. Vitamin K deficiency is a common cause for neonatal bleeding. American Academy of Pediatrics (AAP) recommends routine administration of vitamin K to all neonates to prevent bleeding.¹ We report a case of an infant who was brought with bleeding from site of vaccination. The infant had received prophylactic vitamin K at birth. There were no predisposing illnesses like liver disease and malabsorption. Occurrence of late vitamin K Deficiency Bleeding (VKDB) even after vitamin K dose in a healthy infant and its sole manifestation as bleeding from injection site are rare and hence are reported in this case. He improved on treatment with vitamin K and fresh frozen plasma (FFP).

Case report

A male infant aged 45 days was brought to casualty with hematoma and oozing of blood from DPT vaccination site on the thigh and ecchymotic patch on the face. He was born with a birth weight of 3 kg at term to a 25-year-old second gravida mother by spontaneous vaginal delivery. The mother was not on any medications. The elder sibling aged five years was normal. There was no family history of excessive bleeding. The infant received vitamin K 1 mg intramuscular at birth, which is given routinely to all neonates born in the hospital. He had exaggerated physiological jaundice which was treated with double surface phototherapy and the icterus regressed completely. There was no history of passing clay colored stools, dark urine, prolonged diarrhea, and administration of broad-spectrum antibiotics. The infant was thriving well on breast feeds and had gained 1500 g from birth weight in 45 days. He was perfectly well before the onset of the symptoms. On examination, the baby's vitals were normal except for tachycardia. There was pallor, no icterus, and rash. A large hematoma was noticed at the DPT injection site on the anterolateral aspect of right thigh with oozing of frank blood. There was ecchymotic patch on the right cheek. The infant was otherwise alert and active. There was no evidence of bleeding from any other sites. Systemic examination was essentially normal. Investigations revealed Hb of 9 g/dl, normal TLC, platelet count 1,70,000/cmm, CRP negative. Total serum bilirubin was 1.2 mg/dl (conjugated 0.2 mg/dl), SGOT 35 IU/L, SGPT 40 IU/L. Coagulation profile showed markedly increased prothrombin time 56 s (Control 13 s) with INR 2.2 and activated partial thromboplastin time (aPTT) 68 s (control 29 s). He was given Inj Vitamin K1 intravenously. He was also transfused with FFP @10 ml/kg. The bleeding stopped within

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2 h of administration of vitamin K and FFP. PT and aPTT when repeated after 12 h showed normal values. He was discharged after four days and he is under regular follow-up. There was no recurrence of symptoms.

Discussion

The hemostatic mechanism is different in the neonate from that in the older child and adult. There is decreased activity of several clotting factors in neonates. Newborn babies are prone to develop vitamin K deficiency and hemorrhagic manifestations. Deficiency of vitamin K in neonates is due to many reasons – low transplacental transmission of vitamin K, paucity in the breast milk, lack of bacterial flora in intestine to synthesize vitamin K, and immaturity of liver.² AAP recommends routine administration of vitamin K to all newborn babies. The classical hemorrhagic disease of newborn occurs during second and third day (up to 7th day) of life. The reported incidence of this disease is 0.25–0.5%. In the classic case, the bleeding usually occurs from umbilical stump, nose, GI tract, and following a surgical procedure such as circumcision. The present case is a case of late hemorrhagic disease. It occurs after first week (usually 2–16 weeks) of life. The infant often has predisposing conditions that are known to produce vitamin K deficiency like chronic diarrhea, malabsorption, hepatic dysfunction, and prolonged administration of broad-spectrum antibiotics. A rise in the cases of late VKDB due to omission or refusal of administration of vitamin K at birth also has been reported.³ In a few cases, like in our case, a definite cause may not be seen (idiopathic). In a study done at Netherlands, the incidence of late hemorrhagic disease found to be 3.2 per 100,000 live births and the incidence of idiopathic late VKDB 0.5 per 100,000 live births.⁴ The bleeding most commonly occurs from intracranial vessels, mucous membranes, skin, and GI tract.⁵ More than fifty percent of cases present with intracranial hemorrhage.⁶ Late VKDB may mimic non-accidental injuries which may lead to a wrong diagnosis of child abuse.⁷ The mortality risk is as high as 20%.

The three important laboratory investigations to be done are platelet count, prothrombin time (PT), and aPTT. Hemorrhage in a well neonate with normal platelet count and increased PT and aPTT (as in our case) is suggestive of Vitamin K bleeding.

The treatment of hemorrhagic disease of newborn is administration of 1 mg of vitamin K. In case of active bleeding, FFP is to be given at the dose of 10 ml/kg which may be repeated every 8–12 h as needed. FFP is used to replace the clotting factors immediately.

The aim of presenting this case is to highlight the rare occurrence of late VKDB in a healthy infant who had received vitamin K after birth. A similar case has been reported with intracranial bleed even after administration of parenteral vitamin K.⁸ An epidemiological study from Germany by von Kries indicated a failure rate (occurrence of late VKDB) of 0.25 per 100,000 infants who were given intramuscular vitamin K after birth.⁹ Another rare feature of this case is the presentation as bleeding from injection site which is seen as sole manifestation of late VKDB only in less than 2% of cases as against intracranial bleed which is the commonest manifestation (60–70%).⁶

The present case also highlights the importance of prompt diagnosis of this clinical condition by proper history taking, clinical examination, and relevant investigations. By simple measures, a potentially life-threatening condition could be easily reversed.

Conflicts of interest

The authors have none to declare.

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