

Case Study

Omphalitis in a Nigerian neonate; resurgence of a dying disease?

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Abstract

We present a four day old male neonate who presented at the special care baby unit of the University Teaching Hospital, Ado – Ekiti with features of peri-umbilical cellulitis. The factors that predisposed to the development of omphalitis in this neonate whose mother is a university graduate is discussed with a view of providing information on how to prevent future occurrences.

Introduction

Omphalitis is a clinical condition in which there is inflammation of the peri-umbilical tissue [1-3]. It usually presents as a red flare in the peri-umbilical skin and invariably is due to poor or inadequate cord care. Oftentimes there is an associated necrotizing fascitis of the inflamed peri-umbilical area with the disease progression [1,3]. Potentially serious conditions that may complicate omphalitis include septicemia, portal pyaemia and liver abscess [1-3]. Neonatal tetanus may also complicate poor cord care in the newborn [5,6]. A previous study has shown that the outcome is usually fatal [1].

Poor cord care in the newborn has been stated to be a common practice among Nigerian and some of the sub optimal cord care practices include the application of hot fomentation and the application of unhygienic substances such as shear butter and metholatum to the umbilical cord of the newborn[5,6]. Previous studies have shown that factors associated with poor cord care practices include a failure to receive antenatal care, poor maternal education, delivery at home, churches, missions traditional birth attendants[1,5-7].

The mother of the newborn in question, received ante-natal care, delivered in a private hospital and possessed a good formal education. However there are some other strong contending issues that might have resulted in the newborn of this ‘socially advantaged mother’ developing this unexpected disease. It is on the basis of this interesting background that we wish to present and discuss this case with a view to highlight and discuss these other predisposing factors. It is hoped that this discussion will provide a framework of preventing future occurrences.

Case report

53 A 4 day old male neonate presented at the special care baby unit of the University
54 Teaching Hospital Ado-Ekiti with a 2 day history of excessive inconsolable cries, fever
55 and reduced feeding. The baby had been delivered at a private hospital located in Ado –
56 Ekiti at term and the mother of the baby also received ante-natal care in the same
57 hospital. Delivery was vaginal and was uncomplicated. The pregnancy was also not
58 adversely eventful. Care of the newborn was undertaken by the attending nurses and the
59 mother was not involved in order to give her maximum comfort. The baby was
60 subsequently discharged 48 hours after delivery in a satisfactory condition, without
61 specific instructions on how to take care of the skin and the umbilical cord stump.

62 The mother of the newborn relocated to her grandmother house post delivery,
63 because she did not feel proficient enough to take care of the newborn. Another major
64 reason for temporarily relocating to her grandmother's place was because the father of
65 the newborn was not living with the family due to the fact that he was working in a far
66 city. A mistake in the calculation of the expected date for delivery had resulted in the
67 father utilizing the leave before the delivery, subsequently he could not be around the
68 mother and newborn at delivery and postnatally. The mother is a 22 year old student at
69 the University of Ado Ekiti, while father is a 32 year old Engineer.

70 A clear nasal discharge was noticed in the neonates' nostril the next day after the
71 mother and baby were discharged from the private hospital. The grandmother of the just
72 delivered mother took over the management of the baby by fomentation of the whole
73 body surface, most especially the umbilical cord stump. Hot water, metholatum and a
74 white handkerchief were the materials used for the fomentation on a once daily basis. The
75 clinical condition of the child however worsened as the child became more irritable,

76 febrile and developed poor feeding which made their presentation at the hospital a
77 necessitude.

78 Examination of the neonate at presentation revealed an ill looking irritable and
79 febrile child with a temperature of 38.3⁰C. The baby was term and had a weight of 3.5kg.
80 The baby also had mild icterus and an erythematous red flare surrounding the umbilicus.
81 Other significant finding on the systemic examination include a tachypnoea of 82 cycles
82 per minute other respiratory findings were normal. There were no additional abnormal
83 findings in the cardiovascular or central nervous systems. Abdominal findings include a
84 red flare surrounding the umbilical stump as already indicated. A picture of this is shown
85 in figure 1. Furthermore the cord stump looks black and is smelly and the liver was
86 palpably enlarged by 2 cm below the right costal margin. No other abnormalities were
87 discovered in other systems

88 A diagnosis of omphalitis was made and the child was admitted. Full blood count
89 examination revealed a packed cell volume of 44 percent and a total white cell count of
90 7,100/mm³, with a neutrophil and lymphocyte differential count of 48 and 52 percent
91 respectively. The total bilirubin and conjugated bilirubin was 140.2 and 41.3umol/L
92 respectively. The liver function tests, electrolytes, urea, and creatinine were reported
93 normal. The blood culture revealed no growth.

94 The child was placed on intravenous cefuroxime, metronidazole, gentamicin and
95 dexamethasone empirically and the patient made an uneventful recovery with fever and
96 jaundice subsiding under less than 24 hours. The respiratory rate also returned to normal
97 and the patient was discharged after 4 days of admission after the mother had been
98 educated on proper care of the newborn. All attempts to personally discuss with the great

grand mother in order to educate her failed. The parents however promised to pass our message on the proper care of the newborn to her.

Discussion

Omphalitis is an uncommon disease that is due to poor cord care. Cord sepsis has been documented to be an important cause of neonatal morbidity and mortality among Nigerian children in previous studies [8, 9]. Hot fomentation of the umbilical cord stump is believed to produce a direct thermal which may directly destroy the skin and indirectly breach the intact skin surface thereby paving way for bacterial infection by both aerobes and anaerobes. The infection that develops leads to local tissue necrosis with a vasculitis and micro-abscesses which involve adjacent tissues by direct extension also, resulting systemic symptoms were attributable to endotoxemia and exotoxemia[10]. This might eventually lead to necrotizing fascitis which has poor prognostic implications.

Intrauterine factors that have been associated with the development of omphalitis include intrapartum sepsis [11]. Post delivery factors associated with omphalitis include hot fomentation and the application of unsterile substance on and around the cord for cleansing, This kind of practices are usually common among the uneducated mothers or mothers who deliver at home, missions or with traditional birth attendants[1,12,13]. It is expected that mothers who had antenatal care or delivered at government approved hospital will be taught how to take of the newborn skin and other aspects of newborn care

It is however surprising that inspite of the formal education received by this mother and attendance of antenatal care and delivery in a government hospital her child developed omphalitis. Furthermore the child presented did not have any invasive prenatal monitoring. Thus, this brings the issue to focus that there are other factors that may

predispose to omphalitis in infants from developing countries. The important factors that may have passed off unnoticed in this case firstly have to do with cultural practices. The strong cultural practices in Nigeria and some other developing countries enable grandmothers to take care of their newborn grandchildren, irrespective of their ability. Grandmothers are quick to bring up the fact that they brought up the parents of the newborn should the parents of the newborn raise any objections to the way the granny is caring for the newborn. In this case, the grandmother recommended hot fomentation for the newborn. Secondly the health workers providing services at the health facilities attended by the mother failed to teach the mother how to care of the newborn. This act raises pertinent questions on the professionalism of the health workers. These two factors have been described as silent because they can easily be overlooked.

Conclusion

In order to prevent future occurrences it is important that health workers communicate with mothers of newborn on how to take care of the newborn. The health workers in the government approved hospitals are expected to teach mothers of newborn on every aspect of care for the newborn. A previous study has stated that health worker have a role to play in the proper education of parents on umbilical cord and skin care [14, 15]. The government also has a part to play by enforcing that health workers in government approved hospitals are qualified and receive refresher and update courses on care of the newborn. Harmful cultural practices need to be changed by dialogue and providing information to the concerned either through the public media such as the radio and television. In cases where the grandmothers are proving very difficult they may be tactfully invited to the health facility where they may be engaged and educated by health workers. It is believed that this will change their practice and prevent future occurrences.

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217 Figure 1



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