Lim & Idris Brunei International Medical Journal 2025;21:62-64

Case Report

Brunei International B I Medical Journal M J

Open Access

Myiasis at the Tracheostomy Wound

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Abstract

Myiasis is the parasitic infestation of fly larvae, growing within the host whilst feeding on its tissues. Such larvae can invade in both open wounds and unbroken skin and feed on dead and necrotic tissues at various sites including skin, ears, eyes, intestinal tract and genitourinary sites. Wound myiasis are more frequently seen in tropical areas due to the hot and humid climate which provide a favourable breeding environment for flies. Lower socioeconomic status, neglect of care, prolonged immobility, chronically exposed wound, mental disability, underlying psychiatric illness and immunocompromised individuals are among the known predisposing factors for myiasis. We report an interesting and rare case of myiasis in a neglected tracheostoma who presented acutely with a pneumonia and myiasis was also found in the trachea.

Keywords: Maggot, Infestations, Housefly, Tracheostoma, Wound

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INTRODUCTION

Parasitic infestation remains common and an important public health issue especially in the underdeveloped nations. Myiasis or maggot, is the infestation of fly larvae, growing within the host whilst feeding on its tissues. Such larvae can invade in both open wounds and unbroken skin and tends to feed on dead and necrotic tissues at various sites including skin, ears, eyes, intestinal tract and genitourinary sites.¹ Wound myiasis are more frequently seen in tropical areas where the hot and humid climate provide favourable breeding environment for flies. Lower socioeconomic status, neglect of care, prolonged immobility, chronically exposed wound, mental disability, underlying psychiatric illness and immunocompromised individuals are among the

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known predisposing factors for myiasis.² We report an interesting and rare case of myiasis in a neglected tracheostoma who presented acutely with a pneumonia and myiasis was also found in the trachea. In the literature, myiasis infestation can occur at various sites of the body but only a few publications are available for tracheal myiasis.

CASE REPORT

A 70-year-old lady with a background history of chronic type 2 respiratory failure presented to the Emergency Department at a district hospital with acute onset of shortness of breath. There was also a foul-smelling, blood-stained discharge from the tracheostoma. Years prior, she had undergone a tracheostomy for prolonged ventilatory support during a lengthy stay in the Intensive Care Unit for lower respiratory tract infection.

On examination of the tracheostomy site during this presentation, maggots were seen along the edges of the tracheostoma along with necrotic tissue and dark brownish discharge (Figure 1a). A swab was taken for microbial culture and sensitivity. Aided with Xylocaine -soaked gauze, maggots were removed performed (Figure 1b). She was also treated for lower left lobe pneumonia and commenced on broad-spectrum intraantibiotics. Daily cleansing of the tracheostomy site was carried out. However, due to the state of the tracheostomy, the tube was removed, and an endotracheal tube was inserted to facilitate wound healing. After endotracheal intubation, bronchoscopy was done to assess the tracheobronchial tree. Interestingly, a single larva was seen just above the carina (**Figure 1c and d**) and this was removed. In total, approximately 100 maggots were removed, and wound debridement was also performed during daily review.

The patient was successfully decannulated and transferred to the medical ward for further rehabilitation. The tracheostoma continued to heal and she was discharged home with follow-up arranged.

DISCUSSION

The warm and humid climate in the tropics and subtropics countries serve as a good condition for the parasite in myiasis to breed and infest. There are two groups of larvae causing myiasis and are obligate parasite that occurs in living tissue of host, and facultative parasites that are free living and feeds on decaying material.³⁻⁶

Poor hygiene, prolonged immobilisation, co-existing systemic disease such as diabetes mellitus and negligence from carer or family members are among the likely predisposing factors for developing myiasis.

There are only a few case reports on tracheal myiasis in the literature.^{3,7-10} In one case, myiasis was secondary to an aspirated foreign body via the tracheostomy tube lodged in the intrathoracic trachea.⁷ Others had similar



Figures 1: a) Tracheostomy with necrotic tissue and discharge and a maggot (arrow), b) removed maggots in containers, c) bronchoscopy showing a maggot, and d) removed maggot.

presentation to our patient where myiasis was located around the tracheostoma of patients in a vegetative state or poorly mobilising.^{3, 8-10}

The goals of treatment are to achieve complete mechanical removal of maggots, regular wound debridement and to treat any underlying pre-existing comorbidities. The general principles of treatment from the literature comprise of 3 techniques; ⁸⁻¹²

- 1. Application of toxic substances such as turpentine oil or hypertonic saline to kill the larvae. This may require repeated application.
- 2. To produce local hypoxia either chloroform and turpentine oil can cause suffocation of the maggots and promote them to emerge or surface from the wound.
- Mechanical removal of maggots. Forceful removal should be avoided to prevent incomplete removal as this may lead to allergic complications such as calcification from retention of larval fragments.

With the background history of chronic lung disease in our patient, we opted to use Xylocaine spray (each dose contains 10mg lidocaine) instead of turpentine oil due to its high risk of chemical pneumonitis.^{9,10} The usage of lidocaine can paralyse the larvae to make it easier for extraction, and this facilitated removal.

We were able to recognise another major concern of tracheostomal myiasis which is aspiration or migrations of maggots into the lower respiratory airways can occur. Whether the aspiration pneumonitis that she was treated for was related to the maggot found in the trachea is unknown. However, if it not removed, it is possible that the maggots could have caused complications such causing failure of response or worsening of pneumonia. Therefore, for patients who are found to have myiasis infestation of the tracheostomy site, a bronchoscopy should be consider assessing for infestation and facilitate removal.

CONCLUSION

Although rare, tracheal myiasis can occur. It is therefore important to encourage awareness particularly among patients with predisposing factors and carers.

Declarations

Conflict of interests

The authors declare no conflict of interests.

Acknowledgement

None.

References

- Ockenhouse CF, Samlaska CP, Benson PM, Roberts LW, Eliasson A, Malane S, et al. Cutaneous myiasis caused by the African tumbu fly (Cordylobia anthropophaga). Arch Dermatol. 1990;126:199-202.
- Vitavasiri A, Charoenchasri P, Kaewmanee S, Bhaibulaya M. Subdermal myiasis caused by maggots of chrysomyia bezziana. Siriraj Hospital Gazzetee. 1995;47:419–22.
- Franza R, Leo L, Minerva T, Sanapo F. Myiasis of the tracheostomy wound: case report. Acta Otorhinolaryngol Ital. 2006;26:222-4.
- Arora S, Sharma JK, Pippal SK, Sethi Y, Yadav A. Clinical etiology of myiasis in ENT: a reterograde period--interval study. Braz J Otorhinolaryngol. 2009;75:356-61.
- Zumpt F. Myiasis in Man and Animals in the Old World, Butterworths, London, UK, 1st edition, 1965.
- Amendt J, Goff ML, Compobasso CP, Gherardi M. Forensic Implications of Myiasis, Current Concepts of Forensic Entomology, chapter 14, Springer, 2010.
- Fraga JC, Pires AF, Komlos M, Takamatu EE, Camargo LG, Contelli FHÁ. Bronchoscopic removal of foreign body from airway through tracheotomy or tracheostomy. J Pediatr (Rio J). 2003;79:369-72.
- Sharma R, Barathi KV, Saini R, Bairagi S, Rani D. Tracheostomal myiasis! A word of caution. Indian J Anaesth. 2017;61:936-7.
- Prasanna Kumar S, Ravikumar A, Somu L, Vijaya Prabhu P, Mundakannan Subbaiya Periyasamy Subbaraj R. Tracheostomal myiasis: a case report and review of the literature. Case Rep Otolaryngol. 2011;2011:303510.
- Peng TS, Mohamad H, Kanagaratnam K, Mahbob HBM, Kamalden TMIT. Myiasis in the Neglected Tracheostomy Wound. Oman Med J. 2024 Sep 30;39(5):e681.
- Tsuda S, Nagaji J, Kurose K, Miyasato M, Sasai Y, Yoneda Y.Furuncular cutaneous myiasis caused by Dermatobia hominislarvae following travel to Brazil. Int J Dermatol 1996;35:121-3.
- Tripathy TP, Patel R, Debbarma R, Cupta S, Pattanaik B. Myiasis in Percutaneous Transhepatic Biliary Drainage Site. J Clin Intervent Radiol (ISVIR). 2024;8:131-4.