## Case Report

DOI: http://dx.doi.org/10.18203/2349-3291.ijcp20190004

# Neonatal umbilical myiasis

Rakesh Kotha<sup>1\*</sup>, Paramesh Pandala<sup>2</sup>, Himabindu Singh<sup>1</sup>, B. Swetha Reddy<sup>2</sup>, S. Tejaswi Reddy<sup>2</sup>, Mahesh Rathod<sup>2</sup>, E. P. Rhajkumar<sup>2</sup>

<sup>1</sup>Department of Neonatology, <sup>2</sup>Department of Pediatrics, Niloufer Hospital, Hyderabad, Telangana, India

Received: 26 October 2018 Accepted: 29 December 2018

\*Correspondence: Dr. Rakesh Kotha,

E-mail: dr.rakeshkotha@gmail.com

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

## **ABSTRACT**

Infestation is a state of being invaded or overrun by parasites. Myiasis is an infestation caused by dipterous fly. Even though human myiasis is a rare infestation particularly in newborn period unlike animal myiasis as neonate is just newly introduced to the environment and during this period neonate usually more protected and taken care by us. In rural areas of tropical countries where good hygiene conditions will not be there, authors are still identifying these cases. Risk factors for myiasis usually poor socioeconomic conditions and unhygienic environment. Finding cases of umbilical myiasis usually indicates poor environmental sanitary measures at that particular place. Here authors are presenting a case of neonatal umbilical myiasis caused by Chrysomya megacephala. These flies usually lay their eggs over the wounds or moisture dead necrotic tissues unlike other species of flies where they usually lay eggs over the animal fecus. But some other free-living flies(saprophagous) also cause myiasis due to accidental laying of eggs over dead necrotic tissues due to open defecation. In present case authors identified myiasis as early as third completed day of life, means infestation occurred at the time of delivery as incubation period for hatching eggs to larvae usually 4-8 days. These larvae able to survive inside deep tissue by breathing through a small hole. Even though myiasis usually have good prognosis it will become a focus for secondary infections. If deep-seated causes severe morbidity and even in extreme cases causes death also. Diagnosis is mainly clinical, authors can identify the species by microscopic examination of third stage larvae and finding age of the larvae also useful in identifying time of infestation. Treatments usually direct removal of larvae from the site by manipulation, irrigation, suffocation by ether and surgery if deep-seated. As they usually create nadir for infection by bacteria ruling out secondary infection and treatment is necessary. It is better to take preventive strategies like birthplace cleanliness and environmental sanitation. Tracking the case helpful in finding the places where authors need to improve sanitary measures it is better to give feedback to appropriate administrative officers to prevent home deliveries.

Keywords: Myiasis, Neonate, Umbilicus

## **INTRODUCTION**

Flies usually have importance in extracting legal evidence in forensic entomology. As a definition Infestation is a state of being invaded or overrun by parasites. In Greek language myia means fly, myiasis is an infestation caused by dipterous fly. Newborn period is very unusual for any infestations as neonate is just newly

introduced to the environment and during this period neonate usually more protected by us. But authors are still finding a case of infestation caused by flies due to poor socioeconomic conditions and unhygienic environment particularly in rural areas of developing countries. Myiasis causing flies may be free living, facultative or obligate parasites depending upon their feeding habits. It is better to mention here that because of

their different feeding habits and short live cycle their genetic material very useful for studying about genetic variability in evolutionary mechanisms. Though myiasis is a simple infestation in extreme cases causes death and there were many case reports about squamous cell carcinoma caused by myiasis.<sup>2</sup>

Here authors are presenting a case of very early umbilical myiasis an infestation caused by dipterous fly *Chrysomya megacephala* which usually lay eggs over the human wounds and wet dead necrotic tissues.

#### CASE REPORT

Three-day old term male 2.5kg neonate born to primi mother delivered by spontaneous vaginal delivery at home in rural Telangana. Baby was cried immediately after birth, started on breast-feeds immediately after birth. Came to hospital in view of dull activity and not accepting feeds. Baby was admitted in NICU (neonatal intensive care unit), septic screen done blood culture sent as septic screen positive authors started on antibiotics. At the time of admission, authors noticed maggots crawling from umbilicus. Authors tried to remove larvae with forceps. Meanwhile Pediatric surgery consultation taken they cut the cord and excised necrotic tissue and removed the remaining larvae by irrigation and manipulation under aseptic precautions, cleaned with antiseptics and dressing was done. Authors done ultrasound to find out deep seated larvae and to rule out secondary infections in the form of abscess, but the scan was normal. Complete urine examination and lumbar puncture were normal. Authors stopped antibiotics after blood culture and septic screen become negative. Authors discharged the baby after gaining adequate weight and proper attachment to mother. Authors sent larvae for microbiology department for identification of species they identified as Chrysomya megacephala. Informed consent was taken from the family for this publication.



Figure 1: Maggots coming from umbilicus.

## **DISCUSSION**

In 1840 Frederick William Hope coined the term myiasis, first case reported by Laurence in 1909.3 Usually common in animals. Historically maggot therapy was used in World War 1 to treat wounds of soldiers. Myiasis is a rare infestation caused by dipterous fly. The order Diptera includes large order of insects that are commonly known as true flies. Species within the family Calliphoridae, and Sarcophagidae causes human myiasis as they usually lay eggs over the wounds and wet dead necrotic tissues. Human myiasis classified as anatomical and ecological according to site of involvement and relationship with the host.<sup>4,5</sup> It usually found in tropical countries usually in some rural areas where basic sanitation was lacking.6 These larvae needs necrotic or living tissue for their growth. Some species flies create infestation on unbroken skin also. Female flies usually lay eggs on warm moisture environment like wounds and umbilical cord stump. Larvae grow rapidly and reach maturity in 4-8 days.7 In present case authors noticed early on 4th day. There are very fewer case reports on umbilicus myiasis.8-11 Some case reports of Myiasis were mentioned from other sites like skin, periorbital region, nasopharynx, vagina and intestines. 12,13 hominivorax is the usual offending agent related to umbilical cord myiasis. In present case authors identified as Chrysomya megacephala. Usually third stage larva is ideal for species identification.<sup>14</sup> Estimation of age of larvae also useful in time of infestation. Though diagnosis is mainly clinical if deep seated authors can use ultrasound for conformation and to rule out deep-seated infections. Management is straightforward. Mainly removal of larvae and control of secondary infection. By irrigation and manipulation, authors can remove them from the site. If deep seated, authors can remove them by surgery to prevent secondary infection or sepsis. According to site of involvement sometimes it is better to kill them by suffocation with ether to prevent migration and remove them through surgery.

## **CONCLUSION**

Even though myiasis is a very rare infestation, it will cause severe morbidity particularly if it is deep seated and it may be the focus for severe secondary infections. That's why it is better to prevent infestation by doing a clean aseptic delivery and good environmental sanitation.

Funding: No funding sources Conflict of interest: None declared Ethical approval: Not required

## REFERENCES

- Hope FW. On insect and their larvae occasionally found in human body. Trans R Ent Soc. 1840;2:256-71.
- Yadav SK, Shrestha S, Sah AK. Extensive myiasis infestation over a malignant lesion in maxillofacial

- region: Report of cases. Int J Pharm Biol Arch. 2012;3:530-3.
- 3. Rao KB, Prasad S. Oral myiasis: A case report. Ann Essences Dent. 2010;2:204-7.
- 4. James MT. The flies that cause myiasis in man. US Depart Agricult; 1947.
- 5. Zumpt F. Myiasis in man and animals in the Old World. A textbook for physicians, veterinarians and zoologist. 1965.
- 6. Fernandes LF, Pimenta FC, Fernandes FF. First report of human myiasis in Goiás state, Brazil: frequency of different types of myiasis, their various etiological agents, and associated factors. J Parasitol. 2009;95(1):32-8.
- 7. Ghosh T, Nayek K, Ghosh N, Ghosh MK. Umbilical myiasis in newborn. Indian Pediatr. 2011;48(4).
- 8. Duro EA, Mariluis JC, Mulieri PR. Umbilical myiasis in a human newborn. J Perinatol. 2007;27(4):250.
- 9. Ghosh T, Nayek K, Ghosh N, Ghosh MK. Umbilical myiasis in newborn. Indian Pediatr. 2011;48:321-3.

- 10. Patra S, Purkait R, Basu R, Konar MC, Sarkar D. Umbilical myiasis associated with Staphylococcus aureus sepsis in a neonate. J Clinical Neonatol. 2012;1(1):42.
- 11. Ambey R, Singh A. Umbilical myiasis in a healthy newborn. Paediatr Int Child Health. 2012;32:56-8.
- 12. Koh TH. Neonatal myiasis: a case report and a role of the Internet. J Perinatol. 1999;19(7):528.
- 13. Beeregowda YC, Kiran B, Gowda NY. Retracted article: Neonatal Umbilical Myiasis with Sepsis. Indian J Pediatr. 2010;77(12):1443-5.
- 14. Cook GC, Zumla A. Manson's tropical disease. 21<sup>st</sup> ed. Philadelphia: Saunders (ELST). Medical Acarology and Entomology; 2003:1727-1732.

Cite this article as: Kotha R, Pandala P, Singh H, Reddy BS, Reddy T, Rathod M, et al. Neonatal umbilical myiasis. Int J Contemp Pediatr 2019;6:872-4.