

# Commentary

## Umbilical myiasis

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*Invited Commentary on 'Umbilical myiasis in a neonate', Kumar and Gupta, and 'Umbilical myiasis in a healthy newborn', Ambey and Singh*

Myiasis in humans is relatively rare but occurs more often than many people think. There are some genuinely parasitic species whose maggots need to feed off living tissue. However, the majority of cases are opportunistic infestations of infected wounds or chronic ulcerative conditions by non-invasive species where the maggots are saprophytic, feeding off necrotic tissue and exudates following bacterial activity. Such infestations are normally advantageous, despite their distasteful nature, and of course maggot therapy has recently undergone a revival in order to treat conditions which antibiotics fail to reach. Apart from the elderly and infirm, it is normally younger children, especially those of low socio-economic status, who are most at risk of experiencing infestations whether owing to super-infection of pre-existing lesions or poor hygiene around body orifices.

In this issue, there are two reports of umbilical myiasis in neonates, both of which have interesting features, not least of which is that both appear to have been caused by the house fly, *Musca domestica*, a fly not normally associated with myiasis because the larvae generally feed off decomposing vegetable matter. The case reported by Kumar & Gupta<sup>1</sup> appears to have been acquired after the cord had dropped off and the fly had taken advantage of the temporarily moist and sloughy wound. These insects were found and removed before they had time to develop and were probably still first-stage or newly moulted second-stage larvae, i.e. not more than about 3–4 millimetres long when fully extended. The other case by Ambey and Singh<sup>2</sup> is more interesting in that the child was only 29 hours old, and the maggots were said to be '4–5 millimetres long', but this must have been in the contracted state because in the illustration the

maggots appear to be fat and more or less fully developed, a process that would normally take at least 4 days. Measurement of the maggots should only be made in the extended state, which can be achieved by dropping them into boiling water followed by alcohol fixation. This processing also makes identification of the species group much simpler as all relevant features can then be observed easily.

In neither case were more than a few maggots removed from the site, which is also unusual as the female house fly normally lays around 100 eggs in a batch. In Ambey and Singh's case, I suspect that this was not a simple opportunistic infestation. In many parts of the rural tropics, it is still common practice to apply cow dung to the umbilicus of newborns, which is a common cause of tetanus or sepsis in neonates. As cow dung is a primary food source for house fly maggots, they can easily be transferred into the umbilicus from the faecal material, resulting in myiasis of the sloughy material around the base of the cord stump. Unless the faeces are well broken up, the maggots would not be noticed until they crawled out from the faecal mass.

The literature on umbilical myiasis is much larger than both sets of authors indicate. Reports from around the world implicate both muscids (house flies) and calliphorid blowflies of several species. However, relatively few cases have had the maggots positively or correctly identified by a competent entomologist, which can lead to considerable confusion and may result in inadequate management of the case if genuinely invasive species are found. For example, one report from India<sup>3</sup> suggested that the infestation was by the New World Screwworm, *Cochliomyia hominivorax*, a species restricted to the Americas which causes panic if genuinely found elsewhere because of its potential economic impact as it is an obligate parasite that can seriously debilitate or even kill cattle.

Also, when cases of human myiasis are found, the management is often overly aggressive, using surgical debridement or, as in the two reported cases, irritant organic compounds such as turpentine<sup>1,2</sup> or ether, both of which could kill larvae *in situ* with possible complications of anaphylaxis or sepsis if maggots die and decompose. It is generally

better to minimally debride the area using no more than a jet of saline to flush maggots out. However, in most cases of myiasis of chronic lesions, the infestation is self-limiting as the maggots drop off when fully developed, the general principle behind maggot therapy.

## References

- 1 Kumar V, Gupta SM. Umbilical myiasis in a neonate. *Paediatr Int Child Health*. 2012;32(1):58–9.
- 2 Ambey R, Singh A. Umbilical myiasis in a healthy newborn. *Paediatr Int Child Health*. 2012;32(1):56–7.
- 3 Beeregowda YC, Kiran B, Yellappa Gowda N. Neonatal umbilical myiasis with sepsis. *Indian J Pediatr*. 2010;77:1443–5.