Case Report

Collodion baby: a case report

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ABSTRACT

Collodion baby is a rare congenital disorder of skin characterized by the presence of extra covering of tough film like membrane which breaks on stretching leading to fissure formation. This condition makes the new-born prone to dehydration, electrolyte imbalance, sepsis and temperature instability leading to frequent complications and high mortality. Here, we present a similar new-born baby born with this condition and presented with severe asphyxia, shock and respiratory failure at birth which was successfully managed in a low resource setting with interdepartmental co-ordination and without the above-mentioned complications.

Keywords: Collodion baby, Ectropion, Ichthyosis

INTRODUCTION

So far ~270 cases of Collodion baby have been reported. The term Collodion was first used by Hallopeau and Watelet in 1892 which is a Greek word meaning of Glutinous (like glue, sticky).¹,² Collodion membrane is basically an epidermal developmental malformation which results in tight, cellophane like extra skin covering over baby which later desquamate gradually over period of 2 weeks in most of cases.³

Most of the reported cases mentioned history of consanguinity but few found non-consanguinity can result in the birth of a Collodion baby. Incidence of disease affecting male and female is equal.⁴ This condition makes the new-born prone to dehydration, electrolyte imbalance, sepsis and temperature instability leading to frequent complications and high mortality.⁴

The management of a Collodion baby is challenging, but with timely skin care, hand hygiene, asepsis maintenance, prevention of insensible water loss by providing incubator care most of the complications are prevented leading to improved outcome. We present a similar case in our hospital which was born with this condition and managed successfully without any complications with good inter-department coordination.

CASE REPORT

A male baby born at 36 weeks of gestation, weighing 2500 gms was noted to have extra skin covering that was tough and shiny (Figure1).

Antenatal and Obstetric history: Mother is 22 years old, Gravida-4 with previous 2 first trimester abortions with no history of Consanguineous marriage and no live issues. Mother had no history of any drug intake, radiation exposure or any significant event during pregnancy. Natal history: Baby was delivered by normal vaginal delivery, but baby didn’t cry immediately after the birth and required bag and mask ventilation for 1
minute. Apgar score was 4 at 1 minute and 6 at 5 minutes. After that baby was shifted to Neonatal Intensive Care Unit (NICU). NICU course: Baby was lethargic along with signs of respiratory distress like chest in-drawing, grunting, respiratory rate 76/min. Baby was started on mechanical ventilator support for initial stabilization. Baby had ectropion (eye lids turned outwards) without any other associated visible anomalies like malformed pinna, flattened nose etc.

Ventilator support was weaned off after 12 hours and baby was put in closed incubator for thermoregulation as well as to control humidity as shown in Figure 1.

Ectropion and eye drops ciprofloxacin and carboxymethylcellulose sodium were started. To meet the caloric requirement orogastric tube feeding with expressed breast milk (EBM) was started after 24 hours of age and gradually increased to 150 ml/kg/day. Laboratory investigations included renal function tests and electrolytes level.

Results were within normal range except slight variation in potassium level as shown in Table 1.

Oxygen therapy was administrated by hood to maintain adequate arterial saturation. Liquid paraffin and glycerin was applied over the body thrice daily after consultation with derma team. On the third day skin desquamation was noted. Peeling away off skin layer at folds and joints resulted in many raw areas. Mupirocin ointment was applied twice daily to prevent infection in these areas. Diaper was kept open to avoid skin peeling at this area.

Table 1: Investigation chart

<table>
<thead>
<tr>
<th>Day of life</th>
<th>Investigation</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 3</td>
<td>Blood urea</td>
<td>46mg/dl</td>
</tr>
<tr>
<td></td>
<td>Serum creatinine</td>
<td>1.2mg/dl</td>
</tr>
<tr>
<td></td>
<td>Na⁺</td>
<td>147meq/l</td>
</tr>
<tr>
<td></td>
<td>K⁺</td>
<td>5.9meq/l</td>
</tr>
<tr>
<td></td>
<td>Cl⁻</td>
<td>108meq/l</td>
</tr>
<tr>
<td>Day 6</td>
<td>Blood urea</td>
<td>42mg/dl</td>
</tr>
<tr>
<td></td>
<td>Serum creatinine</td>
<td>0.9mg/dl</td>
</tr>
<tr>
<td></td>
<td>Na⁺</td>
<td>145meq/l</td>
</tr>
<tr>
<td></td>
<td>K⁺</td>
<td>5.7meq/l</td>
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<tr>
<td></td>
<td>Cl⁻</td>
<td>104meq</td>
</tr>
<tr>
<td>Day 8</td>
<td>Blood urea</td>
<td>40mg/dl</td>
</tr>
<tr>
<td></td>
<td>Serum creatinine</td>
<td>0.7mg/dl</td>
</tr>
<tr>
<td></td>
<td>Na⁺</td>
<td>140meq/l</td>
</tr>
<tr>
<td></td>
<td>K⁺</td>
<td>5.5meq/l</td>
</tr>
<tr>
<td></td>
<td>Cl⁻</td>
<td>102meq</td>
</tr>
</tbody>
</table>

Fluid therapy and Prophylactic antibiotics were continued. Ophthalmic consultation was taken for Ectropion and eye drops ciprofloxacin and carboxymethylcellulose sodium were started. To meet the caloric requirement orogastric tube feeding with expressed breast milk (EBM) was started after 24 hours of age and gradually increased to 150 ml/kg/day. Laboratory investigations included renal function tests and electrolytes level.

Results were within normal range except slight variation in potassium level as shown in Table 1.

With the supportive management and continued skin care, Collodion membrane was limited to small area of body on day 7 of life (Figure 2) leaving the normal skin behind.

Skin desquamation was complete at 2 weeks and the baby was discharged on day 15th of life. Follow-up at 4 weeks of age revealed healthy skin covering and adequate weight gain (Figure 3).

DISCUSSION

Collodion baby is a rare disease with very high morbidity and mortality in the neonatal period. With improvement in intensive neonatal care the mortality rate in contemporary era has come down to 11 %. Mortality...
rates are high in patients with associated erythroderma and common causes include hypothermia, renal failure, dehydration and electrolyte imbalance, constricting bands of extremities which leads to vascular compromise and edema. Collodion membrane can lead to restriction in breathing which can cause respiratory distress and desaturation. Nasal obstruction can cause difficulty in breathing, often necessitating probing. Collodion membrane can result in difficult swallowing, and restriction of joint movements. Neonates with ectropion are at very high risk of developing keratitis but expert and timely ophthalmic management can prevent the complications. The management of the case relies on the timely identification and early institution of intensive care therapy. Intensive care therapy consists of maintaining adequate oxygen saturation, intensive skin care, maintaining body temperature and adequate feeding. Molecular diagnosis was not possible because of the cost involved.

In our case, a diagnosis was made at the time of birth and quality intensive care was instituted immediately. The baby was monitored for electrolyte abnormality and judicious fluids were given to prevent dehydration. We started feeds early which prevented infection related complications. The baby improved gradually with supportive care and was discharged without any complications.

**CONCLUSION**

Collodion baby is a rare serious disorder. It requires early diagnosis and multidisciplinary approach to prevent mortality and long-term complications.

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**Ethical approval:** Not Required

**REFERENCES**
