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First Case Report of a Collodion Baby from Azad Jammu and Kashmir, Pakistan

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ABSTRACT

Collodion baby is a rare genetically determined congenital condition that follows an autosomal recessive pattern of inheritance resulting in a parchment-like tight, shiny skin present over the skin of the newborn. Due to this condition, the body surface of the newborn remains invisible. The current study was aimed to enlighten the case of a collodion baby in District Mirpur, Azad Jammu and Kashmir. In this case, the baby was born with a membrane-like sheet covering the whole body. Resultantly, the baby experienced tachypnea along with the deformation of the body, as well as ectropion and eclabium. Moreover, there was restricted or almost no movement of limbs. Initial treatment included continuous oxygen inhalation, skin care by using moisture agents, and a nasogastric tube implanted for feeding.

Keywords: collodion baby, eclabium, ectropion, tachypnea

1. INTRODUCTION

Collodion baby is a congenital genetic phenotype in which the newborn's body is encased- by a membrane that appears shiny, yellow, and parchment-like, sometimes declared as “dipped in hot wax” by observers [1]. The first such case was confirmed in 1880 by Perez [2]. However, the term “collodion baby” was first coined by Hallopeau and Watelet in 1892. Since then, only 270 such cases have been reported [3]. Currently, there are no statistics available regarding the prevalence of ichthyosis in Pakistani society. However, research on harlequin ichthyosis included 45 patients from all over the world, 19 of them (or 42% of the total) were from Pakistan and its surroundings [4]. It has been reported that the collodion membrane is a temporary membrane that sheds away within two weeks and three months of birth [5].

Clinical facts regarding collodion baby revealed the presence of uniform or irregular ichthyosiform genodermatosis, signified by generalized exfoliative dermatitis along with keratosis pilaris on dry skin, hence giving the skin fish scales-like appearance. This is called ichthyosis dermatosis [6].

Globally the prevalence of collodion babies is as low as one in 300,000 newborns [7, 8]. About 45% of all collodion babies experience neonatal complications and 11% die in the first few weeks after birth [9]. Early treatment involves using moisturizing agents to desquamate the skin, preventing the baby from contracting infections by restricting hydration. Recent data revealed that the cases of collodion babies have been treated successfully with oral antibiotics, hence improving the rate of survival [10].

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2. CASE PRESENTATION

A female infant with a membrane over her entire body was born via lower segment caesarean section in District Headquarter Mirpur Azad Jammu and Kashmir. She was the second child of her parents with first degree of consanguinity. She was born after 8 months of pregnancy. Early examination revealed the presence of parchment like skin covering over the entire body that was peeling off slowly (Figure 1). She was admitted to the hospital for 2 days after birth due to her skin condition and was treated with oral antibiotics. She was able to take and tolerate antibiotics orally and also passed urine and stool normally. Her birth weight was 2.3 kg.



Figure 1. Collodion Baby Encased by Collodion Membrane at Birth

Doctors also reported heart complications in her case. The patient experienced tachypnea and was admitted to NICU, with continuous oxygen inhalation to comfort respiratory distress, while nasogastric tube was implanted for feeding (Figure 2). A complete blood count test (CBC) was also performed and the results were normal. Fortum and

Ampicolx antibiotic injections were used to prevent infections.



Figure 2. Collodion Baby with Nasogastric Tube Passed for Feeding

3. DISCUSSION

The term “ichthyosis” is a Greek word that denotes the appearance of fish-like scales on the entire body [11]. Depending upon the severity of the condition, ichthyosis can be categorized from its most common and mildest form namely “Ichthyosis vulgaris” (which accounts 95% of cases) to its severest form “Harelquin Ichthyosis” [12]. The skin of babies affected with Ichthyosis vulgaris sheds away within 1-2 weeks. As the baby grows, scaly skin becomes more visible and accumulated in specific body areas, such as the inner side of the neck, elbow, armpits and groin [13]. Lamellar ichthyosis is another type of congenital autosomal recessive disorder in which carriers do not show any signs and symptoms. Collodion membrane is made up of tight translucent multiple skin sheets similar to parchment paper, which develops due to defective epidermal development [14]. There is a vaseline like thick shiny layer present on the upper skin surface of the affected baby which causes

limb ischemia followed by respiratory distress, sucking impairment, and defective mechanical compression.

Due to an impaired barrier system, the baby is more susceptible to infections, and imbalance thermal regulation, followed by dehydration and electrolyte imbalance. Candidiasis, cutaneous infection, and frostbite (lowering of blood temperature) are responsible for deaths in infants [15].

The lips and eyelids of the baby, known as ectropion, become protruding due to the tight parchment membrane. The application of lubricants, long baths and use of bath oils are effective for the softening and hydration of the membrane. A humid environment along with inert lubricants causes rapid peeling off of the membrane [16].

Normally, the membrane of collodion baby desquamates within 2-4 weeks after birth. During this period, it is necessary to maintain the hydration of skin by applying lubricants to facilitate the shedding of the membrane. Cautions for eye care and pain control should be implemented for the babies affected with ectropion. To facilitate collodion babies, water dressing along with the application of lubricants and humidified incubators are mandatory. If respiratory discomfort is continuous, the ventilator may be required.

In the case under study, a baby girl was born with an emergency lower segment caesarian section in District Head Quarter Mirpur Azad Jammu and Kashmir. Her parents were first-degree relatives and she was their second baby. The first was a baby boy who was normal. Soon after birth, the baby girl was examined and reported as a collodion baby. There was a yellow, tight, shiny skin stretched over her entire body of baby. The parents claimed that in the second trimester, pre-diagnostic

tests by doctors were conducted. The doctors told them that the baby was not normal and should be aborted. The reason was poor hydration. However, the parents decided to carry on this pregnancy. In the 7th month of pregnancy, doctors told them that hydration improved by 2%. After birth, the collodion baby experienced respiratory difficulties. She was placed on humidified ventilator with continuous oxygen. Unlike other cases, the doctors reported that baby is also having heart complications leading to tachypnea. Fortum, Ampiclox and Capotene injections were used to treat her. She was discharged after 2 weeks of birth, along with a regular massage advice with Vaseline and liquid Paraffin, after every 3 to 4 hours. After 5-6 days, the collodion membrane began to peel off slowly from the different areas of the body. The patient showed gradual peeling off of the skin, especially from the face however, it took 3 months for facial skin to wear away. This patient demonstrated a self-healing collodion case. However, a parchment-like thin skin remained persistent on her head and back and was seen peeling off slowly. Moreover, she showed retarded growth as movement in lower limbs was slow up to 12 months and she was unable to sit for 14 months. Later on, this issue was resolved. Since birth, she has been brought for her regular checkup to the doctors. In the follow-up visit performed recently at the age of 17 months, no serious complication was observed.

3.1. Conclusion

This is the first case report of collodion baby from Azad Jammu and Kashmir hence it improves the knowledge of the community about collodion babies. Moreover, this case report also broadens the spectrum of information regarding

such babies and would be helpful in their treatment and disease management.

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