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Unusual Presentation of Nasal Myiasis in Immunocompetent Young Individual: Case Report

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ABSTRACT

Background: Nasal myiasis, an infestation by fly larvae, is a rare condition typically associated with immunocompromised individuals, poor hygiene, and low socioeconomic status. It is commonly seen in tropical regions and is often linked to chronic sinonasal diseases or underlying health conditions. However, cases in healthy individuals without predisposing factors are uncommon, making this case novel and worthy of documentation. The importance of timely diagnosis and effective management in preventing severe complications cannot be overstated.

Case Presentation: A 40-year-old male presented to the emergency department with complaints of left nasal bleeding for three days, which was profuse, intermittent, and spontaneously resolved. The patient also reported left nasal obstruction, crawling sensation in the nose, facial pain, headache, and toothache, with no history of fever, cough, post-nasal drip, or ear-related issues. Examination revealed a normal right nasal cavity, while the left nasal cavity was blood-stained with clots present. The oral cavity appeared normal.

Diagnostic nasal endoscopy on presentation showed a blood-stained left nasal cavity with clots extending to the choana, slough over the inferior turbinate, and maxillary ostium. Subsequent endoscopy revealed extensive maggots in the inferior meatal region, extending into the maxillary, ethmoidal, and sphenoid sinuses, causing mucosal erosion and exposed bones. Computed tomography of the nose and paranasal sinuses revealed mucosal thickening with heterogeneous secretions in the left frontal, ethmoidal, maxillary, and sphenoid sinuses and erosion of the left inferior and middle turbinates.

The patient was managed with continuous manual extraction of maggots through endoscopy using turpentine oil, followed by saline nasal irrigation. Empirical intravenous antibiotics were administered, and the patient underwent surgical debridement to remove unhealthy nasal mucosa and slough from the maxillary ostium, ethmoid, and sphenoid sinuses. No maggots were observed during the procedure, and the patient's condition improved significantly post-treatment.

Conclusions: This case of nasal myiasis in an immunocompetent individual without predisposing factors highlights the need for increased vigilance and awareness in diagnosing and managing this rare condition. Proper hygiene and prompt medical intervention are crucial in preventing severe complications. Public health education and improved sanitation practices are vital in combating this preventable yet distressing condition.

Keywords: Case report; Nasal myiasis; Maggots; Peenash; Chrysomya bezziana

BACKGROUND

Nasal myiasis, caused by larvae of Diptera flies infesting the nasal cavity, is more commonly found in tropical regions than in temperate climates. These larvae thrive on decaying matter, including necrotic human tissue. Reported cases predominantly arise in underdeveloped nations or among individuals living in unhygienic conditions, experiencing chronic infections, suffering from malignancies, or facing limited access to healthcare1. The term "nasal myiasis," introduced by Rev F.W. Hope in 1840, was further defined by Stecle in 1897 and Castellani and Chalmers in 1919. Typically associated with factors such as low socioeconomic status, compromised immunity, mental disabilities, and poor hygiene, our case presents an unusual occurrence: a healthy adult without underlying risk factors or comorbidities experiencing nasal myiasis2.

CASE PRESENTATION

Patient Information: A 40 year old male presented to casualty with complaints of left-sided nasal bleed for 3 days, which was profuse, intermittent, and spontaneously resolved. The patient reported a history of nasal probing with a stick, after which the nasal bleed started. He also experienced left-sided nasal obstruction, crawling sensation in the nose, facial pain, headache, and toothache. There was no history of fever, cough, post-nasal drip, cheek swelling, nor any complaints related to the ears.

Clinical Findings: Examination of the nose revealed a normal right nasal cavity and left nasal cavity was blood-stained and clots were present. The oral cavity appeared normal.

Diagnostic assessment: Diagnostic Nasal Endoscopy revealed a blood-stained left nasal cavity with clots extending from anterior to posterior till the choana, along with slough over the inferior turbinate and maxillary ostium on the day of presentation. On the second day of endoscopy, extensive maggots were observed in the

inferior meatal region, extending into the maxillary, ethmoidal, and sphenoid sinuses, with erosion of mucosa and exposed bones (Figure 1).

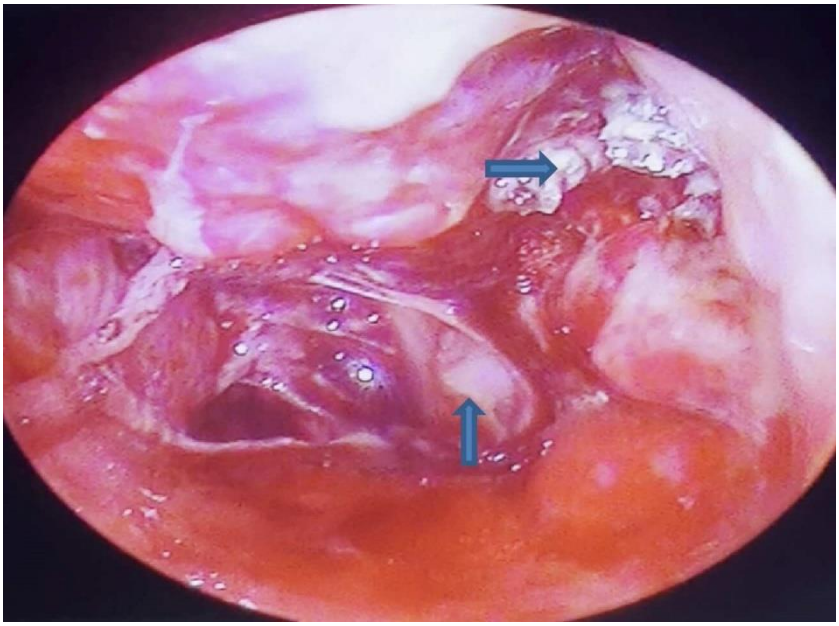


Figure 1

Plain Computed Tomography of the Nose and Paranasal Sinuses showed mucosal thickening with heterogeneous secretions in the left frontal, ethmoidal, maxillary, and sphenoid sinuses, with erosion of the left inferior and middle turbinates (Figure 2: a,b).

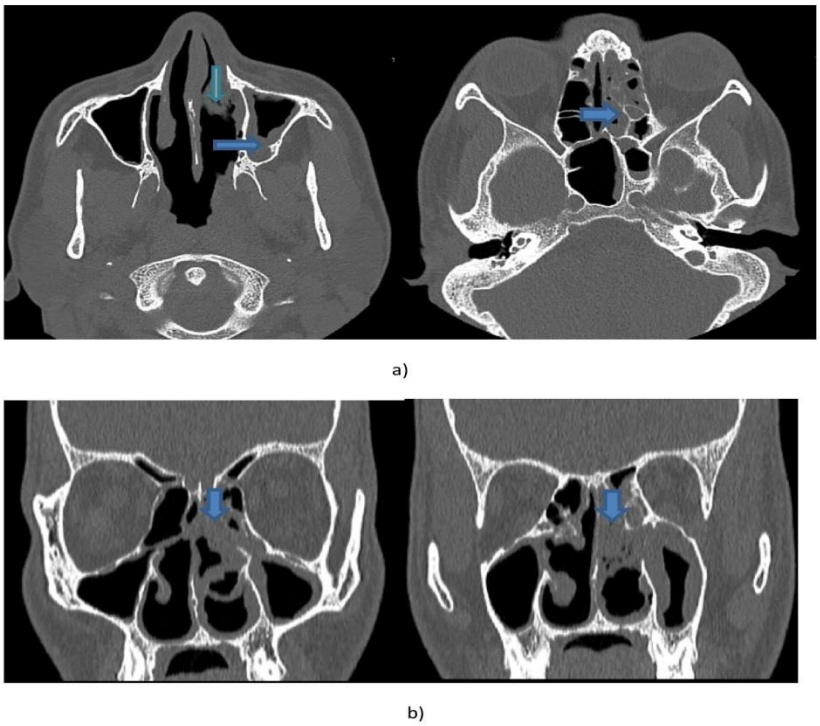
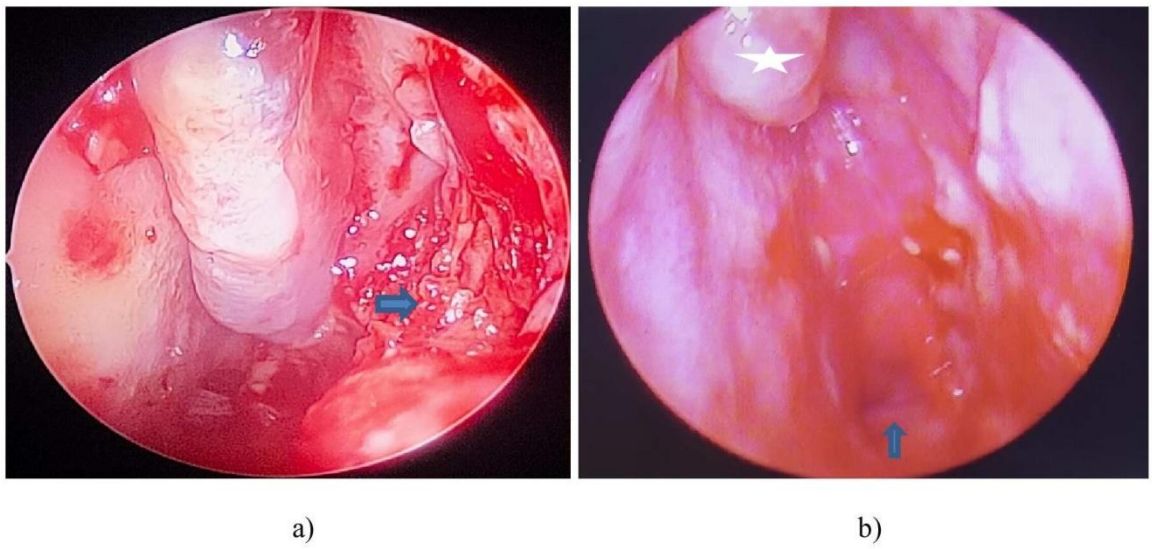


Figure 2 a, b

Therapeutic Intervention: Patient was managed by continuous manual extraction of maggots through endoscopy using turpentine oil followed by saline douching. He was empirically treated with intravenous antibiotics. The patient then underwent wound debridement and unhealthy nasal mucosa along with slough was removed from maxillary ostium, ethmoid sinus region and sphenoid sinus region. No maggots were observed during the procedure (Figure 3: a, b).



a) b)

Figure 3 a, b

Follow-up and Outcome: On subsequent follow-up of the patient after one week the patient had no complaints and endoscopy revealed complete regeneration of nasal mucosa.

DISCUSSION

Nasal myiasis, characterized by the invasion of living tissue by fly larvae, poses a significant health risk, particularly in tropical and subtropical regions. This distressing condition, often linked with inadequate sanitation and hygiene practices, is primarily caused by infestations of Chrysomya bezziana larvae, which are attracted to open wounds or bodily orifices like the nose. These flies deposit hundreds of eggs, which quickly hatch, initiating the infestation process. Symptoms of nasal myiasis, including nosebleeds, nasal blockage, foul-smelling nasal discharge, facial discomfort, and headaches, underscore its invasive nature. Additional signs may include nasal discharge, irritation, itching, and a sensation of movement in the nose1. Factors contributing to its prevalence include low socioeconomic status, compromised immunity, mental disabilities, and unsanitary living conditions. In rare instances, nasal myiasis can occur in individuals without predisposing factors, as observed in our case.

Diagnosis requires a comprehensive assessment involving clinical examination and imaging studies. Nasal endoscopy is pivotal for visualizing moving maggots within the nasal cavity, often accompanied by swollen and ulcerated mucous membranes indicative of infestation. Computed tomography (CT) scans aid in evaluating bony erosion and the extent of maggot spread beyond the sinonasal region.[3] Effective management entails a multifaceted approach aimed at larval removal, wound care, and prevention of recurrence. Various substances such as petroleum jelly, liquid paraffin, beeswax, turpentine, and chloroform facilitate larval extraction by

exploiting their oxygen requirements. Prompt intervention, including turpentine application and endoscopic maggot removal, is essential to prevent further tissue damage and systemic complications. Manual extraction remains the primary method, often requiring multiple sessions for complete eradication. In our case, manual extraction, turpentine oil application, saline irrigation, and surgical debridement proved effective in managing the patient.[4]

Understanding the etiology, clinical presentations, diagnostic strategies, and treatment options is crucial for effectively managing nasal myiasis. Particular attention should be given to patients presenting with nosebleeds, as nasal myiasis should be considered among potential differential diagnoses. Preventing recurrence hinges on rigorous nasal hygiene practices, regular wound care, proper sanitation, and measures to control mosquito populations.[5]

CONCLUSION

Nasal myiasis which is a larval infestation more commonly involves individuals who have compromised immune systems or poor hygiene, whereas in our case it was present in a immunocompetent individual with no predisposing factors presented with epistaxis and loss of sensation over left side of cheek. Although rare, nasal myiasis in immunocompetent individuals underscores the importance of maintaining proper hygiene and environmental cleanliness. Additional attention should be given to all patients presenting with epistaxis as nasal myasis being a considerable differential diagnosis. Continued efforts towards public health education and improved sanitation practices are paramount in combating this preventable yet distressing condition.

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