

## Case report:

# Neonatal Umbilical Myiasis - Our experience

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### Abstract

**Background:** Myiasis is an infestation of live vertebrates (humans and/or animals) by larvae of dipterous fly. Although, it usually infects domestic and wild animals but humans may be rarely affected if they are reared in unhygienic condition. Although adult cases have been reported, neonatal myiasis is a rare condition and there are few reports about this subject. Common sites of myiasis are exposed areas of the body such as extremities, scalp, and back. Herein, we report a case of umbilical myiasis, a 13 days old neonate visited to outpatient department with complaint of worms coming out from umbilicus for 2 days. On examination, periumbilical erythema and umbilical discharge was present. The umbilical stump was irrigated with providine iodine, hydrogen peroxide and topical application with turpentine oil was given then worms were coming out from umbilicus. Umbilical myiasis is a very rare presentation indicating poor hygiene and a preventable condition.

**Key words:** Human, maggots, myiasis, neonate, turpentine oil, umbilicus, worm.

**Introduction:** Myiasis is defined as the invasion of live mammalian tissue by the larvae of dipteran flies for feeding on the host organs and body fluids. The fly may also drop its eggs while in flight on the skin, wounds or natural openings of an immobile person<sup>1,2</sup>. Usually it is a disease of animals but a human being can get infested accidentally<sup>3</sup>. In human beings occurs in the following conditions such as low socioeconomic status, poor hygienic condition, mentally retarded child, and diabetes.

The term “myiasis” is derived from the Greek word “myia” meaning fly. The word myiasis was first used by Hope, in 1840 to refer to a parasitic disease caused by certain fly larvae during a particular stage of their life cycle when they feed on dead, necrotic or living animal and human tissues for a certain period of time<sup>4-8</sup>. It is a common parasitic infestation in the tropics and subtropics but it is also seen outside the endemic regions in Europe and North America<sup>1</sup>. Myiasis is classified based on the anatomical site of infestation such as cutaneous myiasis, nasal myiasis, ophthalmic myiasis, and aural myiasis<sup>9</sup>. However, neonatal

myiasis is a very rare clinical state that is almost always found in tropical areas<sup>10</sup>. Neonatal myiasis is briefly mentioned in only two or three pediatric textbooks, and only a few reports have been published in the literature about this condition<sup>11</sup>. Many cases have been reported in adults but very few have been reported in neonates and children. This case is more interesting as five maggots were extruded from the umbilicus of a 13-day neonate who is from a family of low socio-economic status residing at the rural area.

### Case report:

A 13 days old male child, weighing 3.3 kg, born full-term normal vaginal delivery, brought by parents at outpatient clinic with a chief complaint of the worm coming out from umbilicus for 2 days. The parents are resident of rural area belongs to lower socioeconomic group. They were less conscious about maintenance of hygiene. The neonate was delivered at home, the cord was cut and tied with thread, the umbilical cord had fallen off of life on day 9. There was no history of fever, lethargy, poor feeding or any other sign of systemic illness.

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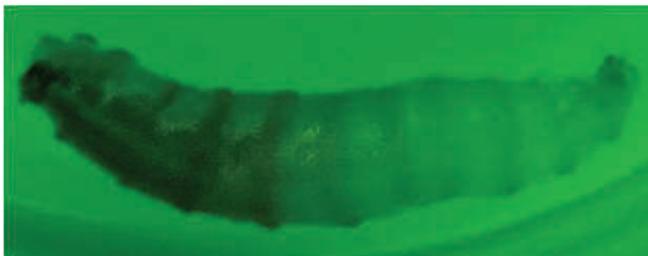
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On physical examination, the baby was slightly irritable but did not appear sick. He weighed 3300 g, temperature was 98.6 F, respiratory rate 43 breaths/min and the pulse rate was 117 per minute. In addition there was periumbilical erythema and umbilical discharge present. The cord was shaded-off already. The baby was noted to have a soft fontanelle, no hepatosplenomegaly, no bone or joint tenderness and normal cardiorespiratory system findings. Cultures were obtained of blood and umbilicus. On investigations sepsis screen was negative. Total leucocyte count: 16.6/uL, Neutrophil: 57%, Lymphocyte: 29%, Eosinophil: 04%, Monocyte: 10%

Intravenous administration of ampicillin (100 mg/kg of body weight a day) and gentamicin sulfate (4 mg/kg a day) was begun. The umbilical stump was irrigated with providine iodine initially, a big maggot was come out from umbilicus about 8 to 10 mm in size. then irrigation with hydrogen per oxide and topical application with turpentine oil and mechanical removal of lerva was done for next 3 days. total 5 maggots were come out first 3 days of admission. The localized erythema, umbilical discharge got resolved and there were no larvae visible in the umbilical stump after 4 th day of admission hydrogen peroxide wash and turpentine oil was continued. Antibiotic was continued up to 6 days vand baby was observed another 48 hours in hospital He accepted breast feed well throughout the hospital stay and was discharged in stable condition on 6th day of hospitalization. The parents were counselled about hygiene measures and the need for follow up



At the time of Admission



Picture of Maggots



At the time of Discharge

### Discussion

Myiasis is derived from the Greek word myia for the fly. This word was proposed by Frederick William Hope for diseases of humans caused by the larva of the dipteran fly<sup>12</sup>. Myiasis occurs in tropic and subtropical areas because moisture and heat aggravates the growth of maggots in poor hygienic conditions<sup>13</sup>. Usually it is a self-limiting disease (maggots leave their host when they are fully mature), it can be associated with severe and sometimes fatal complications if left untreated in sufferers.<sup>7, 16-19</sup>

Myiasis in the neonatal period is rare and there are very few reports of neonatal myiasis, most commonly from the tropics<sup>5, 15-20</sup>. Most patients belong to the poor socioeconomic strata of society mainly those from rural agricultural areas, dwelling in overcrowded premises that are often unsuitable for habitation and in a fly-infested environment<sup>16-20</sup>. It is a pathological condition reported in humans. Humans are accidental or facultative hosts<sup>7, 17</sup>.

It is commonly found in summer months. Causative factors are lack of sanitary measure<sup>7,8,16-20</sup>. Neonatal umbilical myiasis occurs when the house fly lays eggs in the umbilicus. The larva hatches the eggs and feeds dead tissues of the umbilicus. The neonatal umbilicus is a moist and warm area that favours the myiasis<sup>14</sup>. Hypoesthesia or decreased consciousness, paralysis and immobility are the contributing factors that prevent the patient from fending off the fly<sup>7</sup>. Neonatal umbilical myiasis cases are accompanied with complaints of the worm coming out from umbilicus with or without fever. There are various treatment modalities, treatment consists of removal of larvae, cleaning of wound and use of local antiseptics and systemic antibiotic to control any possible associated infection<sup>21</sup>. Local application of irritant substances like turpentine oil, ether, mineral oil, chloroform and phenol etc., causes larvae asphyxia and helps in complete removal<sup>22</sup>. Local irrigation, manipulation and in rare cases surgery may be required. Surgery is used for removal of dead and decayed larvae (not alive) from affected site to prevent secondary infection<sup>4</sup>. Local application of 1% ivermectin has some role in facilitating the larvae<sup>23</sup>. Ivermectin is used against many parasitic infections<sup>6</sup>. It acts by causing the parasite's cell membrane to increase in permeability resulting in paralysis and death<sup>24</sup>. It has been widely used in cases of animal myiasis successfully<sup>25</sup>. In our study, we used local antiseptics, turpentine oil over the umbilicus as a repellent for larva, manually removed the larva and injectable antibiotics were given to avoid sepsis.

There are occasional case reports of umbilical myiasis. In a case report, there were signs of systemic sepsis and umbilical discharge, also revealed growth of *Staphylococcus aureus* in an eight-day-old neonate<sup>26,27</sup>. Unlike in the index case, where antibiotics were given on basis of clinical sepsis and blood culture showed no growth. There is another case report of umbilical myiasis where an eight-day-old neonate, akin to index case, delivered in Government Facility developed similar condition due to poor hygiene<sup>28</sup>.

Myiasis can occur in different sites, aural myiasis has been reported in 24 days old neonate where a maggot has been removed from tympanic membrane, local antiseptics aural toileting finally oral antibiotic baby is improved<sup>29</sup>. There is another case report where a 10-year-old comatose boy that had maggots in his nostrils. The initial presence of

blood/ mucus around the wounds, the hot/humid climate, and the severe co-morbidities facilitate such condition<sup>30</sup>.

### Conclusion

Umbilical myiasis in the human neonate is a reflection of poor hygiene and low socioeconomic status of the baby. In the world, there are few reported cases of umbilical myiasis in human neonates. In our country no reported case till now. The prevention of human myiasis requires adequate personal hygiene, screening to protect against flies, good wound care and the prevention of myiasis in domestic animals. Health-care facilities need to be improved in remote areas of developing countries where institutional deliveries and good perinatal care are still theoretical. Measures should be taken to prevent transmission and breeding of flies. Health education in community and personal hygiene plays a crucial role in prevention of myiasis.

### Conflict of interest:

There is no conflict of interest in writing and composition of this case report.

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