

Case Report

Umbilical myiasis in a newborn: a case report

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ABSTRACT

Myiasis is defined as the infestation of live vertebrates (humans and/or animals) with dipterous larvae. We present a case of rare but not unknown type of myiasis, presented by an 11 days old neonate. The larvae were characterised microscopically. Poor sanitation is probably the most important risk factor for human myiasis. Umbilical myiasis though a rare presentation due to improved health conditions and health education still remains an entity to be looked for in case of newborn belonging to low socio economic status parents and even in orphanages.

Keywords: Myiasis, *Chrysomya megacephala*

INTRODUCTION

Myiasis is defined as the infestation of live vertebrates (humans and/or animals) with dipterous larvae.¹ In mammals (including humans), dipterous larvae can feed on the host's living or dead tissue, liquid body substance, or ingested food and can cause a broad range of infestations, depending on the body location and the relationship of the larvae with the host.²

The order Diptera is a large order of insects that are commonly known as true flies. The presence of a single pair of functional wings with a reduced hind wing, termed halteres, distinguishes true flies from other insects. Flies are ubiquitous and abundant, with approximately 150,000 species in 10,000 genera and 150 families.^{3,4}

Poor hygiene and low socioeconomic status are the most important risk factors for acquiring myiasis. Another important factor is an abundance of exposed preexisting suppurative lesions that attract and stimulate the deposit of eggs by the female insect.^{5,6}

Epidemiological data on human myiasis are scant, and registration of the cases is not usually obligatory. Health care professionals judge myiasis to be a disease of minor importance, leading to an inadequate registration of the case: the larva and dressings are normally discarded without further examination. In some countries, domestic and empirical treatments of the patients are made by family members, reducing the number of the cases seen in medical facilities.⁷

Umbilical cord myiasis is a rare type of wound myiasis in humans, although it is a well-recognized type of myiasis in animals. The natural mummification of fetal tissue during the umbilical separation process is not well described as a risk factor for myiasis in the literature, and similarly, the best means to protect this process are still unclear. Sepsis secondary to omphalitis is a possible complication.⁸

Therapy consists of three general techniques: (i) the application of a toxic substance to the larva and egg, (ii) the production of localized hypoxia to force the emergence of the larva, and (iii) the mechanical or

surgical removal of the maggots.⁷ The goal of treatment is the complete removal of the larva from the skin, with the prevention and control of secondary infection. Secondary infection may result if the larva is ruptured or killed within its cavity and not removed.

CASE REPORT

An 11 day old male neonate was admitted to the paediatric department for excessive crying, swelling and redness in and around the umbilical area. On elaborate history it was found that the baby was born to a multigravida mother via normal vaginal delivery conducted by untrained dai.

The family belonged to low socioeconomic status, with both parents working as daily wage workers. The antenatal, intranatal and post natal periods were uneventful. The baby was mainly looked after by his three elder siblings aged five to nine years of age. The baby was left in a cradle made of cloth tied between two branches of a tree during major part of the day. The swelling and redness was noticed by the mother.

On examination, the baby was found to be pyrexia. There was marked inflammation & purulent discharge was observed emanating from the umbilical stump. While the area was being cleaned with normal saline several maggots were observed which were collected and sent to microbiology lab for analysis.

Seven to eight maggots were received in 70% alcohol in the Microbiology laboratory. The larva was placed between slide and coverslip for analysis. The larva showed presence of microspines, which were distributed randomly throughout the twelve segments of the body surface. The cephalopharyngeal region as well as the first and last segments were severed from their structure and spiracle structure. Cephalopharyngeal skeleton was found to be fully formed. Labial sclerite was robust, fully pigmented, curved, and dentate (Figure 1). While posterior part was wider than the anterior part and sharply pointed, the cross section of the posterior end of the larva revealed a pair of posterior spiracles with three converging openings (Figure 2). The maggots were identified as third instar larval stage of *Chrysomya megacephala*, which is also known as latrine blow fly.



Figure 1: Cephalopharyngeal part of III stage instar larval form of *Chrysomya megacephala*.



Figure 2: Cross section of posterior end of III stage instar larval form of *Chrysomya megacephala*.

DISCUSSION

Human myiasis occurs when fly lays eggs in warm, moist place (here umbilicus). Each female fly can lay around 500 eggs. The larvae that hatch out feed on dead and decaying organic material. They live and develop into third instar, maggots crawl out to a cool, dry place to transform into pupae, from which adult flies emerge.⁷

Identification of maggots is important for the pathogenesis, therefore maggots should be collected and transported in 70% alcohol so that the morphology is maintained and maggots remain soft for ease of cutting sections. Transportation of maggots in formaldehyde leads to shrinkage and hardening thus cutting sections becomes difficult.⁷

Umbilicus though a rare but ideal site for the developing larvae with enough amount of nutrition rich organic matter for the larvae. Due to improvement in living conditions and awareness regarding health, the cases of umbilical myiasis have become a rare entity. Few cases of umbilical myiasis have been reported in the recent past.⁹⁻¹¹ *Chrysomya megacephala* commonly known as latrine blow fly is common in developing countries and with poor hygienic conditions are known to infect wounds.

Poor sanitation is probably the most important risk factor for human myiasis. Low socioeconomic status, especially in poor countries, has an intimate relationship with the lack of basic sanitation and inadequate garbage disposal, leaving organic material exposed, which attracts insects and small animals, creating a cycle of filth. Adequate sanitation can be reached only when government, population, and education programs work together.

Field control of flies is extremely important. All available methods should be used, including aerial sprays, destruction of animal carcasses, elementary sanitary and hygiene practices, and clearing of debris and rubbish near houses. The inactivation of females by the release of large numbers of males previously sterilized by ionizing radiation has been highly successful.⁷

CONCLUSION

Poor sanitation is probably the most important risk factor for human myiasis. Umbilical myiasis though a rare presentation due to improved health conditions and health education still remains an entity to be looked for in case of newborn belonging to low socio economic status parents and even in orphanages.

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