Nasal myiasis in myasthenic crisis, a case report and literature review

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ABSTRACT

We are reporting a unique case of drosophila larva nasal myiasis (NM) in a 72-year-old male patient admitted to the ICU with diffuse muscle weakness and respiratory failure due to myasthenia gravis crisis and septic shock due to pseudomonas pneumonia. The myiasis was noticed on the third day of admission two days following traumatic insertion of a nasogastric tube. The patient underwent nasal endoscopic mechanical extraction and lidocaine nasal spray with saline nasal flushes. To our knowledge, this is the first case report of NM in a myasthenia gravis (MG) patient. Chronic muscle weakness in MG patients might play a role in having NM as these patients are less likely to be able to protect themselves from flies. Managing NM in our patient was challenging due to the potential neurologic side effects of most of treatment options mentioned in the literature.

1. Introduction

Nasal myiasis is a rare case of invasion of fly larvae into the nasal cavities. It usually affects immobile and debilitated patients [1]. It begins when the fly enters the nasal cavity and lays its eggs. The eggs hatch into larvae within 24 hours. The larvae reach full maturation within 2–3 days then migrate to look for dry environments to continue their life cycle [2]. Myiasis also can happen in other areas of the body including wounds and the gastrointestinal system. The consequences range from simple subcutaneous skin nodules to serious complications such as nasal skull invasion or blindness due to invasion of the optic nerve [3].

2. Case presentation

The patient is a 72-year-old male with a past medical history of myasthenia gravis, type 2 diabetes, atrial fibrillation, and pulmonary embolism. He presented to the emergency room with a 2-day history of worsening dysarthria, diffuse muscle weakness, and altered mental status. He was diagnosed with myasthenia gravis 3 months prior after having progressive weakness and dysphagia resulting in him becoming bedbound and requiring Percutaneous Endoscopic Gastrostomy (PEG). His symptoms were managed with daily prednisone and pyridostigmine. He had recently been discharged from an acute rehab facility with worsening dysarthria, diffuse muscle weakness, and altered mental status. He was diagnosed with myasthenia gravis, type 2 diabetes, atrial fibrillation, and pulmonary embolism. He presented to the emergency room with a 2-day history of worsening dysarthria, diffuse muscle weakness, and altered mental status. He was diagnosed with myasthenia gravis 3 months prior after having progressive weakness and dysphagia resulting in him becoming bedbound and requiring Percutaneous Endoscopic Gastrostomy (PEG). His symptoms were managed with daily prednisone and pyridostigmine. He had recently been discharged from an acute rehab facility with normal mentation and improving strength.

On presentation, he was admitted to the ICU for septic shock, acute respiratory failure secondary to myasthenic crisis, pseudomonas pneumonia, proteus UTI, and acute renal failure. Head CT was nonacute. He was intubated immediately following arrival and started on broad-spectrum antibiotics, intravenous immunoglobulin (IVIG), and intravenous heparin in place of his home apixaban. Due to abdominal pain, a nasogastric tube was placed until proper location of PEG tube was confirmed. Following NG tube placement, patient’s hemoglobin drop was noticed inside his nostrils (Fig. 1). The ear, nose, and throat (ENT) specialist was consulted and performed nasal endoscopy. The maggots were found to be feeding on a large blood clot that had formed following NG tube insertion.

During nasal endoscopy, lidocaine and oxymetazoline were applied locally, and mechanical extraction of maggots and blood clot was successful. Additional lidocaine was applied to the nasal airway. Repeat endoscopy showed resolution of nasal myiasis and complete extraction of the blood clot. There was no recurrence during his hospitalization. He was treated with plasmapheresis followed by IVIG for myasthenic crisis, and his mental status and muscle strength improved. He was not successfully extubated due to prolonged intubation and profound respiratory muscle weakness, and tracheostomy was performed. The patient
was discharged to a long-term acute care facility for further recovery.

3. Discussion

Predisposing factors to developing nasal myiasis include atrophic rhinitis, malignancy, blood, or necrotic tissue on which the maggots feed after a fly lays eggs near the nasal region [4,5]. Fortunately, our patient did not have malignancy or necrotic tissue, rather, due to anticoagulation, excessive bleeding from nasogastric tube placement resulted in a large blood clot on which the maggots fed.

The time of onset on the third day of admission makes it uncertain whether the fly eggs were laid prior to or during his hospitalization, though the lifecycle of drosophilidae supports this being a nosocomial infection. He was intubated and on sedation; therefore, he was unable to protect himself from flies landing on him. In previous literature, there is a trend of myiasis occurring in critically ill patients on mechanical ventilation [6,7]. To consider the possibility that it was acquired at home, the patient’s muscle weakness due to myasthenic crisis would have made him unable to swat away a fly landing near his nasal mucosa.

In previous case reports, mechanical removal of larvae has been consistently described, but medical treatments have varied between cases. In addition to lidocaine nasal spray, other effective medications include ivermectin, local chloroform [5], or pyrantel pamoate [8]. In this case, treatment options are limited to topical lidocaine, as other agents are known to worsen myasthenia gravis.

4. Conclusions

Nosocomial NM is a serious infestation to several body tissues. General debility or weakness might play a role in having NM due to inability to keep the flies away from nasal orifices. Lack of evidence on consensus treatment will make managing these cases more challenging, especially in patients with neurological comorbidities due to medications side effects.

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Fig. 1. Maggots extracted from the patient’s nostrils.