

Study of Cases of Nasal Myiasis in Bihar

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Abstract

Original Research Article

Myiasis is also known as screw worm. The term myiasis is derived from the Greek word 'myia' meaning fly. A case study of Nasal myiasis was done at P.M.C.H. presenting complain was mainly of Epistaxis, nasal pain headache, passing of maggot par Nose, Nasal obstruction and complain of hard palate perforation.

Keywords: Nasal myiasis, Epistaxis, Seasonal variation.

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INTRODUCTION

The term myiasis is derived from Greek word 'myia' meaning fly was coined in 1840. (Also Known as Screw worm myiasis). It was defined as the infestation of live human and vertebrate animals with dipterous larvae, which at least for a certain period feed on the host's dead or living tissue, liquid body substances or ingested food. It is believed that the fly may even drop its eggs in flight on the skin, wounds, or natural openings of an immobile person. Myiasis producing larvae attach these main parts of the body; cutaneous tissue (furuncular and creeping) body cavities and body organs.

Myiasis is one of the most common problems encountered in outpatient department of ENT in Bihar. Myiasis is caused by two species of dipterous larvae in the family calliphoridae, sub-family chrysomyinae; *chrysomya bezziana* and *cochliomyia hominivorax* can affect nose, ear and very rarely throat Oropharynx, oral cavity and pharynx and tracheostomy site.

Myiasis had been reported for back in Hindu mythology and was regarded as consequence of sin committed by the affected person. It was called scholeniasis or peenash.

The term myiasis was first used by Rex F.W. Hobe in 1840. Myiasis larvae penetrate deeply into a wound of warm blooded animal and feed on living tissue and body fluid. The majority of suffers live in bad hygienic condition and have a source of offensive decaying materials, atrophic rhinitis, chronic sinusitis.

This offensive condition provides a suitable environment for the eggs of the fly to hatch into larve no less than 1.5 cm in length. The eggs may also be deposited in a slight abarasion or crack in the mucous membrane.

MATERIALS AND METHODS

The study included 100 patients of Nasal myiasis with complain of Nasal pain, Epistaxis, headache, passing of maggot par nose, Nasal obstruction and complain of hard palate perforation. All cases were treated in Patna medical College & Hospital. Dept of ENT between September 2017 to December 2018.

All cases were subjected to detailed clinical history, physical examination like sense of smell, Endoscopic examination of nose, pathological examination like blood Sugar, CBC urine examination, radiological examination like x-ray, P.N.S, CT Scan of Nose & P.N.S.

Aim and Objectives

The aim of the study is to know the following character:-

To study infection of myiasis in ENT
It's association with atrophic rhinitis, chronic sinusitis, and foul smell from nose, debilitate person, immunocompromised person.

To plan management of myiasis and its complication
To study complication of myiasis and its prevention

To make comparative study of mass

- Male – Female (Sex distribution)
- Rural – Urban (Area distribution)
- Socio-economic distribution

- Seasonal variation.
- To prevent its incidence after studying the above.
- Socioeconomic class was divided on the basis of income per annum.
- Below poverty line – Family income less than 50,000/- annum.
- Low socioeconomic class – Family income between 60,000 to 1.2 Lakh/ annu.
- Middle socioeconomic class- Family income between 1.2 Lakh to 3 Lakh / annum.
- High socioeconomic class- Family income above 3 lakh annum.

For practical purposes, for the study

RESULTS & DISCUSSION

Table-I 100: cases of Nasal myiasis with symptom

| S.No. | Symptom | Cases (n) | Percentage (%) |
|-------|----------------------------|-----------|----------------|
| 1. | Epistaxis | 100 | 100% |
| 2. | Pain | 92 | 92% |
| 3. | Passage of worm | 90 | 90% |
| 4. | Foul smell | 100 | 100% |
| 5. | Headache | 82 | 82% |
| 6. | Palatal fistula | 4 | 4% |
| 7. | Facial oedema & cellulites | 10 | 10% |
| 8. | Nasal obstruction | 85 | 85% |

As the above table shows that in nasal myiasis epistaxis (100%), foul smell (100%), pain (92%), passage of worm (90%), Headache (82%), Nasal

obstruction (85%), facial oedema and cellulites (10%), palatal fistula (4%) were the prime presenting symptoms.

Table-II: Showing the age distribution in the study group of nasal myiasis

| Age group in years | No. of cases (n) | Percentage (%) |
|--------------------|------------------|----------------|
| 0-20 | 04 | 4% |
| 21-30 | 02 | 2% |
| 31-40 | 09 | 9% |
| 41-50 | 21 | 21% |
| 51-60 | 24 | 24% |
| 61-70 | 35 | 35% |
| 71-80 | 5 | 5% |
| Total: | 100 | 100% |

As the above table shows that, most common age group in which nasal myiasis occur is (35%) in 61-70 years age group followed by 51-60 years age group 24%.

myiasis was observed in persons above 80 years, during the study.

In the other age group incidence of nasal myiasis was as follows 0-20 years (4%), 21-30 years age group (2%), 31-40 years age 9%, in 41-50 years age group 21%, in 71 to 80 years age group 5%. No case of

Most common condition associated with nasal myiasis is atrophic rhinitis (54%) followed by sinusitis (30%). Other condition associated with nasal myiasis is leprosy (4%), Anemia (5%), and other chronic granulomatous disease of nose (7%).

Table-III: Showing the distribution of occupation among the cases of Nasal myiasis

| S. No. | Occupation | No. of cases | Percentage (%) |
|--------|-----------------|--------------|----------------|
| 1. | Farmers | 26 | 26% |
| 2. | Labourers | 20 | 20% |
| 3. | Houses wives | 37 | 37% |
| 4. | Students | 8 | 8% |
| 5. | Business class | 09 | 9% |
| 6. | Office employee | 00 | 0% |
| Total: | | 100 | 100% |

As the above table shows that nasal myiasis in housewives is most common (37%) followed by

farmers. In labourers it is 20%, students (8%) and in business class 9% respectively.

Seasonal variation

The present study of Nasal myiasis in Bihar revealed that peak months of myiasis is June (15%), July (20%) and August (13%). In winter months November and December the percentage was (6%) and in January and February there was no case of myiasis (0%).

According to Singh, Yadav, Jakhhar[15] the peak incidence of myiasis was seen from September to October. Although the above study shows that peak incidence is from September to October but in the present study done by the author, myiasis was most during June, July and August. People here suffering from atrophic rhinitis live very unhygienic condition and very much fond of fruit like mango and litchi in Districts Patna, Vaishali and Samastipur. Many people in summer months depend on fruit like mango for their prime food. The temperature in these months is suitable for the fly to lay eggs and hatching of larvae. These may be cause for the high incidence in June, July and August.

Socio-economic Status

In the present study on 100 cases of Nasal myiasis 90% cases belonged to low socio-economic group and remaining 10% belongs to middle socio-economic class. No case (0%) of myiasis was observed in upper socio-economic strata.

Increased incidence of disease causing Nasal myiasis in people of low socio-economic group might be explained on the fact that these people were more prone to infections as they lived in congested localities and poor sanitation. They could not or did not take early treatment due to lack of consciousness to health and due to poverty as well.

According to Yaghoobi and Sina [11] most patient of myiasis belongs to the poor stratum of society, dwelling in overcrowded premises that are often unsuitable for habitation and in a fly infested environment.

According to Yuca *et al.* [9] myiasis occur in poor, malnourished patient with poor personal hygiene. The present study also agrees that myiasis is more common in low socio-economic group.

Area

In the present series of 100 cases of Nasal myiasis most cases (93%) belongs to rural area and rest 7% case belong to urban area.

According to Singh, Gathwala, Yadav [15] most cases of aural and nasal myiasis 96.8% belonged to rural background.

In the present study too, most patient 93% belongs to rural background, as they are not very much

conscious of their hygiene, sanitation health and habitation were environmental conditions causes the growth of fly.

Symptoms (Nasal myiasis)

In the series symptom of patient with nasal myiasis were epistaxis (100%), foul smell (100%), passage of worm (90%), headache (82%), nasal obstruction (85%), facial oedema and cellulites (10%), palatal fistula (4%) were the prime presenting symptom.

According to Singh, Yadav *et al.* [15] in nasal myiasis main symptom were epistaxis (100%), foul smell (100%), passage of worms (90.9%) and pain (72.72%)

The present study also matches with above statement.

Age: (Nasal myiasis)-

In this series, most common age group in which nasal myiasis occurred was 61-70 years (35%), followed by 51-60 years age group (24%).

In the other age group, incidence of nasal myiasis was 0-20 years (4%), 21-30 years age group (2%), 31-40 years age group (9%), 41-50 years (21%), 70-80 years age group (5%) respectively.

In the study of Jain, Raizada *et al.* (1996)[1] it was found to be common in age group 61-70 years (38.5%). In the present study also nasal myiasis was found to be most common in 61-70 years age group (34.2%).

Sex: (Nasal myiasis)

In the present series, nasal myiasis was found to be more common in females (58%) than comparison to (42%) in males.

Nasal myiasis is prevalent in female sex in Bihar, because in female due to low literacy, they have less health awareness and also most common predisposing condition of nasal myiasis is atrophic rhinitis and atrophic rhinitis is common in females.

Associated Conditions (Nasal myiasis)

In this series the common condition associated with nasal myiasis is atrophic rhinitis (54%) followed by sinusitis (30%). Other condition associated with nasal myiasis is leprosy (4%), anaemia (5%), syphilis (0%), and other chronic granulomatous disease (7%). In series of Sharma, Dayal *et al.* [14] atrophic rhinitis is the commonest predisposing factor for these conditions.

Foul smell is very characteristic of atrophic rhinitis. The foul smell in atrophic rhinitis is the result of progressive atrophy of the mucous membrane and necrosis of the underlying bone of the choanae. The aetiology of atrophic rhinitis is still unknown [13]. All

the cases observed in the series associated with nasal myiasis had bilateral affection.

It is hypothesized that beside other factors, poor nutrition was undoubtedly a factor in the development of the condition. Bernat [21] considers that atrophic rhinitis is an iron deficiency disease. In the present study also the patient with anemia forms the (5%) of associated condition with nasal myiasis.

In the study of Jain, Raizada *et al.* [1] maxillary sinusitis was found in almost all cases. Myiasis in maxillary sinusitis is also reported by Zhang L., Yang C. *et al.* in [20].

In the study of Husain, Malviya *et al.* [8] found that infestation of the nose with larvae of certain flies can occur in leprosy patient.

In the study of Thami, Baruah *et al.* [19] found that nasal mucosal involvement is a constant feature in lepromatous leprosy, granulomatous infiltration of nasal mucosa and consequent sensory loss may result in atrophic rhinitis or painless ulcer, which may be complicated by epistaxis and myiasis in long standing neglected cases. The present study is also in agreement with the above statement.

Occupation: (Nasal myiasis)

The present study shows that nasal myiasis was most common in housewives (37%), followed by farmers (26%) and labourers (20%) respectively. In other occupation the percentage was as follows among students (8%), Business class (9%) and office employee (0%).

In the series of Hakimi and Yazdi *et al.* [12], myiasis occurs in the areas in which people live close to livestock, mostly in rural areas and villages. In the present case, also infestation occurs in rural areas and villages housewives. Nasal myiasis occurred in farmer's (24.2%) because of the patient stayed outdoors near livestock.

Complication

In cases of nasal myiasis 4 cases (4%) were admitted with complication of myiasis i.e. palatal fistula, due to erosion of palate by myiasis larvae. Two cases develop palatal fistula during the treatment at hospital.

Most of patients of myiasis belonged to the rural back ground, as they could not afford early treatment due to lack of consciousness and paucity of money. Usually the diagnosis and treatment is delayed due to late reporting to the PHC, (Primary health center), thus causing more complications.

Management of cases of Nasal myiasis

Treatment

- Removing the maggot manually after dilute turpentine nasal douche.
- Nasal myiasis may also be treated by packing nasal cavity with mixture liquid paraffin and turpentine oil (1:4), which stifle the larvae. The nasal cavity is then rinsed with an alkaline douche and maggot is removed.
- Systemic antibiotics, pain killer (NSAID) and Haematinics given.

The removed maggot should be kept in boiling water so they die immediately otherwise they start crawling everywhere.

The patient is advised to use mosquito net in the night while sleeping to prevent further laying of eggs by fly [1].

Endoscopy in Treatment of Nasal myiasis

The maggot causes extensive necrosis, sloughing and destruction of intranasal tissue and reach to deep and inaccessible areas of the nose and paranasal sinuses. In such a situation removal of maggots is difficult by manual extraction and several sittings are required. To overcome this problem nasal endoscope is being used for removal of maggot under direct vision. In comparing both methods, nasal endoscopic (procedure is found to be superior to the manual extraction method for removal of maggots. Thus quick and complete eradication of myiasis is possible before the maggot cause irreparable damage to the intranasal tissues [16].

Management of Complication

Palatal fistula

Palatal fistula develop due to nasal myiasis, management done was conservative. All six patients advised palatal obturator was fitted on the hard palate, so it blocks the communication between oral cavity and nasal cavity and there was no complain of nasal regurgitation of fluid and food and voice was good with the use of palatal obturator.



Fig-1: Fistula of Hard Palate



Fig-2: Closer View

CONCLUSIONS

In the present study undertaken by the author the following conclusions were drawn:

- Myiasis of nose is common in Bihar.
- Myiasis is common in low socio-economic group strata, living in rural area. The peak month of myiasis is September to October.
- Nasal myiasis was found in 0-80 year's age group. Female population are more affected by nasal myiasis as compared to male and common predisposing associated condition of nasal myiasis is atrophic rhinitis and sinusitis. By occupation is common labourer, housewives and farmers of rural area.

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