Research Note

Phormia regina (Meigen) (Diptera: Calliphoridae), a causative agent of urogenital myiasis of an infant in Karachi, Pakistan

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Abstract: During April 1983 a case of urogenital myiasis caused by Phormia regina (Meigen) in a 25 days old male infant is recorded. The infant had been circumcised by a native quack about 10 days before. This case is the first verified record involving Phormia regina from Karachi, Pakistan. The salient morphological features of third stage larvae involved have been studied.

Introduction

Myiasis is a well recognized condition that is produced by dipterous fly larvae when they invade the organs or tissue of animals or man. Several authors have recounted cases of urogenital myiasis from various countries caused by maggots of facultative and obligatory parasitic species of flies. Chevrel (1908) reports that Fannia canicularis (Linn.) is most frequently found in urinary myiasis, although Fannia scalaris (Fab.) and Musca domestica Linn. have been encountered. Leon (1921) from Romania, Mumford (1926) from England, and Yatzenko et al. (1934) from Ukraine described similar cases. From Congo Fain et al. (1959) recorded a case when the Chrysomya bezziana Vill. had infested the vulva of an African woman. Patton (1922e) described a case of an Indian body incriminated C. bezziana Vill. as a cause of this disease. Patton and Evans (1929) described a case of urogenital myiasis caused by Psychoda albipennis Zett., in a boy. Chin (1959) recorded another case caused by Psychoda sp. in a male child from China. Piophila casei (Linn.) as a cause of a case of urinary myiasis in Egypt was described by Hilmy (1954). Phormia regina (Meigen) is involved in the present case of urogenital myiasis of a 25 days old male infant from Karachi, Pakistan. This species is involved in wound myiasis in the New World, but is not yet known as a myiasis producing fly from the Old World (Zumpt, 1965). The present case is the first verified record involving Phormia regina in urogenital myiasis from this region.

On April 14, 1983 Dr. S. N. Islam and Dr. Ashique Ali in P.A.F. Hospital, Karachi sent some fly larvae to laboratory of Medical Entomology, Department of Zoology, University of Karachi for rearing and identification. These were identified as the third stage larvae of black blow-fly, Phormia regina (Meigen) and this determination was made by the authors by following the key characters given by James (1947), Ishijima (1967) and Smith (1973).

Case Report

"Male infant S. A. Zaidi was born in Karachi P.A.F. Hospital on March 10, 1983 and left the hospital in normal condition on March 18, 1983. According to the parents the infant was circumcised about a week later by a native quack. The infant was brought again to the P.A.F. Hospital on April 5 and at that time the genital organ of the infant was filled with a large number of maggots. The scrotum and pubis were oedematous and the soft parts around the end of the penis destroyed. An ulcer at the end of the penis was also full of maggots. In the beginning these maggots were manually removed daily for three days, but unfortunately at the time of removing by the fine forceps they rapidly moved deeply and
were not accessible easily. During this attempt only 36 larvae were removed. On April 8, the whole organ was irrigated by liquid paraffin at intervals of 3 hours continually for five times. At the first attempt 85 and in second attempt only 16 maggots wriggled out of the wound. Later on not a single maggot was recovered. In all 137 larvae were recovered, during the treatment. After this the infant was given treatment for healing of the wound, and fortunately within few days the infant was rapidly and completely recovered.

The larvae preserved in ethyl alcohol with a few drops of glycerine, and balsam mounted slides of third stage larvae from this case have been deposited in the collection of Medical Entomology Section, Zoology Department, University of Karachi, Pakistan.

The following are the chief characteristics of full grown larvae of *Phormia regina* (Meigen) for readily identification by physicians.

**Recognition characters**

The third stage larva is creamy-white, becoming yellow with maturity. Body length 15 mm (10 specimens). Larvae maggot-like, pointed at head, truncate posteriorly. Spinulations at anterior margins on 2nd to 10th segments encircled completely, but those of 11th and 12th segments restricted to lateral and ventral surfaces. Posterior margins on 6th to 10th segments confined to ventral and lateral surfaces, that of the 11th segment encircled completely. Dorsal spines absent on posterior margin of segment 9th and 10th; spiracular margin surrounded by 10 tubercles which are fleshy and conical; inner and outer dorsal and inner ventral tubercles equal in size, middle dorsal tubercle knob-like. Distance between both inner dorsal tubercles approximately equal to the distance between inner and outer dorsal tubercles. The posterior spiracular cavity concave. Spines on anal protuberances not V-shaped.

Anterior spiracle (Fig. 1). A pair of distinct spiracles, one on each side of the second segment is located. They are fan-shaped with wide felt chamber terminating in 10 finger like processes in a single curved line and spread fan wise and well separated. Each has a small opening in the end surrounded by a thick chitinous rim; felt chamber nearly one-and-half times wider than long.

Posterior spiracles (Fig. 2). The stigmal plates are prominent; subrounded, medium sized. Peritreme incomplete; moderately broad and not enclosing button. Peritreme scalloped with projections between the slits. Button poorly pigmented but not causing a sudden bulge in the outline of the plate; spiracular slits short and spindle shaped, directed towards median line. The two spiracles separated from each other by a dis-

![Fig. 1 Anterior spiracle.](image1)

![Fig. 2 Posterior spiracles.](image2)
tance about two third the diameter of the spiracle.

Cephalopharyngeal sclerite (Fig. 3). Medium sized and heavily pigmented. It consists of three parts on each side. Posterior part is pharyngeal sclerite. It has a deep incision at the posterior end forming the dorsal and ventral cornua. Ventral cornua remarkably short and about a half length of dorsal cornua. Accessory sclerite wanting. Hypostomal sclerite small and short. Parastomal slightly curved upwards. Anteriorly at the narrow part below the parastomal the pharyngeal sclerite articulates with the hypostomal sclerite. This is small heavily chitinized with a projecting ventral portion. In front of this and articulated with its anterior end are the oral hooks. These are moderately wide, strongly chitinized, not very sharply curved. Basal piece of oral hooks four cornered. The dental sclerite is a small thick part at the base of the oral hooks on the ventral side.

**Discussion**

An unusual case of urogenital myiasis caused by the larvae of the black blow-fly, *Phormia regina* (Meigen) is reported in a male infant. This appears to be the first case of this type in the world. A search through the literature reveals no previous cases of urogenital myiasis attributed to black blow-fly. It is a common sheep maggot and normally the eggs are deposited in agglutinated masses of varying numbers. The larvae are normally saprophagous and breed in large numbers in carcasses of animals. The development is rapid and the total period from egg to adult ranging from 10 to 25 days. In the presently reported case it seems that the eggs had probably been laid directly in the wound at the time of circumcision or they had been deposited on a dirty sheet in the bed or napkins, since the foul odour of these clothes attract the female flies.

Unfortunately the exact number of maggots recovered is not known. However, 137 were recovered during treatment. It is known that some were recovered prior to the admission of the patient in the hospital.

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**References**


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摘   要

パキスタンのカラチにおいて
新生児の泌尿生殖器ハエ症の
原因となったクロキノバエ

1983年4月に生後25日目の男児のクロキノバエ幼虫による泌尿生殖器ハエ症の1症例が見出された。この子供は来院の約10日前に現地人の民間療法師によって割礼を受け、採取した三齢幼虫の顕著な特徴から、これらの幼虫がクロキノバエであることが確認された。クロキノバエによる泌尿生殖器ハエ症は文献上世界で前例がなく、パキスタンのカラチからのクロキノバエ幼虫によって起された症例が世界最初の確実な記録である。クロキノバエ幼虫は本来雑食性で、動物死体に大発生する。発育は非常に速く、約10日から25日で卵から成虫になる。この症例ではたぶん雌が傷に直接か、または悪臭に誘引されて、よくあるシーツなどに卵塊を産みつけたと思われる。残念ながら寄生幼虫の正確な数は不明であるが、治療中に137匹の幼虫が見出され、なお入院前に何匹かの幼虫が発見されている。