Case Report

Collodion Baby – an uncommon condition

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Abstract

A case of collodion baby having a pathognomic appearance was identified in a newborn female preterm baby. The skin was parchment like, Shiny and thickened with distorted facial feature like ectropion and eclabium with pseudo contracture of digits.

Introduction

Collodion baby is an uncommon condition, are often premature and small for gestational age usually AR. Newborn phenotype; 1:300,000 live births. Two thirds of these infants have non-bullous Ichthyosis form erythroderma. 50% of affected infants have no family history suggestive of Ichthyosis1. 10% of CB has normal underlying skin – a mild presentation known as “Self healing collodion baby”.

Case Report

A 34 weeks preterm girl (Birth weight 1750gm) was born to 22 years old primi by spontaneous vaginal delivery. She was the first live born to second-degree consanguineous parents. Family history uneventful. Antenatal history 1st and 2nd trimester uneventful. On examination notable findings include baby encased in a tight, transparent, shiny membrane with restricted movements, eyelids turned outwards, ectropion +. Lips turned outwards, eclabium +. Fissuring over the axillae and abdomen. Exfoliation of skin over the feet +, oral candidiasis +. Erosion over perineum and groin +. A clinical diagnosis of collodion baby was made based on these findings. Treated with local application of liquid paraffin, candid mouth paint, lacrimal eye ointment, and with artificial teardrops. Karyotypes done were normal. Infant was managed conservatively and started accepting breast feeds by 10th day of
postnatal life. She was discharged on 24\textsuperscript{th} day. They were also counseled regarding prolonged period of observation.

**Discussion**

Baby is born encased in a membrane that resembles a yellow light and shiny film or dried collodion (Sausage skin). These babies are often premature. Collodion membrane undergoes desquamation or peeling, which is usually complete by 2-3 weeks of life. This reveals the underlying skin disorder.

Collodion membrane is composed of greatly thickened stratum corneum that has been saturated with water. As the water content evaporates in the extra-uterine life, large fissures appear in the membrane and the membrane is shed revealing the red skin underneath collodion membrane is due to abnormal desquamation.

Maturation of certain genes like transglutaminase 1 gene usually AR, congenital Ichthyosis.

The two most common diseases:
- Lamellar Ichthyosis.
- Non-bullous congenital erythroderma.

Patients with Lamellar Ichthyosis have epidermal turnover with proliferative hyperkeratosis in contrast to retention hyperkeratosis. This involves mutation in the gene for TGM1. The transglutaminase enzyme is involved in the formation of cornified cell envelope. The formation of the cornified cell envelope is an essential scaffold upon which normal intercellular lipid layer formation in the stratum corneum occurs. Thus mutation in the TGM1 secondarily cause defects in the intercellular lipid layer in the stratum corneum.

The clinical features include baby born encased in a thick, taut membrane like oiled parchment or a shiny lacquer like membrane which cracks with least effort leading to fissures. Generalized involvement with accentuation on lower limbs and flexures. Ectropion and eclabium, hair may be absent. Palmar and plantar keratoderma, flattening of ears and nose.
<table>
<thead>
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<th>Disorder</th>
<th>Inheritance</th>
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<tbody>
<tr>
<td>Harlequin Ichthyosis</td>
<td>AR</td>
<td>Thick armor like scaling with fissuring</td>
<td>ABCA12</td>
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<tr>
<td>Collodion baby</td>
<td>Usually AR</td>
<td>Shiny Collodion membrane</td>
<td>Various</td>
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<tr>
<td>Recessive X-linked Ichthyosis</td>
<td>Recessive X-linked</td>
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<tr>
<td>Lamellar Ichthyosis</td>
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<tr>
<td>Congenital ichthyosiform erythroderma</td>
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<tr>
<td>Gaucher disease²</td>
<td>AR</td>
<td>Collodion membrane, Hepatospleenomegaly</td>
<td>β- Glucocerebrosidase</td>
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**Table 1: Disorders Of Cornification.**

Diagnosis based on the evolution of the cutaneous findings, associated abnormalities and family history³. In the immediate neonatal period skin biopsy may be nonspecific. Histologic evolution may be postponed until after the age of 3-6 months⁴. Complications include temperature instability, defective barrier function, increased insensible water loss predisposing to hypernatremic dehydration⁵ (Buyse et al 1993). Pneumonia secondary to aspiration of squamous material in the amniotic fluid and cutaneous infection from gram-positive organisms and candida albicans.

Treatment consists of aggressive supportive care. Infants must be placed in a highly humidified isolette. Fluid and electrolyte balance must be closely monitored. A high index of suspicion must be maintained for signs of cutaneous or systemic infection. Overzealous administration of antibiotics however may lead to gram-negative infections and subsequent septicemia. Topical skin care should include application of a bland occlusive ointment. Emollient every 6-8 hours until the hyperkeratosis has resolved. Potentially toxic topical agents should be avoided because of the increased risk of percutaneous absorption. Manual debriment is not indicated. The eyes should be protected with a bland lubricating ointment. Aggressive surgical management of ectropion is almost never necessary. Systemic retinoids have not been useful⁶.
With optimal supportive care, the thickened stratum cornium usually resolve in 2-4 weeks, but can persist, especially in infants with Lamellar Ichthyosis.

Several outcomes have been reported including complete healing without sequelae \(^7\), \(^8\) (Frenk and de Techtermann 1992, Shwayder and Ott 1991).

**Conclusion**
Collodion baby is a rare condition, which requires proper supportive care. A prolonged period of observation is necessary to determine the precise diagnosis and prognosis. As soon as a definite diagnosis has been made genetic counseling should be provided.

**References**

![Fig 1: Photograph showing a baby encased in a tight transparent shiny membrane with ectropion and eclabium.](image)