

# Cutaneous Myiasis Around Gastrostomy (PEG) Tube Insertion Site: The Second Case Report

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## ABSTRACT

**BACKGROUND:** Myiasis refers to the infestation of live human with 2-winged larvae (maggots). Cutaneous myiasis is the most commonly encountered clinical form. It is divided into 3 main forms: furuncular, creeping (migratory), and wound (traumatic) myiasis.

**CASE REPORT:** In this article, we report an extremely rare case of myiasis around percutaneous endoscopic gastrostomy (PEG) tube in a 71-year-old female patient. She had the tube placed for feeding purposes, 8 months prior to her presentation. Family noticed alive worms emerging from skin at the gastrostomy tube insertion site. Patient was treated conservatively with daily dressing with no debridement or use of systemic agents.

**CONCLUSIONS:** PEG tube cutaneous myiasis is an extremely rare disease. Conservative management with petroleum-based and sterilizing agents is shown to be efficient to clear the disease in a short period of time.

**KEYWORDS:** Cutaneous, myiasis, gastrostomy

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## Background

Myiasis is infestation by larvae (maggots) of fly species within the arthropod order Diptera,<sup>1–3</sup> usually occurring in tropical and subtropical areas.<sup>4</sup> The most common flies that cause the human infestation are *Dermatobia hominis* and *Cordylobia anthropophaga*.<sup>5</sup> The larvae feed on the host's dead or living tissue, body substances, or ingested food.<sup>6</sup> Cutaneous myiasis is a form of myiasis affecting the skin, and it is the most common form of myiasis.<sup>7</sup> The main factor causing larvae to grow is poor personal hygiene.<sup>4</sup>

Clinical presentation of cutaneous myiasis is usually as a lump under the skin, with erythema of the skin.<sup>4</sup> Larvae under the skin may move occasionally and present through wounds, but most of the time they remain under the skin and do not travel throughout the body.<sup>4</sup>

## Case Report

A 71-year-old female patient has diabetes mellitus, essential hypertension, and an old stroke, which left her hemiplegic, bedridden with inability to coordinate swallowing. A PEG (percutaneous endoscopic gastrostomy) was inserted 8 months prior to her presentation. She used to be fed through the PEG with no reported issues. Family noticed alive worms coming out from skin at the gastrostomy tube insertion site, for which she was brought in and admitted to the hospital.

Examination revealed a soft abdomen with no tenderness, guarding, or rigidity, a patch of erythema around the gastrostomy (5 cm), with about 15 alive worms were noticed around the

gastrostomy tube exit site (Figure 1). Laboratory work up was unremarkable.

A multidisciplinary approach to management was initiated. It involved both surgical and infectious diseases teams. Treatment consisted of the following steps:

*Step 1.* Killing the larvae. This was achieved by irrigation with a mixture (povidone-iodine 10% + hydrogen peroxide 2% [diluted]) and mechanical clearance (using gauze and forceps). This step has been done 1 time at the time of admission.

*Step 2.* Immediate application of occlusive dressing (gauze impregnated with petroleum-based preparation [Vaseline<sup>®</sup>] around the PEG tube to induce suffocation of the larvae that reside subcutaneously). Dressing was kept in place for the first 24 hours.

*Step 3.* Application of petroleum-based preparation (Vaseline) locally (3 times daily for 2 weeks) to occlude around the gastrostomy tube, and to reduce local irritation and inflammation.

After 24 hours of management, all larvae were cleared, and no new larvae appeared around the gastrostomy. No surgical debridement needed and no systemic drugs were used. Management with topical Vaseline continued for 2 to 3 weeks to reduce local irritation and excoriation of the skin that resulted from the inflammation.





**Figure 1.** Alive worms were noticed around the gastrostomy tube exit site.

## Discussion

Myiasis is caused by infestation with larvae of fly species within the arthropod order Diptera.<sup>1,2,4,5</sup> *D hominis*, the identified fly in this case, also known as the human botfly, is mostly native to South and Central America.<sup>8</sup> Other than humans, its larvae also infest domesticated and wild animals, despite the exclusivity its name indicates.<sup>9</sup> The Dipteran flies are 2-winged insects.<sup>6</sup> The life cycle of the fly consists of 4 stages: egg, larva, pupa, and adult. Life cycle starts when the adult fly lays eggs (usually 1-250 eggs per batch) via a specialized structure known as ovipositors.<sup>6</sup> The botfly eggs are deposited on the abdomen of mosquitoes and subsequently carried to the host. Eggs will hatch and release the small larvae after a few hours to several days.<sup>6</sup> The larvae (maggots) have prolegs that allow them to crawl through narrow spaces. Usually, larvae feed on decaying organic material.<sup>6</sup> After reaching optimum maturity, they make their way to the surface of the wound, ultimately returning to the soil to pupate.<sup>9</sup>

Humans acquire the infection by several ways: (a) when flies deposit their eggs on or near a wound, (b) when mosquitoes contaminated with eggs bite people or (c) when larvae burrow into skin.<sup>10</sup> The pathophysiology of the human infection differs depending on the type of fly and its mode of infestation.<sup>4</sup>

Guleryuzlu et al<sup>1</sup> described the first case of wound myiasis related to PEG feeding tube. They reported a case of 79-year-old bedridden woman who had stroke. Percutaneous endoscopic gastrostomy tube was inserted for feeding 4 months prior to presentation. Her family noticed the maggots at the PEG stoma. They described her hygiene condition as poor. On physical examination, she had hyperemic skin and numerous worms of length of 10 to 12 mm at the PEG site. Their management consisted of admission to hospital, wound debridement, and removal of worms using povidone-iodine-soaked gauze, and complete disappearance of worms took 3 to 4 days and then daily dressing was done with povidone-iodine-soaked gauze and the wound left open to heal. Percutaneous

endoscopic gastrostomy tube was not exchanged and patient discharged home after wound healing.

In our case, poor hygiene around the PEG tube, and possibly food particles, attracted the flies to lay their eggs in or around the wound. Moist environment, poor hygiene, and dead tissue around the PEG tube contributed to eggs hatchment and helped larvae to keep alive. To our knowledge, this is the second reported case of cutaneous myiasis around PEG feeding tube.

Finally, prevention is better than cure, and preventive steps should focus on keeping dry skin around the PEG tube, proper hygiene, and regular checkup in the clinics. Immediate medical consultation should be ensued if any abnormal color, discharge, swelling, or smell is noticed.

In conclusion, PEG tube cutaneous myiasis is an extremely rare disease. Conservative management with petroleum-based and sterilizing agents is shown to be efficient to clear the disease in a short period of time.

## Author Contributions

MNBH: Manuscript writing and data collection; ARAM and HD: Manuscript writing and data analysis; FBH and ZBH: Data collection and review of literature.

## Informed Consent

Consent to publish this study material has been obtained from the patient and his family.

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