**CASE REPORT**

**Nasal Expulsion of Rat-tailed Maggot: The First Reported Case in Sudan**

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**ABSTRACT**

**Background**

Rat–tailed maggot is the larva of the drone fly *Eristalix tenax*. The larva is usually about 25 mm long with a hindly located slender extension of a similar length that is used for breathing. The maggot is commonly laid in polluted water where it grows and later pupates. It may accidentally infest humans leading to accidental myiasis. It commonly infests the digestive tract but rarely the respiratory system.

**OBJECTIVE**

The aim of this study was to identify and report the nasally expelled maggot.

**Materials and Methods**

Thirty three years old Sudanese man in Nyala (South Darfur-Sudan) had irritating symptoms of the upper respiratory tract for about one month. He expelled a maggot during a bout of sneezing through his left nostril. His condition dramatically improved after that in a week time. The expelled maggot was preserved in10% formol saline and transported to Khartoum for identification.

**Result**

The maggot was identified by two expert parasitologists and an entomologist as a rat-tailed maggot; larva of *Eristalix tenax*. It was identified by its slender tube-like, three segmented, telescoping breathing siphon located at the posterior end.

**Discussion and Conclusion**
As far as the published medical data was concerned this was the first case of nasal expulsion of rat-tailed maggot reported in Sudan. The environmental conditions in Nyala were quite suitable for such maggots. Moreover, lack of safe water for domestic use and human behavior in the area might assist in occurrence of such an infestation. I concluded that in spite of the rare reporting of this myiasis, the favorable conditions for the maggot are still there. Improvement of environmental and personal hygiene in addition to provision of safe water for domestic use can lead to control of such myiasis.

**Keywords:** Rat-tailed maggot, Nasal myiasis, Drone fly, Hover fly.

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**INTRODUCTION**

Myiasis is the infestation of the body tissues or cavities of humans and vertebrates with larvae of arthropods of the order Diptera (the two-winged true flies) (1). The larvae are commonly referred to as maggots (1,2). According to the infesting maggots, myiasis can be classified as obligatory (specific) when the fly needs a host for larval development (1). The second type is the facultative (semi-specific) myiasis where the maggot can develop freely or in a host if it is available. The last one is the accidental (non-specific) myiasis where the maggot is normally free living but if accidentally contracted by a host, myiasis may occur (2). Another system of classification of myiasis is according to the anatomical site infested (1, 2,3). But the two systems of classification are commonly combined in naming the type of myiasis (1, 2,3).

The rat-tailed maggot is the larva of *Eristalix tenax*, a fly which is known by several names such as drone fly, hover fly and flower fly with a resemblance to the honey bee (1). The drone fly deposits its eggs in damp atmosphere rich in decaying organic materials where they hatch releasing rat-tailed maggots. Commonly the polluted water, semi-fluid animal faeces and rotten food are the ideal breeding places for the fly (1, 5). The larva eats any decaying organic material that it finds, and then crawls out of the damp atmosphere to a more dry area to pupate and becomes an adult drone fly (1, 5). If the eggs or the larvae enter human body by ingestion or through other natural orifices, accidental myiasis may occur (3, 4).

**CASE REPORT**

Thirty three years old Sudanese man who used to work as a mechanic in Nyala (South Darfur-Sudan) complained of coryza, frequent sneezing, pervasive headache and itchy throat for about one month. Sometimes he experienced bouts of cough and dyspnoea. During this period he used different medical prescriptions including antihistamines, corticosteroid and antibiotics without significant improvement. Lastly during a bout of sneezing he expelled a polyp-like mass through the left nostril (figure). The expelled mass was fleshy and composed of a grey stout cylindroid part about 24 mm long and (6x4mm) across. There was a slender and distally tapering unipolar
tail-like extension that measured 20 mm long. The whole structure resembled a small rat. It was covered with a thin layer of mucus but there was no evidence of macroscopic blood. It was preserved in 10% formol saline and transferred to Khartoum where it was identified by two expert parasitologists and an entomologist as a rat-tailed maggot of *Eristalix tenax*. The patient was put on a course of Cephalexin capsules as a prophylactic measure. He came one week later for follow up where he said that his symptoms completely disappeared and no other maggot was expelled.

**DISCUSSION**

Nasal expulsion of rat-tailed maggot is a rare occurrence. As far as the published medical data is concerned; this case was the first one to be reported in Sudan. Furthermore, by reviewing the published international medical literature I found only one report of rat-tailed maggot nasal myiasis by M Salimi et al in Iran (5). They reported a case of nasal expulsion of rat-tailed maggot by 14 years old girl (5). She lived in environmental conditions similar to the condition of the case in this study. The first case of rat-tailed maggot myiasis in Africa was reported by Hira
but the disease was intestinal myiasis (6). Rectal passage of rat-tailed maggot had been reported in different areas worldwide (7,8). The environmental conditions of M Salimi et al patient were quite similar to that of my patient (5). The patient in this report was from an area where the environmental hygiene is poor. Moreover the lack of sufficient safe water usually compels the people to utilize any water available regardless of its suitability to the domestic use. Use of contaminated water for variable purposes put the people at the risk of such an infestation.

Human activities (religious or otherwise) that necessitate water sniffing may also predispose the person to nasal myiasis if the water is contaminated. Domestic animals are integral part of human life in that area and animals may be accommodated in the same human dwellings. The drone fly may find the semi-fluid animal faeces as a suitable habitat where it can breed. This situation may predispose the people in the vicinity to larval infestation. The people generally in Sudan and especially in that area preserve some meat outside the refrigerator so as to use it in food preparation when it dries up (sharmoot).

The exposed meat may rotten and flies as the drone fly can lay their eggs on it which leads to myiasis if consumed. Poor knowledge about the hazards posed by such flies definitely contributes to the epidemiology of myiasis. In spite of the scarcity of the reports of rat-tailed maggot nasal myiasis, in my opinion the condition is not so rare but the problem is that of under diagnosis and reporting in Sudan. Poor environmental and personal hygiene coupled with the lack of essential health knowledge are the main risk factors in the occurrence of such preventable diseases as myiasis.

Acknowledgement

I am very grateful to Professor El Rashid EL Amin in the University of Sciences and Technology and Dr. Mohammed El Taieb in the National Health Laboratory for their valuable help in identifying the specimen. I extend my sincere gratitude to Dr. Anwar Kordofani in the Faculty of Medicine, University of Khartoum and the rest of the Pathologists who facilitated for the specimen demonstration and discussion in the Department of Pathology.

REFERENCES


