

Evaluation of Nasal and Aural Myiasis in a Tertiary Care Centre

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Abstract: Background: Human myiasis can present as aural myiasis, nasal myiasis, ocular, urogenital etc. Aural myiasis can lead to perforation of tympanic membrane, hearing loss, haemorrhage and rarely the larva migrates into the meninges. Inflammatory reaction at the site of larva position may limit larval development due to mast cell activation and IgE production. Flies are generally attractive to odour of decaying necrotic tissue, which can arise from chronic otorrhea or sinusitis. Methods: The study was conducted at Dr. Ulhas Patil Medical College in the Department of Otorhinolaryngology from January 2020 to January 2022. On examination patients were irritable and blood stained ear discharge was noted in aural cases, while similar discharge from the nose in nasal cases. Results: Over the 2 years study period a total of 200 cases of myiasis were seen. The youngest child seen was 11 months and the oldest 70 years of age. Females (57.89%) were affected more commonly than males (41.48%). Most cases (96.8%) were from a rural background. Aural myiasis occurred from May to December. The peak incidence for both was seen from September to October. Conclusion: Myiasis is a rare and benign manifestation with zero Mortality rate. Meanwhile as it has been hypothesized in otorhinolaryngology that intracerebral myiasis can be caused by the transcanal migration and invasion of fly larvae, there was no association between aural myiasis and intracerebral pathology of any kind observed in the study. The overwhelming majority of cases can be successfully managed without the need for surgical intervention.

Keywords: Myiasis, Aural, Nasal

1. Introduction

Myiasis in otorhinolaryngology can be traced back to ancient Hindu mythological. It was previously called as scholichiasis. The term myiasis was coined by Rew F. W. Hope in the year 1840.

Infestation of live human or other vertebrate host with fly larvae belonging to the insects of order Diptera is called a myiasis. Human myiasis can present as aural myiasis, nasal myiasis, ocular myiasis or other types like genitor - urinary myiasis, anal myiasis, cutaneous myiasis etc. Aural myiasis can lead to perforation of tympanic membrane, hearing loss, haemorrhage and rarely the larva migrates into the meninges.

Obligate myiasis create nasopharyngeal cavities (nasal bots), digestive tract bots and even involve any internal organs of animals and humans²Larva can be deposited into the eye causing causing painful ophthalmomyiasis resembling a foreign body in the eye sensation.

Inflammatory reaction at the site of larvae position is due to mast cell activation and IgE production, it may limit larval development. Flies are generally attractive to odour of decaying necrotic tissue, which can arise from chronic otorrhea or sinusitis. Certain populations are particularly susceptible to infestation, including children younger than 10 years of age and adults with mental or physical disabilities³

Because myiasis require a rare combination of environmental, social, and medical risk factors, it is not surprising that there is limited literature describing it in humans

2. Methods

The study was conducted at Dr. Ulhas Patil Medical College in the department of Otorhinolaryngology from January 2017 to January 2019.

On complete ENT examination: Patient was seen to be irritable with complaints of blood stained ear discharge in aural cases. A similar yet more mucopurulent blood stained discharge from the nose was seen in nasal cases. An animate whitish maggots seen after clinical and otoscopic examinations

After the instillation of turpentine oil with topical xylocaine, maggots were removed manually. After removal perforated tympanic membrane and wide nasal chambers were observed.

All the patients underwent routine blood investigations. In some cases, after removal of maggots a CT of Paranasal sinuses was done in nasal cases

Patients were discharged from the hospital and antibiotic aural drops and nasal drops were advised. Patients were followed up to six months



Figure 1: Nasal Myiasis



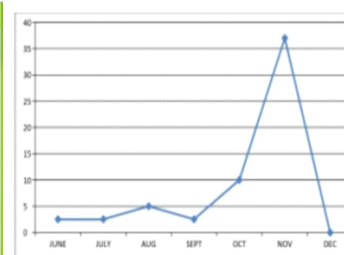
Figure 2: Aural Myiasis

3. Results

Over the 2 years study period a total of 200 cases of myiasis were seen. The youngest child seen was 11 months and the oldest 70 years of age. There was a female preponderance with, Females (57.89%) > males (41.48%).

Most cases (96.8%) were from a rural background. Aural myiasis occurred mostly from May to December. The peak incidence for both was seen from September to October. 176 cases (88%) were nasal myiasis and 24 cases (10%) were aural

Observation	No. of cases	Percentage	Observation	No. of cases	Percentage
Maggots in ear	24	100	Maggots in nose	176	100
Passage of worms	19	88	Passage of worms	158	90
Perforation	18	85	Necrotic tissue	176	100
CSOM	9	45	Foul smell	176	100
Pain	8	44	Atrophic rhinitis	176	100
Bleeding	5	23	Epistaxis	176	100
ASOM	5	23	Pain	142	81
Otitis externa	2	10	Swelling	135	77
Ulcer over pinna	1	9	Past history	15	9
Fever	1	2	Fever	95	54
Swelling of face	1	1	Mentally retard	15	9



Seasonal variation of myiasis, peak incidence from September to October

4. Discussion

Myiasis, a common problem in the tropics, occurs only rarely in the temperate zones⁴. Most commonly the families Muscidae and Sarcophagidae of the order Diptera are responsible⁵. The important genera of these families are Lucilia and Chrysomya are the most common causative flies⁶. Aural myiasis has been reported to occur more frequently in children. In our study, females outnumbered the males with a male/female ratio of 1: 31. The reason for this may be that the male is better cared for in the rural Indian Society (96.8% of our cases were of rural origin).

Myiasis has been reported to have a seasonal variation. In the present study, myiasis was seen from May to December with a peak from September to October.

In aural myiasis pain and discharge has been reported as the presenting symptom in 69 - 100% of cases. In the present study they were observed in 44% and 45% of cases, respectively.

The incidence of a blood - stained discharge reported by others is 31%. We observed it in 23% of our cases.

In a similar percentage of our cases, acute suppurative otitis media was found in association with myiasis. On

In aural myiasis, passage of worms was seen in 88%, ear discharge in 45% and otalgia in 44%. Examination revealed maggots in all cases with perforation of Tympanic membrane seen in 85% of the cases, bleeding in 3%, otitis externa in 10% and ulcer over pinna in 9% of the cases

In nasal myiasis, epistaxis was seen in almost 100%, a foul smell (100%), passage of worms (90%) and pain in the nose (81%). Examination revealed maggots in the nose (100%) with necrotic tissue (100%), a foul smell in 100% of cases and all the cases were suffering from primary atrophic rhinitis. Swelling of nose was seen in about 77% of cases. All patients were treated with turpentine oil with topical xylocaine followed by manual removal of the maggots by nasal or aural Tilley's forceps.

All patients could thus be made maggot free in 2 - 3 days. Broad spectrum antibiotics Ampicillin and Amoxycillin were given in all cases. All patients could be discharged from hospital with in a period of 5 to 7 days. No complications were encountered.

examination, maggots were seen in all cases, and a perforated tympanic membrane was noted in 85%

Otitis externa reported by others is in range of 16 - 35%, while in the present study it was seen in 10%⁷

Compared to adults, nasal myiasis is uncommon in children. This is due to the fact that the most common predisposing condition reported is atrophic rhinitis, which is uncommon in children⁸. The main presenting symptoms observed were epistaxis, passage of worms, pain and swelling of the nose. The same have been reported by others earlier⁹

Dirty stinking wounds attract flies and act as a fertile ground for the development of maggots, as was observed in chronic suppurative otitis media, atrophic rhinitis and ocular wounds. The main stay of treatment has been topical medication to paralyze the maggots followed by their manual removal. The topical agents which can be used: carbolic acid lotion spray, rectified turpentine oil douching, mercury chloride and formaldehyde, a combination of chloroform and turpentine oil in equal parts and ether. Instillation of turpentine oil thrice daily followed by manual removal of the maggots with nasal or aural Tilley's forceps. The patients were made maggot - free in 2 - 3 days. Broad spectrum antibiotics (Ampicillin or Amoxycillin) were used in all cases.

5. Conclusion

In otorhinolaryngology Myiasis is a rare and benign manifestation with zero mortality rate. Meanwhile as it has been hypothesized in otorhinolaryngology that intracerebral myiasis can be caused by the transcanal migration and invasion of fly larvae, there was no association between aural myiasis and intracerebral pathology of any kind observed in the study. The overwhelming majority of cases can be successfully managed without the need for surgical intervention. In our study the mainstay of treatment was topical medication to paralyze the maggots followed by the manual removal. Good hygiene and early detection of myiasis is advocated to be followed to prevent complications.

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Ethical Approval: The study was approved by the Institutional Ethics Committee

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