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# Umbilical Cord Myiasis In A Neonate: A Rare Case Of Neonatal Sepsis

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***Abstract:***
*Myiasis, an infestation by dipteran fly larvae, is common in tropical regions, affecting animals and occasionally humans in unhygienic conditions. This article reports a rare case of umbilical cord myiasis in an 8-day-old neonate from a rural area, causing sepsis. The larvae were successfully removed after applying ether to the umbilical stump. This case highlights the importance of hygiene to prevent such rare and avoidable conditions.*
***Keywords:*** *Myiasis, Umbilical Cord, Neonate, Sepsis, Hygiene*

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## I. Introduction

Myiasis is the infestation of healthy or necrotic tissues of the live body with dipteran larvae. Obligate myiasis is caused by larvae of fly species that require a living host as part of their life cycle. This is predominantly an affliction of animals, particularly in tropical and subtropical regions [1]. However, human cases, though rare, do occur, often associated with poor hygiene conditions, especially in rural settings [2]. While myiasis typically affects children under five years old, occurrences in neonates, particularly with umbilical cord involvement leading to sepsis, are exceedingly uncommon and predominantly reported in neo-tropic regions [3].

## II. Case Report:

An 8-day-old female neonate weighing 2.3 kg presented with symptoms of poor feeding, umbilical discharge and peculiarly foul odor. The infant who was exclusively breastfed, had been home delivered in a remote flood-affected rural area of Maharashtra. Physical examination revealed fever (39°C), tachypnea (42/min), tachycardia (166 bpm), mild omphalitis, and peri-umbilical cellulitis. After manipulative removal of pus and closer inspection, several white spindle-shaped mobile larvae were found at the umbilicus. Blood and urine was sent for culture and sensitivity and the patient was started on intravenous fluids and oxacillin. The umbilical stump was irrigated with normal saline, followed by local application of ether. Over 75 maggots ranging between 6-8mm, were removed with forceps over the next 48 hours. Blood Culture identified Staphylococcus aureus growth. Ultrasound of umbilical region revealed no abscesses, and upon successful removal of larvae, the periumbilical cellulitis improved on Day 3 of admission [4-6]. The antibiotics was discontinued on Day 7 and patient was further observed. She was discharged on Day 10 after significant improvement in clinical condition. The parents were counseled about appropriate hygiene measures and need for regular outpatient follow up.

## III. Discussion:

Myiasis, categorized by larval location or host-parasite relationship, typically involves dipteran larvae feeding on host tissue. Umbilical myiasis occurs when fly eggs are laid on dry skin or the umbilicus, which then hatch into larvae and invade the wound. The third stage of larvae are usually ideal for species identification. While more common in animals, myiasis can rarely occur in humans who may be exposed to poor hygienic conditions. Areas of rural India where open air defecation is common, turn out to be fertile breeding grounds for such infections. If not promptly treated, myiasis can serve as a gateway for secondary infections, such as Staphylococcus aureus, leading to sepsis. All cases should involve ultrasonography in the diagnostic workup to rule out abscess and fistulas. Treatment involves larval removal, wound cleaning, and antibiotic therapy [7-9]. Saline irrigation and local application with irritant substances such as ether, turpentine oil, phenol, mineral oil, chloroform etc. kills larvae via asphyxiation. However, these agents must be carefully considered for risk of potential anaphylaxis. Alternatively, ivermectin may be used, which kill larvae by increasing permeability of cell membrane [12]. Larvae can then be removed via forceps. Intravenous Broad spectrum antibiotics should be instituted in case of sepsis, as seen in our case. Surgery may occasionally be needed to remove larvae, in case of deep penetration and subcutaneous spread.

Umbilical Myiasis is a rare occurrence with a few only a few reported cases in literature [10-12]. Most cases occur in setting of poor hygiene and inadequate care. Parental education must emphasize adequate sanitation and appropriate hygiene measures.

**Figure 1. Larvae being removed via forceps after local application of ether [11]**

## IV. Conclusion:

This rare case highlights the importance of hygiene education, especially in neonatal care, to prevent myiasis-associated complications. Prompt identification and management, including larval removal and antibiotic therapy, are crucial for favorable outcomes. Additionally, community-wide efforts to improve sanitation practices are essential in preventing such occurrences, particularly in rural areas where myiasis risk is higher [13].

**Key Learning Points:**

1. Umbilical Myiasis involves cutaneous infection with larvae, which require prompt removal.
2. Local irritants such as ether, turpentine oil, chloroform etc. are effective in killing larvae, but must be carefully considered for risk of anaphylaxis. Ivermectin is an alternative in such cases.
3. Diagnostic workup must include umbilical ultrasound to rule out abscess/fistula and blood-urine cultures.
4. Treatment regimen includes larvae removal, antiseptic wound cleaning and antimicrobial agents.

**Consent and Privacy:**

The parents of the patient provided Informed Consent for publication, agreeing to the use of non-identifiable information only, including images. Therefore, the image featured in this case report was sourced from a literature review [11].

**Contributors:**

Paula Goel reviewed this patient. Ashish Goel and Paula Goel conceptualized this idea and drafted the manuscript.

**Conflict of Interest:**

The authors have no conflicts of interest to declare.

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