

## Unusual Presentation of Nasal Myiasis

Mohammed A Aljuaid, Jehad A Alzahrani, Moad B Basfar, Hisham A Essa

College of Medicine, Umm Al-Qura University, Makkah, Saudi Arabia

Corresponding author: Moad B Basfar, email: moadbasfar@icloud.com

### SUMMARY

This is a 25 years old male who have been diagnosed with asthma recently, presented to the ER with a clinical picture of acute respiratory distress. Mechanical ventilation was required due to severe hypoxia along with full asthma management. Patient status remain static despite treatment. Initial workup did not show any evidence pointing towards a specific underlying etiology of this refractory asthma. On second day of admission, worms were noted emerging from his nose, parasitology report confirm the diagnosis of myiasis. Patient respond dramatically to ivermectin and metronidazole and was discharged without any complication.

**Keywords:** Unusual Presentation, Nasal Myiasis.

### BACKGROUND

Myiasis is the parasitic infestation of the body of a live mammal by fly larvae (maggots) that grow inside the host while feeding on its tissue. Although flies are most commonly attracted to open wounds and urine or feces-soaked fur, some species (including the most common myiatic flies (such as the common housefly) as vector agents for their parasitic larvae.

Because some animals (particularly domestic animals) cannot react as effectively as humans to the causes and effects of myiasis, such infestations present with severe and continuing problem for livestock industries worldwide, causing severe economic losses where they are not mitigated by human action<sup>[1]</sup>.

Although typically a far greater issue for animals, myiasis is also a relatively frequent affliction of humans in rural tropical regions where myiatic flies thrive, and often may require medical attention to surgically remove the parasites<sup>[2]</sup>.

### Case presentation

The story is about a 25 years old Saudi college student who was brought in by the ambulance to emergency room of King Faisal Hospital at Taif city of Saudi Arabia due sudden attack of shortness of breath. Initial assessment of the patient reveals an anxious patient in a respiratory distress with inability to talk in phrases. Ventolin started empirically but shows no improvements. Within minutes he started deteriorating and seizing in form of generalized tonic clonic. Vitals signs were as follows: T : 37C, BP :161/100, HR :144, O2 sat : 50% on room air and RR: 55. Immediately he was intubated and started on mechanical ventilation.

Detailed history was obtained from his friend who were at the scene with him when he experienced the sudden attack (later confirmed by the patient) . He is known asthmatic on Ventolin PRN. Without any warning he experienced sudden onset of shortness of breath that limited him from speaking. He is otherwise healthy and compliant with treatment. Other review of system is unremarkable. No prior similar attack before or any previous admission. No family history of cardiac disease. He is not known to be on any recreational drugs nor smoking. He lives with his family in Taif city with good socioeconomic status. No recent travel to endemic areas or any known allergy.

Rest of examination was insignificant except for central cyanosis and silent chest. No cutaneous lesion or draining wound were appreciated.

### Differential Diagnosis

- Asthma exacerbation
- Anaphylaxis
- Arrhythmia
- Pneumothorax
- Allergic bronchopulmonary aspergillosis (ABPA)
- Drug overdose
- Intracranial hemorrhage
- Investigation

Routine lab work done along with ECG, ABG, Brain CT and CXR. Initial lab showed normal WBC but with lymphocytosis and eosinophilia. Other parameters were normal. ABG picture was consistent with respiratory acidosis and severe hypoxemia. CXR showed only hyperinflated chest and flattened

diaphragm without any evidence of consolidation. CT is evident for changes consistent with chronic sinusitis without any acute hemorrhage or infarction. ECG is only significant for sinus tachycardia.

### Clinical course

Despite full asthma management patient states remained static. On the second day of admission, the nurse in charge of the case found worms emerging out from his nose (**Figure 1**). Sample sent to parasitology department which confirmed identification of adult fly larvae (myiasis). Bronchoscopy were also done for extensive evaluation. Results were equivocal for query parasitic infestation + secondary infection, areas of hyperemia were noted on both right and left main bronchus.



**Figure 1:** larvae pictured as it emerges out from the patient's nose

### Treatment and outcome

Upon confirming the diagnosis, Patient received:

- Ivermectin 15 mg PO TID
- Metronidazole 500 mg PO TID for 5 days
- Ceftriaxone 2 gm IV

Substantial improvement was evident 3 days later and patient was discharged with no further symptoms.

### Discussion

In this study report of a case of refractory asthma exacerbation in the presence of nasal myiasis, it focuses to the possible relation between nasal myiasis and asthma.

This patient is known to have asthma on Ventolin inhaler ( PRN ). He is not known to have an allergy • that may induce an anaphylactic shock, neither he was exposed to elements that may lead to anaphylactic

shock prior the attack, according to the history that was taken. He's also not known to be on any recreational drug or medication that may exacerbate his asthma. CXR showed NO trapped air in lungs which rule out pneumothorax. Brain CT showed only chronic inflammation of sinuses, with no cerebral lesion or hemorrhages.

Myiasis is known as invasion of tissue of livings by dipteran larvae <sup>[3]</sup> which feed on living or necrotic tissues for a period of time <sup>[4]</sup>. Nasal Myiasis is relatively rare, among myiasis types<sup>[5,6]</sup>. In one study, this manifestation represented 70% to 75% of ENT myiasis cases<sup>[7]</sup>. Pulmonary myiasis are even more rarer, with only four infection have been reported <sup>[8]</sup>. As bronchoscopy showed hyperemic and sign of inflammation only. So, bronchoalveolar lavage was sent to parasitology which showed no presence of larvae.

Clinically, nasal myiasis usually present with epistaxis, foreign body sensation, foul smell, passage of worms, facial pain, nasal obstruction, nasal discharge, headache, dysphagia, and sensation of foreign body in the nose <sup>[9,10,11]</sup>. Although this patient was asymptomatic prior to presentation, which raised a question whether it was hospital acquired or not. According to microbiology report of the arthropods larvae sample, which was found on the second day of admission, showed 2nd Instar fly larvae ( myiasis ).

Many complication can be associated with nasal myiasis including orbit or facial cellulitis, ulceration of the posterior pharyngeal wall, septal perforation with saddle nose, palatal perforation<sup>[7,9]</sup>. And more life-threatening complication such as, penetration into the central nervous system, with meningitis, pneumocephalus <sup>[12]</sup> or even death, with mortality rate up to 1.19% <sup>[9]</sup>.

No studies yet have shown a relation between asthma and myiasis in general. Only 3 similar cases of patients who presented with respiratory issues and had to be intubated as well then sent to ICU where they have been found to have oral myiasis which make a new relation, to be looked for, between intubation and myiasis.

### Learning points

The case reminds us about the importance of considering parasitic infection in the differential diagnosis of asthma exacerbation, especially in

patient with unsatisfactory response to traditional asthma management

- Parasitic infection should be suspected in patient with eosinophilia
- Patient who previously diagnosed with nasal myiasis may warrant aggressive treatment to prevent further fatal event
- Further investigations are required to answer whether this acute presentation is from severe nasal obstruction or propagation of the larva to the lung.

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