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LATE HEMORRHAGIC DISEASE OF NEWBORN- AN UNUSUAL PRESENTATION

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ABSTRACT

Almost in all newborn infants there is a moderate decrease in factors II,VII,IX and X by 48-72 hrs of life. This decrease in coagulation factor levels is usually transient and coagulation factor levels come to normal values by 7-10 days of age. Spontaneous and prolonged bleeding between 2nd and 7th day of life due to deficiency of these clotting factors is called Classical hemorrhagic disease of newborn (HDN). The other 2 forms of HDN are early onset HDN which manifests within 24 hours of life and late onset HDN which presents in between 1 month to 6 months of life [1]. HDN is usually not seen after 6 months of age because vitamin K content of breast milk gradually increases and weaning is also started. We present here the case of 7 ½ month old female child who presented with multiple nodular swellings over forehead and back along with ecchymosis. There was a significant family history in the form of similar complaints in other sibling. Investigations revealed a significantly elevated Prothrombin and partial thromboplastin time. Bleeding time, platelet count and fibrinogen levels were within normal range. In view of baby predominantly being on breast feeding and classical coagulation profile a diagnosis of Late onset HDN was made. This was rather a rare case of late HDN which has presented after 6 months of age.

Key words: Late Hemorrhagic Disease of newborn, Vitamin K dependent coagulation factors

INTRODUCTION

Transient deficiency of vitamin K dependent coagulation factors like II, VII,IX and X sometimes manifesting in newborns and infants as prolonged and spontaneous bleeding is called Hemorrhagic disease of newborn. It is one of the most common causes of bleeding in infancy [2]. There are 3 distinct types of hemorrhagic disease of newborn. Early onset, classical and late HDN. Early onset HDN is usually due to maternal intake of medications like phenytoin, phenobarbitone, warfarin, rifampicin and isoniazid . This form of HDN is uncommon and may present with cephalhematoma, Gasteroingtestinal or umblical bleeding. Classical form of HDN is usually seen in approximatey 2% of the newborn babies and is due to vitamin K deficiency. It may present with gastrointestinal, ENT, umblical or mucosal bleeding. Late onset HDN is usually secondary to some predisposing factors like cholestasis, cystic fibrosis, hepatitis or malabsorption etc. Late onset HDN usually is seen between 1- 6 months of age and may present with intracranial, gastrointestinal,mucosal or subcutaneous bleeding. The prolongation of PT and PTT can be corrected by administration of therapeutic doses of vitamin K. [3]. The rate of late HDN is usually in between 5-7 cass per 1,00,000 births. [4]. While early onset and classical HDN can be prevented by avoiding high risk drugs and prophylactic administration of vitamin K immediately after birth of the baby late onset HDN may require treatment of predisposing factors and high doses of vitamin K.

Case report

A 7 ½ months old female child 3rd by order of birth was brought with complaints of multiple swellings over forehead and back of the child. The swelling were sudden in onset and different swellings appeared on different occasions. There was a significant family history of elder sibling having similar complaints in his infancy.

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A significant past history of similar illness was present for which patient was treated by general practitioner. There was also history of prolonged bleeding after hematological investigations in the past. There was a significant dietary history in the form of exclusive breast feeding and weaning was not yet started even at the age of 7 ½ months. On admission baby was haemodynamically stable and was taking breast feeding properly.

On general examination there was presence of multiple small nodular swellings over forehead and back. There was ecchymosis present over back. There was no active bleeding from any orifice neither there was any focal neurological deficit. Systemic examination was within normal limits. In view of significant past history of prolonged bleeding and history of similar complaints in the sibling a coagulation defect was suspected.

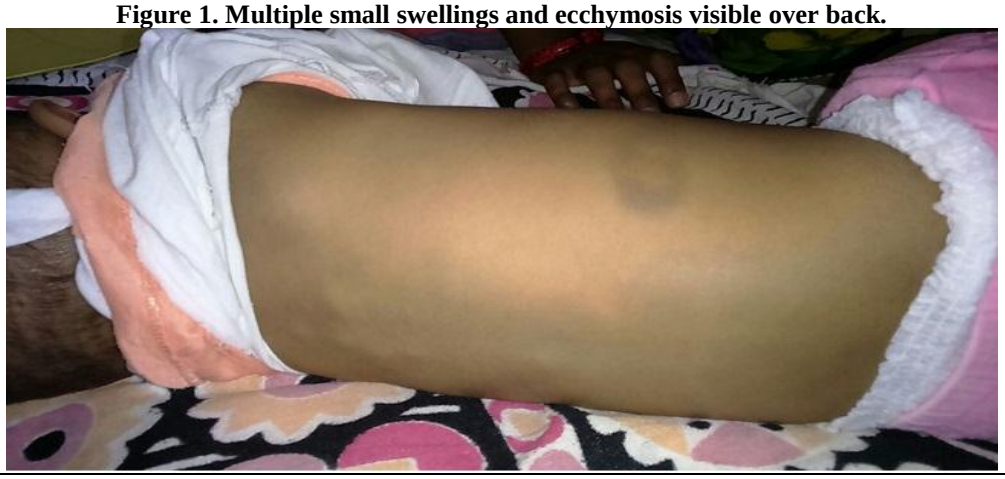
Investigations revealed prolonged Prothombin time and partial thromboplastin time. Platelet count, bleeding time and fibrinogen levels were normal.

As patient had normal fibrinogen levels and platelet count along with significantly raised PT and PTT a diagnosis of late onset HDN was made. After ruling out other causes of late onset HDN like cholestasis, malabsorption and hepatitis Patient was treated with inj vit K 5 mg for 3 days. As patient was stable and was taking breast feeding well she was discharged on day 5 of admission with an advice to continue oral Vit K supplementation and remain in follow up.

Table 1. Investigations showed prolonged PT and PTT with normal fibrinogen and platelet count

Investigation	Patients value	Normal Value
Platelet count	2,72,000	1,50,000- 4,50,000
Fibrinogen	229 mg/dl	200-400 mg/dl
Prothrombin Time	84.70 sec	5.26 sec (control)
Partial Thromboplastin time	165 sec	36 sec (control)

Figure 1. Multiple small swellings and ecchymosis visible over back.



DISCUSSION

Hemorrhagic disease of newborn is one of the common causes of bleeding in early infancy. The cause of HDN is transient deficiency of vitamin K dependent factors II,VII,IX and X [5] . This may present as gastrointestinal or umblical bleeding, hematemesis and malaena in an otherwise well looking infant. Seizures may occur secondary to intracranial bleeds the age of presentation depends upon the cause of vitamin K deficiency. According to age of presentation HDN is divided into 3 types. Early onset HDN occurs within 24 hours and usually is secondary to maternal intake of drugs like phenytoin, phenobarbitone or warfarin. Classical HDN is usually due to transient deficiency of vit K dependent factors. Breast milk is a poor source of vitamin K and hence classical HDN is more common in breast fed babies than bottle fed ones. Late onset Haemorrhagic disease of newborn is usually secondary to cholestasis, malabsorption syndromes, hepatitis or cystic fibrosis. Late HDN may present with haematomas, ecchymoses, Gastrointestinal or sometimes intracranial bleed. Widespread practice of giving prophylactic vitamin K injections has reduced the incidence of HDN in babies who have born in hospitals but the rate of HDN is still higher in home deliveries [6]. These children usually present with acute intracranial hemorrhages. According to some authors intracranial bleeding is presenting complaint in more than 50% of the patients of late HDN [7]. Though according to literature late onset HDN is seen up to 6 months of age, HDN in this case can be explained as there was a history of baby being fed exclusively on breast feeding even at the age of 71/2 months. Irrespective of age at presentation HDN must be suspected in any infant who presents with bleeding and

have prolonged PT and APTT along with normal Fibrinogen levels and platelet count. Prophylactic administration of vitamin K has resulted in decrease in the incidence of HDN [8]. Prevention of HDN with prophylactic intramuscular vitamin K is of primary importance in prevention of serious complications like intracranial hemorrhage. A single dose of intramuscular vitamin K after birth effectively prevents HDN. Though oral vitamin K prophylaxis improves levels of vitamin K dependent coagulation factors but this effect has not been tested in randomized trials for its efficacy in preventing either classic or late HDN [9]

The American Academy of Pediatrics in their policy statements has endorsed the universal supplementation of vitamin K using the intramuscular injection [10]. The earlier fears about prophylactic vitamin K injection causing leukemias and other cancers have been discarded. As the etiology of HDN is usually deficiency of vitamin K dependent coagulation factors, the only treatment effective is supplementation of vitamin K. Other modalities of treatment which may be needed is administration of fresh frozen plasma or prothrombin complex concentrates. Packed cell volume transfusion may be needed if excessive bleeding has already taken place. Neurosurgical interventions may rarely be needed.

CONCLUSION

Though HDN is suspected in all well looking babies presenting with bleeding manifestation up to 6 months of age Pediatrician must consider the possibility of late HDN even after 6 months specially if predisposing factors like exclusive breast feeding, cholestasis, cystic fibrosis or hepatitis is present.

Conflict of interest

None.

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