

MYIASIS IN THE DISABLED AND ELDERLY AS A POTENTIAL MARKER OF MEDICAL NEGLECT

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Abstract: Background. Myiasis is a parasitic infestation caused by dipterous fly larvae, typically affecting individuals with poor hygiene or chronic wounds. In vulnerable populations—such as the elderly, disabled, or non-verbal—its presence may signal more than a clinical issue, potentially indicating systemic neglect. Histopathological examination plays a key role in confirming infestation and determining its timing relative to death.

Case Reports. We present three cases of myiasis discovered through surgical or biopsy specimens. Case 1 involves a 9-year-old boy with congenital deafness and mutism, presenting with a ruptured cervical lesion. Case 2 features a 68-year-old hemiparetic woman with a non-healing postoperative leg wound. Case 3 concerns an 83-year-old blind, diabetic man living alone, with larval activity noted in ulcerated leg lesions. In all cases, diagnosis was confirmed histologically, revealing larval structures surrounded by eosinophilic and neutrophilic infiltrates.

Conclusion. These cases highlight the medicolegal relevance of myiasis in dependent individuals. The diagnosis, especially when made via histopathology, may indicate inadequate caregiving and warrants broader forensic and ethical evaluation. Clinicians should maintain a high index of suspicion in such patients and consider mandatory reporting in cases suggestive of neglect.

Keywords: myiasis, medical neglect, vulnerable patients, histopathology, forensic pathology.

INTRODUCTION

Myiasis, the infestation of human or animal tissues by dipterous fly larvae, is a relatively rare but clinically significant condition that typically affects individuals with impaired hygiene, open wounds, or compromised mobility. While often reported in tropical and subtropical regions, myiasis may occur in institutionalized or medically dependent patients regardless of geographic location, especially when hygienic care is suboptimal or neglected (1).

Clinically, myiasis may present in various forms - cutaneous, nasopharyngeal, ophthalmic, urogenital, and even cerebral (2). The cutaneous form, especially when associated with necrotic or ulcerative lesions, is the most commonly encountered in surgical and pathological practice (3). However, beyond its

parasitological and infectious implications, myiasis in dependent populations such as the elderly, disabled, or non-verbal individuals raises important questions about quality of care and medical oversight.

In vulnerable patients unable to express pain or discomfort, undetected parasitic infestation may indicate systemic neglect. When such cases are identified only after surgical intervention or during histopathological evaluation - as in the present case series - they not only challenge diagnostic workflows but also implicate broader issues of patient advocacy, forensic assessment, and ethical responsibility (4).

Despite its low incidence, myiasis may serve as a biological marker of inadequate caregiving, particularly in settings such as long-term care facilities, post-operative wards, or among homebound patients. Thus, its occurrence in such contexts necessitates

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interdisciplinary evaluation, incorporating surgical, pathological, infectious, and medicolegal perspectives.

CASE PRESENTATIONS

Case 1

A 9-year-old boy from a rural area presented with a painful, erythematous, nodular lesion on the lateral aspect of his neck. The child had a congenital hearing and speech impairment, which made communication challenging. Initial management consisted of topical ointments and traditional local remedies administered at home by the family. Over time, the lesion ruptured and began discharging persistent purulent and bloody fluid. Due to failure of wound healing, he was eventually admitted to a regional hospital. A clinical diagnosis of “infected cervical cyst” was made, and surgical excision of the lesion was performed.

Case 2

A 68-year-old woman with a history of hemiparesis underwent a minor surgical procedure on the skin of her paretic lower extremity. The reason for the intervention could not be clarified due to limited clinical documentation and the patient's

communication difficulties. The postoperative wound failed to heal, showing chronic inflammation and intermittent discharge. A skin biopsy was obtained from the wound site for diagnostic clarification.

Case 3

An 83-year-old man, living alone and suffering from diabetes mellitus, hypertension, and diabetic retinopathy, reported long-standing pain and tingling sensations in his lower limbs. His only social support consisted of occasional visits from grandchildren. On physical examination, the lower limb skin exhibited diffuse erythema, edema, and ulcerative lesions. Mobile larvae were noted within the wound beds during inspection (Fig. 1). To exclude possible underlying malignancy or secondary skin disease, a punch biopsy was performed.

Histopathological Findings

Histopathological examination of the excised or biopsied tissues from all three cases revealed the presence of multiple larval structures embedded within necrotic or inflamed soft tissues. The larvae were observed as well-defined, elongated, segmented structures surrounded by a thick eosinophilic

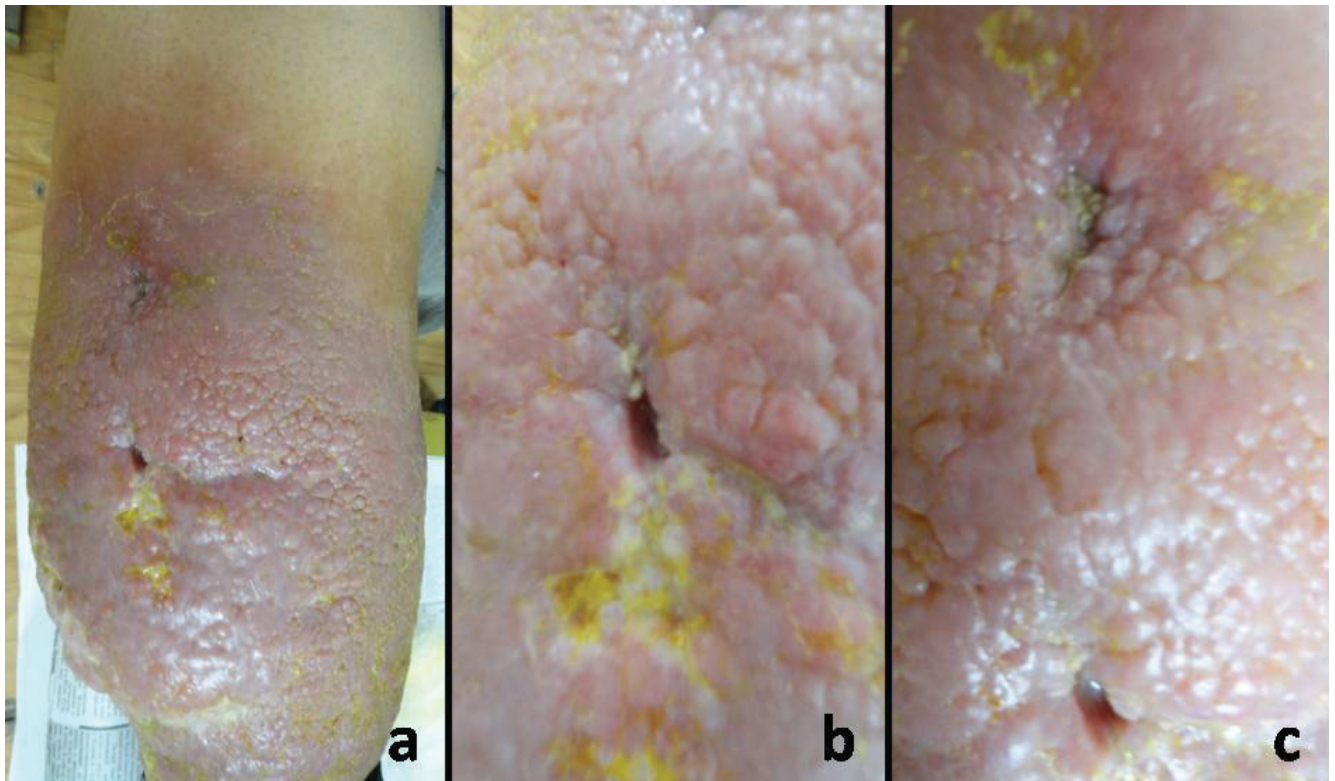


Figure 1. Clinical presentation of the patient with extensive erythema, edema, and ulcerative skin changes in the lower extremity. (a) Diffuse erythematous and indurated lesion of the leg with yellowish crusts and focal ulcerations; (b, c) Closer views of the skin show sinus-like openings with serous discharge and visible movement consistent with active larval infestation.

cuticle. Internal anatomical features such as striated muscle fibers, primitive digestive tracts, and tracheal rings were clearly discernible. In several sections, characteristic features including paired spiracular plates and cephalopharyngeal skeletons were identified, consistent with dipterous fly larvae (Calliphoridae or Sarcophagidae family). The preservation of larval architecture within host tissue suggests a relatively recent infestation at the time of sampling. The surrounding tissue exhibited marked acute and chronic inflammation. Notably, there was a prominent eosinophilic infiltrate, accompanied by numerous neutrophils and occasional multinucleated giant cells. In areas adjacent to larval structures, intense edema, vascular congestion, and granulation tissue formation were evident. Foci of microabscesses and necrosis were also present. No evidence of malignancy or specific dermatoses was identified in any of the biopsies. The

inflammatory profile - particularly the abundance of eosinophils - supports a parasitic etiology, while the coexistent neutrophilic infiltrate suggests ongoing superinfection or tissue damage associated with larval movement and enzymatic activity (Fig. 2).

DISCUSSION

Myiasis is more prevalent in tropical and subtropical regions, where warm and humid climates support the life cycle of dipterous flies. It is frequently reported in Latin America, Sub-Saharan Africa, Southeast Asia, and parts of the Indian subcontinent (1). However, isolated cases in temperate regions have also been documented, particularly among vulnerable or neglected populations (5).

The skin is the most commonly affected organ system, particularly in areas with open

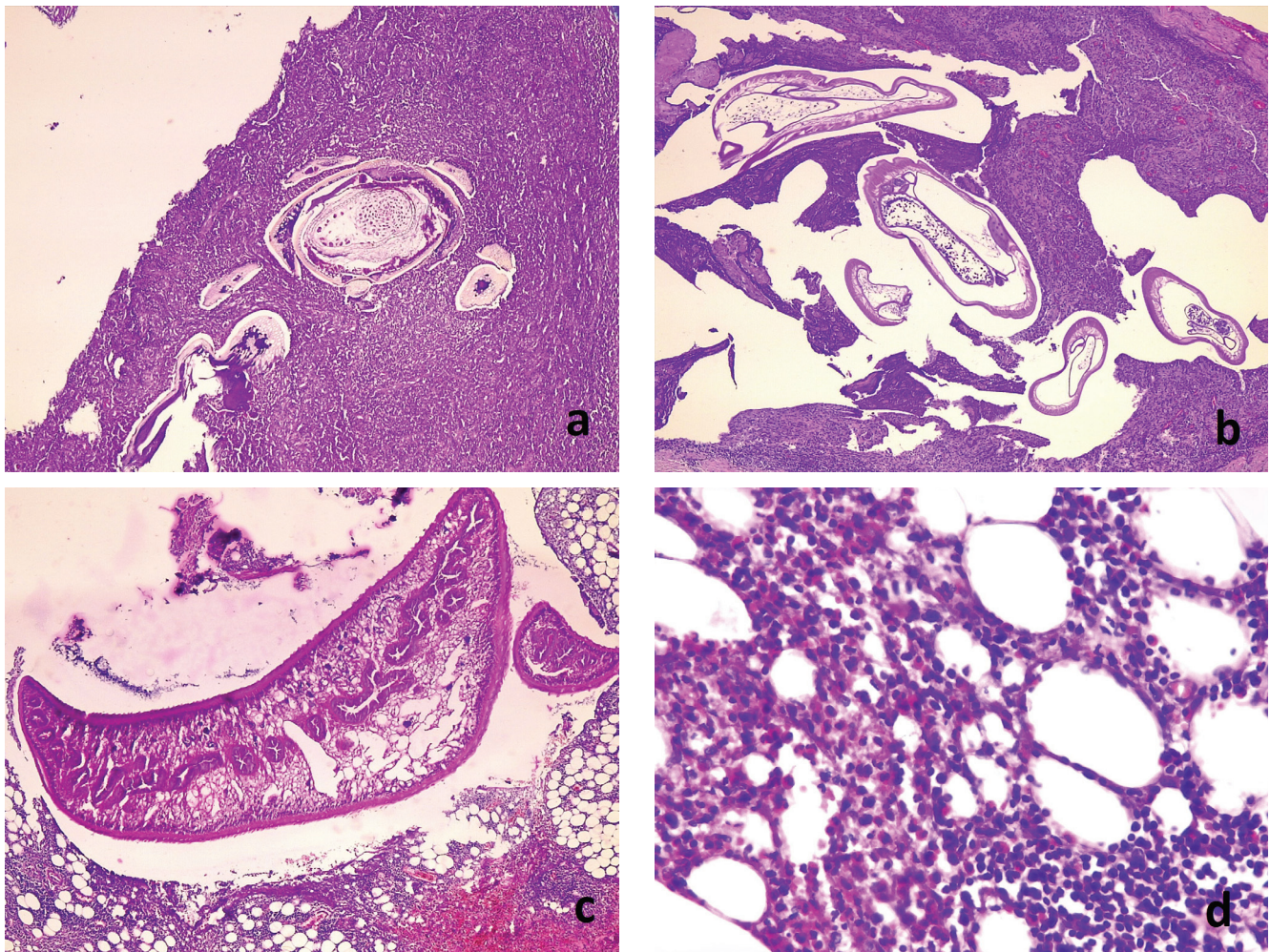


Figure 2. Histopathological features of cutaneous myiasis. (a, b) Multiple dipterous larvae embedded within inflamed and necrotic tissue, with visible segmented cuticle and internal structures (H&E, x40–100); (c) Higher magnification reveals preserved larval structures, including body wall and gut components (H&E, x200); (d) Surrounding host tissue demonstrates intense inflammatory reaction rich in eosinophils and neutrophils, confirming ante-mortem infestation (H&E, x400).

wounds or poor hygiene. Cutaneous myiasis often involves the extremities, scalp, and perineal region (3,6). Rare localizations have been reported in the oral cavity, genitourinary tract, nasal passages, eyes (ophthalmomyiasis), and even the gastrointestinal and central nervous systems (2, 7-9). These atypical sites often present diagnostic challenges and may mimic neoplastic or infectious processes.

Myiasis in disabled, elderly, or non-communicative patients may serve as an indicator of medical or social neglect, particularly when wounds are unmonitored or inadequately treated. Socioeconomic factors, such as poverty, lack of access to healthcare, and caregiver burden, are often implicated (10). In our series, each case occurred in a context of social vulnerability - whether due to physical disability, advanced age, or communication impairment. Prior studies have linked institutional or familial neglect with delayed diagnosis and management of parasitic infestations (4, 11).

Differentiating between ante- and postmortem myiasis is critical, especially in forensic evaluations. The presence of eosinophilic infiltrates, along with neutrophils, vascular congestion, hemorrhage, and granulation tissue, suggests an immune response indicative of antemortem infestation (11). In contrast, absence of inflammation around larvae in autopsy tissue may point to postmortem colonization. In all three of our cases, rich eosinophilic and mixed inflammatory reactions confirmed a vital host response.

In forensic autopsies, larval development stages can contribute to postmortem interval estimation. Entomological analysis, including identification of fly species and instar stages, allows approximate timing of death, especially in advanced decomposition (12). Although this was not the primary focus of our study, awareness of larval forensic utility is essential when interpreting such findings at autopsy.

In conclusion, myiasis is not only a parasitic disease but also a potential symptom of systemic neglect, particularly in patients who are dependent or socially marginalized. Histological evidence - especially eosinophil-rich inflammation - can confirm antemortem infestation, and clinicians must remain alert to its forensic and ethical implications.

Conflict of interest

The authors declare that they have no conflict of interest.

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