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Case Report

Plastic baby: A rare presentation

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Abstract Collodion baby is a rare epidermal developmental malformation characterised by parchment like taut membrane. The term Collodion (Greek-glutinous meaning glue, sticky) was coined by Hallopeau and Watelet in 1892. A term male baby delivered by LSCS to primigravida had shiny parchment like membrane that got hard like plastic, cracking at the site of body folds and forming raw red areas. The child was born out of non consanguineous marriage. The vitals at birth were normal. On cutaneous examination, the whole body was covered with thick parchment like membrane, with multiple fissures and erosions on chest, axilla, groin, popliteal and ankle flexures with associated and eclabium. The baby was managed in NICU with adequate humidification and temperature in an incubator and adequate fluid and electrolyte replacement along with topical bland emollients. Collodion baby is a rare disorder of cornification. 75% patients develop AR congenital ichthyosis. Management requires a multidisciplinary approach with a dermatologist, neonatologist, ophthalmologist and ENT specialist. In the present case report it is emphasized that the early survival of these neonates can be improved with basic skin care, nutrition and reassuring parents that the baby can be saved.

Key words
Collodion; Plastic; Epidermal; Developmental.

Introduction

Collodion baby is a rare epidermal developmental malformation characterised by yellow, glossy, parchment like membrane tightly stretched over the skin giving the appearance as if dipped in hot wax.[1] The term Collodion (Greek – glutinous meaning glue, sticky) was coined by Hallopeau and Watelet in 1892. Collodion baby antecedes the true underlying disease entity. The tight plastic sheet like covering that puts neonate to risk of dehydration. Children born as collodion babies have a preponderance to resolve spontaneously by desquamation in 2 weeks, but it may take upto 3 months. Ultimately, these children may develop signs of one of various types of ichthyosis, giving the appearance of "fish scales".[2]

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Case report

A term male baby delivered by LSCS to primigravida had shiny parchment like membrane all over the body **(Figure 1)**. After a day the membrane got hard like plastic, cracking at the site of body folds and forming raw red areas **(Figure 2)**. During pregnancy there was no history of maternal complications. The mother refused history of any drug exposure. Pre and perinatal period was uneventful. Family history was obtained. On pedigree analysis, there was no history of any genetic disease or dermatological disorder. The child was born out of non consanguineous marriage. The baby weighed 2.60 kg (appropriate for gestational age), with head circumference 32 cm and length 52 cm. Vitals and APGAR score was normal.

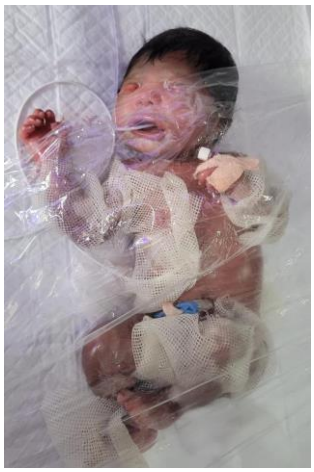

Figure 1 Membrane all over the body.

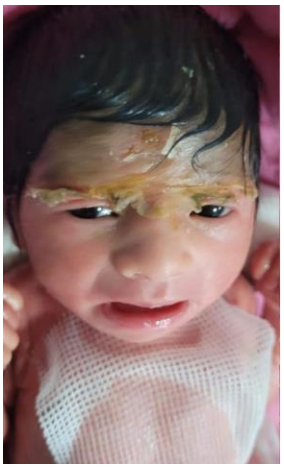

Figure 2

Figure 3

On cutaneous examination, there was generalised erythema and edema with restricted movements. The whole body was covered with thick parchment like membrane, with multiple fissures and erosions on chest, axilla, groin, popliteal and ankle flexures. There was associated ectropion of both eyelids and eclabium of lips with fishmouth appearance **(Figure 3)**. No other associated anomalies were seen. The baby was managed in NICU with adequate humidification and temperature in an incubator and appropriate fluid and electrolyte replacement. On day1 of birth, tube feeding was done. Artificial tear drops were administered to prevent drying of eyes. The newborn was monitored for any sepsis, shock or delayed perfusion.

Discussion

Collodion baby is a rare disorder of cornification. A cornified substance replaces the skin of the neonate leading to a parchment like appearance or a polished appearance. The commonest cause of Collodion baby is TGM1 gene mutation. It is predominantly inherited as Non-Bullous Congenital Ichthyosiform Erythroderma (NBCIE) or Lamellar Ichthyosis (LI), an autosomal recessive ichthyosis. The estimated frequency of CB, an exceedingly uncommon dermatological disorder, is 1 in 50,000 to 100,000 births.[3] A condition where infant entirely recovers is called “self-healing collodion syndrome’.[4]

The diagnosis of collodion baby is made at the time of birth only. They are usually premature born. The tight membrane can lead to many complications like ectropion, eclabium, pseudocontractures leading to restricted movements, deformities of nose and ear due to hypoplastic nasal and ear cartilage, sparse hairs on head and absence of eye brows. These complications further cause feeding difficulty due to impaired sucking, dehydration, oedema and ischaemia of extremities and increased risk of cutaneous and systemic infections.

The collodion membrane sloughs off in 2-4 weeks after birth exposing the underlying skin disorder. 75% patients develop AR congenital ichthyosis.

Collodion baby is a clinical diagnosis. However, the final diagnosis or prognosis of the actual ichthyosis phenotype cannot be predicted by the clinical features. Also, examining histopathologic features of skin biopsy

specimens in the first few weeks are non specific and do not aid in diagnosis of the type of ichthyosis.[5]

Management requires a multidisciplinary approach with a dermatologist, neonatologist, ophthalmologist and ENT specialist with an aim to improve condition of skin by eliminating fish like scales. The use of high humified incubators with regular body temperature monitoring and ample nutrition is mandatory to manage dehydration and electrolyte imbalance due to high insensible losses from the skin. The first line of management includes moisturizers and topical keratolytic agents as they protect skin barrier and facilitate desquamation. Impaired skin barrier can cause increased absorption of topical products, like salicylates or keratolytics leading to intoxication. Alternative topical agents like Sodium chloride, urea, vitamin E acetate, glycerol and petroleum jelly are available. Ectropion is managed with artificial tear drops and ophthalmic lubricants. However, critical cases may require surgical intervention. Retinoids like Isotretinoin have keratolytic effect and prevent hyperkeratosis of skin by facilitating shedding of scales. External auditory canal must be examined and regularly cleaned by an ENT specialist to prevent accumulation of scales and hence prevent hearing loss. In the present case report it is emphasized that the early survival of these neonates can be improved with basic skin care, nutrition and reassuring parents that the baby can be saved.

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Author's contribution

NP: Identification and management of the case, manuscript writing, has given final approval of the version to be published.

PG: Identification of the case, manuscript writing, has given final approval of the version to be published.

SK: Diagnosis and management of the case, critical review, has given final approval of the version to be published.

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