

Nasal Myiasis Causing Palatal Perforation: A Rare Case Report

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Abstract

Nasal myiasis is an opportunistic parasitic infestation of human and animals. Nasal myiasis is the infestation of the nasal cavity by dipterous larvae , most commonly seen in developing countries , where health and sanitation are poor . This presentation reports a case of 70 year female with palatal perforation caused due to nasal myiasis .On rhinoscopic examination , red congested nasal mucosa with maggots were seen . This was confirmed by nasal endoscopy which showed maggots in left nostril. Patient was managed conservatively with antibiotics, removal of maggots and closure of palatal perforation

Keywords: Myiasis, maggots, Palatal perforation

Introduction

Myiasis is parasitic infestation caused by fly larvae growing on host tissue ⁵. Common sites are skin wounds, eyes, nose, nasal sinuses, throat, ear, urogenital tract. Among these sites, Nasal myiasis rarely extend into oral cavity causing palatal perforation ¹ (25%) ¹¹. It is common in tropical countries (India), elderly persons, and low socioeconomic classes. Life-threatening complications are penetration into CNS, meningitis, pneumocephalus, death, with mortality rate of 1.19% ⁶. This case report highlights a rare case of nasal myiasis causing palatal perforation.

Case History:

A 70 years female, came with chief complaints of worms coming out from left nostril and bleeding since three days (Fig 1.a). History of partial left nasal obstruction along with foul smelling discharge and worms coming out of nostril. On rhinoscopic examination by nasal endoscopy showed maggots with red congested nasal mucosa (Fig 1. c). No history of recurrent sneezing, itching, fever, cough or trauma.

On general examination patient was conscious, cooperative and well oriented. On local examination of nose, foul smelling discharge with clots and maggots were present. On oral examination there was 0.7*0.7 mm perforation on left side at junction between hard and soft palate, covered with slough (Fig 1. b).

Patient was hospitalised and put on intravenous ceftriaxone and metronidazole with daily examination and maggots were removed at hourly interval. Patient's overall condition improved and was discharged on oral antibiotics, nasal douching and kept on regular follow ups. Patient was referred to Department of Prosthodontics for obturator for aiding speech and normal oral functions . In the present case , 3-4 months regular follow up showed healing and closure of palatal perforation (Fig. 1.d) .

Discussion:

The term myiasis was coined by F.W. Hope in 1840 and in oral cavity was first described by Laurance in 1909. Infestations of nose can be dangerous because of possibility of penetration into brain, and with

fatality (8%)¹. In present case oral cavity was affected with palatal perforation from nasal myiasis.

Maggots are larval forms of flies, of genus *Chrysomya bezziana*- most common fly responsible for nasal myiasis in India. Other species are *C. megacephala*, *C. phaonix*. Flies are attracted by foul smelling nasal discharge of atrophic rhinitis patients. This fly lays about 200 eggs at a time in necrotic, haemorrhagic or pus filled lesions which within 24 hours hatch into larvae. Larvae are cylindrical, tapering towards both ends, creamy white in color and have backwardly directed hooks⁵. The larval stage is parasitic to humans lasting for six to eight days. Larvae are photophobic and hides deep into tissues and secures a suitable niche to develop into pupa¹. Continuous nasal bleeding and intense halitosis seen in present case was suggestive of tissue destruction caused by toxins released by larvae². Larvae can spread laterally and posteriorly to orbit and paranasal sinuses and in a few cases may spread inferiorly and cause palatal perforation¹. Compromised bodily conditions predispose to infestation. In initial 3-4 days, maggot's causes intense irritation, sneezing, lacrimation and headache with blood stained discharge oozing from nostrils. In the present case, patient showed most of clinical signs and symptoms, active epistaxis with maggots in later stage. Maggots also cause extensive tissue destruction in nose, sinuses and soft tissue of face, palate and orbit. It may cause palatal perforation as in present case⁵.

Clinically classified into two types:

1. **Primary myiasis:** caused by biophagous larvae that feeds on living tissue, common in cattle.
2. **Secondary myiasis:** caused by necrobiophagous larvae which feed on dead tissue, common in humans.

Based on condition of involved tissues:

1. Accidental myiasis- larvae is ingested along with food.
2. Semi-specific myiasis- larvae are laid on necrotic tissues.
3. Obligatory myiasis- larvae affecting undamaged skin³.

In our case, Nasal myiasis was caused by larvae affecting undamaged nasal mucosa

The possible differential diagnosis for palatal perforation due to various aetiological factors are as follows 11.

1. **Infection** - Leprosy, tertiary syphilis, tuberculosis, rhinoscleroderma, leishmaniasis, actinomycosis, histoplasmosis, coccidiomycosis, aspergillosis, deep mycotic infections.
2. **Malignancy** - eosinophilic granuloma, non-Hodgkin lymphoma, salivary gland tumours, mesenchymal tumours, sarcoidosis, amyloidosis.
3. **Autoimmune diseases** - Lupus erythematosus, sarcoidosis, Crohn's disease, Wegener granulomatosis.
4. **Drug related** - cocaine, heroin.
5. **Iatrogenic** - Oroantral fistula, tumour surgery, corrective surgeries, intubation.
6. **Developmental** - cleft palate, impacted canine.
7. **Rarely** - Rhinolith, Psychological problems.

A proper case history, clinical examination, histopathological examination if required helps in differentiating these lesions. Young larvae are difficult to remove as they anchor to tissues strongly by their hooks. So, turpentine oil (which irritates maggots and they come out of deeper nidus) and liquid paraffin (prevents oxygen access to maggots and they die because of suffocation) in form of nasal drops is used. However chloroform and turpentine oil in ratio of 1:4 can also be used⁵.

Endoscopy is done for crust removal, suction clearance and to remove maggots located in deep and inaccessible areas. The patients are given injectable antibiotics like crystalline penicillin, gentamicin as antimeningitis prophylaxis. The recurrence can be prevented by good nasal hygiene, use of mosquito net during sleep⁵.

In case of palatal perforation various surgical procedures, local pediculate flaps, lingual grafts, temporal muscle flaps, oral adipose tissue grafting, free microvascularised flap may be considered. If patient is not willing for surgery, prosthetic rehabilitation with hollow bulb obturator or simple obturator is planned for aiding speech and normal oral functions¹¹. Sometimes wound is left open for secondary healing as in present case³.

Conclusion

Myiasis is rare condition. Cases with palatal perforation even extremely rare. Early diagnosis with treatment is necessary to prevent fatal and rare complications as in the present case¹. This disease can be prevented by controlling fly population, maintaining good oral and personal hygiene, by cleaning and covering the wounds. Also, educating the susceptible population where basic sanitation is neglected⁹

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Fig 1 : a) Extraoral image with erythematous area in left nostril. b) Intraoral image with palatal perforation on left part of hard and soft palate junction with erythematous halo. c) Nasal endoscopy shows presence of maggots in left nostril. d) Follow up after 3 months showing partial closure and healing of palatal perforation