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A Follow UP Observational Study of Collodion Babies from an Indian Tertiary Care Hospital

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Abstract

Background and Aims: Collodion baby is a rare presentation in which child is born encased in a taut, parchment like membrane

Materials and Methods: The study comprised of collodion neonates presenting to department of dermatology of Lady Hardinge Medical College and associated Kalawati Saran Children s Hospital, New Delhi over a period of one year. Relevant history, examination and investigations were recorded. The parents were counseled and reminded telephonically of periodic follow up.

Results: The clinical spectrum of these documented patients is as under:

Case 1: A 1 day old full term girl presented with collodion membrane, generalized erythema and ectropion with fissuring in flexures. Emollients were advised and the child is now a healthy toddler with mild form of non bullous ichthyosiform erythroderma.

Case 2: A 3 day old preterm boy was referred to our hospital with collodion and severe ectropion with neonatal septicemia; the child expired at day 4 of life.

Case 3: A 1 day old preterm boy, born of a consanguineous marriage, was born with collodion membrane, severe ectropion, eclabion and inability to suck .He expired after few hours of life.

Case 4: A 1 day old preterm girl child born with collodion membrane, ectropion and eclabion was referred from a local hospital. She was treated with oral acitretin. The ectropion & eclabion resolved and scaling improved at 4 weeks. The child was lost to follow up.

Case 5: A 1 day old full term male baby was born with collodion membrane and ectropion. Mother gave history of 3 male stillbirths. He was put on nutritional supplements and emollient care with gradual transition into non bullous ichthyosiform erythroderma.

Conclusion: The study series of this rare phenomenon highlights the variable spectrum of collodion baby.

Collodion baby is a rare entity with an incidence of 1 in 300, 00. [1] The term collodion baby refers to a clinical entity used for newborns who are encompassed by a tight, shiny, translucent and parchment paper like skin sheet called as collodion membrane, on the entire body surface which lasts for days to weeks.[2] The shedding of collodion membrane starts within a day or two and is nearly complete by 4 weeks.[3] The prognosis of collodion baby depends solely on the type of icthyosis which develops following the shedding of collodion membrane.[4,5,6] We present a study of collodion babies and the subsequent course of their disease.

Materials and Methods: The observational study comprised of collodion neonates presenting to department of dermatology of Lady Hardinge Medical College and associated Kalawati Saran Children s Hospital, New Delhi over a period of one year. Complete obstetric and postnatal history was recorded including demographic

details, presence of consanguinity, mode of delivery, parity of mother, antenatal complications etc. The neonates were subjected to complete general physical, systemic and dermatological examination including mucosae, scalp, and nails. Relevant investigations including complete blood count, serum electrolytes and sepsis screen (if indicated) were done and appropriate treatment was instituted. Ophthalmological and pediatric referrals were done where required. The parents were counseled and reminded telephonically of periodic follow up.

Results and Discussion

The clinical spectrum of the collodion babies was found to be as under.

The patients were unrelated children, two females and three males, born of non consanguineous marriage except one case. Positive family history of collodion baby was obtained only in one case. Cases 2-4 were premature at birth. All of them had one or the other manifestation resulting from mechanical compression by collodion membrane. One baby developed fatal septicemia. The detailed description is as following:

Case 1 was a term baby girl, first child of a non consanguineous couple, born by normal vaginal delivery who presented with collodion membrane and faint generalized erythematic on day 1 of life. Ectropion, fissuring of the flexural surfaces; thick, adherent, brownish scales on the scalp and large, polygonal, adherent scales on the trunk were observed. The newborn was active, feeding well, afebrile and stable. Systemic examination did not reveal any abnormality. At 3 months of age, near complete resolution of truncal scales, fissures and marked reduction of scales on the scalp was noticed with conservative management.

Case 2 was a preterm, low birth weight male baby, 4th born of the non consanguineous couple delivered by caesarean section. He was referred to our hospital on 3rd day of life with collodion membrane, feeding difficulty and sluggishness. Severe ectropion and eclabion were also noticed. There was maternal history of previous 2 stillbirths and one healthy $2^{1/2}$ year old male child. The child succumbed to neonatal septicemia at day 4 of life.

Case 3 was a 1 day old preterm girl, born of a non consanguineous marriage by normal vaginal delivery, presented with collodion membrane, ectropion and eclabion. Both of the elder male siblings were unaffected. Emollient care, antibiotics and systemic retinoids (acitretin) were advised. Ectropion resolved and collodion membrane was replaced by dry scales by the age of 1 month.

Case 4 was a 1 day old preterm male baby, first born of a consanguineous Muslim couple, delivered by vaginal delivery at home with delayed cry at birth. The newborn presented with collodion membrane, inability to suck and difficulty in breathing. Also, severe ectropion and eclabion was present. The child expired after few hours of life.

Case 5 was a 1 day old term male baby, born of a non consanguineous Muslim marriage by normal vaginal delivery. He presented with collodion membrane and difficulty in sucking. Examination revealed presence of generalized erythema, ectropion, eclabion and deformed ears. Child was afebrile with stable general condition. Systemic examination was normal. Family history of collodion membrane was positive in 2 male stillbirths and one male sibling who died at 2nd day of life while the elder female sibling was unaffected. Sepsis screen, liver and kidney function tests and serum electrolytes were normal. Patient was managed with emollient care, intravenous antibiotics, eye drops & intravenous fluids in consultation with pediatrician. The baby was given breast milk by katori feeds. Marked improvement was seen at 1 month age in the form of resolution of generalized exfoliation,

ectropion and eclabion. Patient had persistence of faint erythema, dystrophic nails and adherent scalp scaling.

Discussion

Collodion baby precede the development of various ichthotic conditions like lamellar ichthyosis, non-bullous ichthyosiform erythroderma and rarely harlequin icthyosis, bullous congenital icthyosiform erythroderma, trichothiodystrophy, ichthyosis vulgaris, X-linked ichthyosis, self- healing collodion baby, neutral lipid storage disease, annular epidermolytic erythema, loricrin keratoderma, Netherton's syndrome, neutral lipid storage disease, Sjögren–Larsson syndrome and Gaucher's disease.[2,7,8]

Mechanical compression due to collodion membrane may lead to ectropion, eclabium or malformed ears as seen in almost all the cases; difficulty in respiration and sucking (case 2&4) predisposing to development of pneumonia and constrictive bands of the extremities resulting in vascular compromise and edema.[9] Defective skin barrier puts collodion babies at higher risk of hypothermia, fluid loss, acute renal failure, permanent brain damage, hypernatraemic dehydration, electrolyte imbalance and sepsis.[10] Collodion babies should be treated in a high humidity chamber, and monitored closely for complications. [2]A high humidity environment will allow slow, gradual sloughing off of the membrane. The membrane will come off on its own and should not be peeled off. Application of mild petroleum-based moisturizers may help the infant feel more comfortable while the membrane is peeling off. [3] The goals should be achieving temperature stability, maintaining fluid and electrolyte balance and avoiding infections.

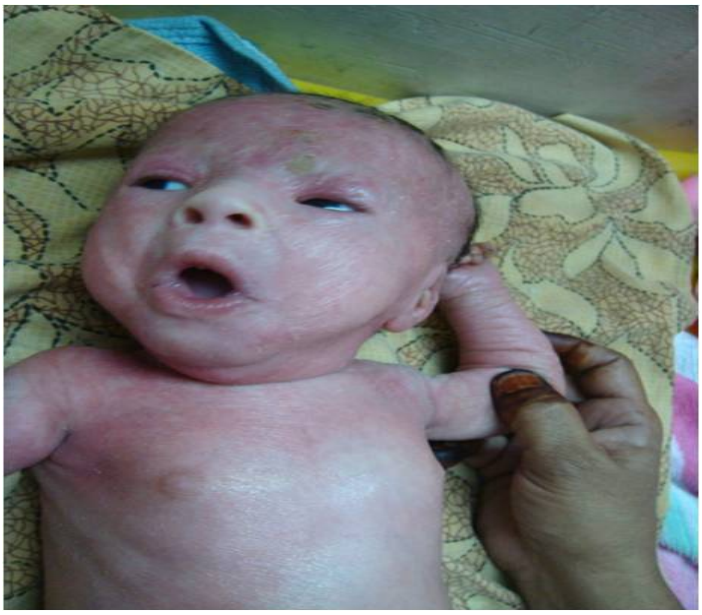

Figure 1. Collodion Baby with generalized erythema

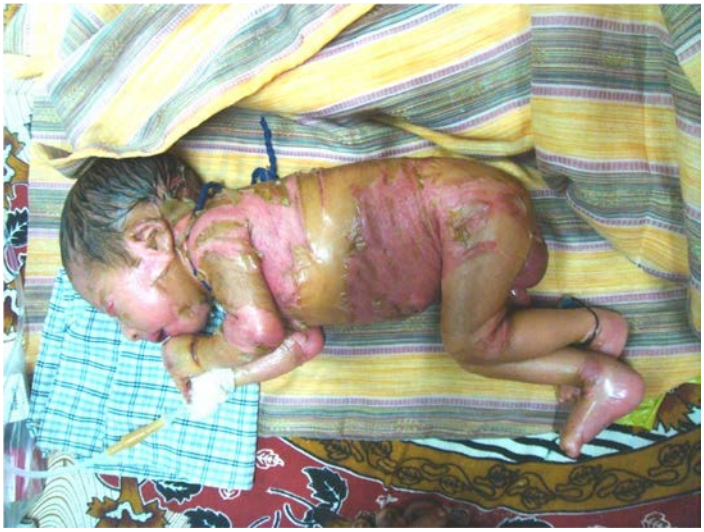

Figure 2. Collodion Membrane peeling off

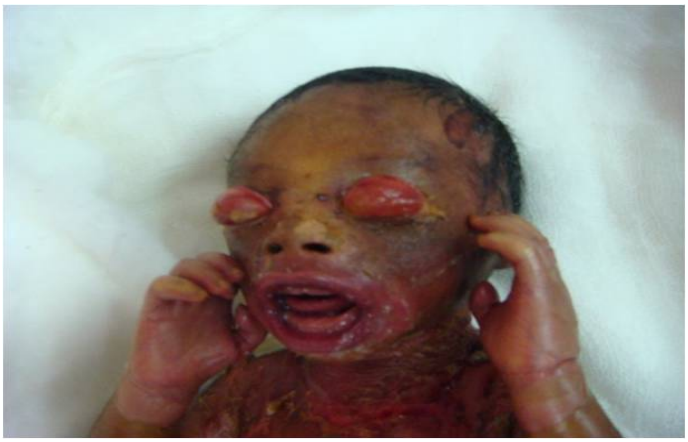

Figure 3. Severe Ectropion and eclabion in collodion baby

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