Wound Myiasis Caused by *Lucilia sericata* (Meigen) (Diptera, Calliphoridae) in Al-latifya district, Baghdad, Iraq

MS Abdul-Rassoul, MO Al-Ani, SF Abbas, AA Shubar, AT Mesha and B Mohammad

Abstract

This study reports nine cases of wound myiasis that were caused by the green bottle fly, *Lucilia sericata* in domestic herbivorous animals (sheep and cattle) during November 2016 in Latifiya District, Baghdad. The cases were recorded by the 14th July Veterinary Dispensary. Specimens of 216 larvae were collected from the wounds and the identification was made by the first author as *Lucilia sericata*. Four of the wound cases were caused by barbed wires, two by dog bites, one by trauma and others through umbilicus of the new born calf. The locations of the wounds were distributed between fatty tail, umbilicus, thighs and eyes. This study reports the first outbreak of this fly causing myiasis in Iraq.

Keywords: Diptera, Calliphoridae, *Lucilia sericata*, wound myiasis, Iraq

1. Introduction

Myiasis is the infestation of tissues or organs of living human and vertebrate animals. It results from dipterous larvae which feed for a certain period of their life on; the dead or living tissues, liquid substances, and digested food of their host [1]. The dipterous larvae causing myiasis belongs to the families: Muscidae, Sarcophagidae, Calliphoridae, and Oestridae [2]. *Lucilia sericata* (Meigen, 1926) (formerly *Phaenicia sericata*), also known as the common green bottle fly [3], is one of the most common species in the family Calliphoridae found on carrion, feces and garbage [3]. This species was originated in Europe [4] and it is a cosmopolitan species that causes myiasis in the temperate and tropical regions of the planet [5-6]. This species is widely distributed in the Palaearctic region including the Middle Eastern countries such as: Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Saudi Arabia, Syria, and Turkey [7]. The larvae of *Lucilia sericata* are well-known as facultative ectoparasite in animals mainly sheep, cattle, horses, cats, dogs, and humans [1, 8-9]. The first report of myiasis caused by *Lucilia sericata* was in 1826 by Magein when he gathered larvae from the eyes and the mouth of a human patient [6]. This species is also reported as causative agents of primary cutaneous myiasis in sheep particularly in the UK, South Africa, and New Zealand [5]. Thus, it can cause significant losses in animals and production [10].

*Lucilia sericata* was first recorded in Iraq by Patton in 1920 [11]. Khalaf, 1957 reported this species under the name *Phaenicia sericata* (Meigen, 1826) [12]. Other authors who reported it in Iraq are: Hussain, 1963[13]; Derwesh, 1965[14]; Khalaf and Al-Omar, 1974[15]; Abdul-Rassoul, 1976[16]; Abul-hab, 1980[17]. The previous mentioned records did not indicate the medical importance of *Lucilia sericata* as a myiasis agent. However, the first case of the old world screwworm, Chrysomya bezziana (Villeneuve, 1914) which was reported in Iraq by (Abdul-Rassoul et al., 1996) [18] and (Al-Ani, 1997) [19] had brought more attention to its importance. Since then, many cases of animal myiasis involving facultative myiasis caused by *Lucilia sericata* have been reported in this country by Aziza et al. (1999) [20] and Al-Halfay and Mahdi (1999) [21]. This paper describes the first myiasis outbreak caused by *Lucilia sericata* in Baghdad province during November 2016.

2. Materials and Methods

Nine cases of wound myiasis were collected by the staff of the 14th July veterinary dispensary from different villages in Latifiya district during November, 2016. Latifiya is an Iraqi town located about 50 km. south of Baghdad.
Specimens of 216 larvae were removed by forceps from the wounds, killed by hot water, and were preserved with 70% ethyl alcohol and transferred to the veterinary Entomology unit of the central veterinary laboratories, Directorate General of Veterinary Services, Ministry of Agriculture, Iraq, for identification. The identification was made by the first author depending on the following characters as in both Zumpt, 1965 [1] and Spradbery, 1991 [22]: the shape and size of developed larvae, cephalopharyngeal skeleton, form of anterior spiracles, and the posterior spiracles.

### 3. Results

Nine cases of wound myiasis as shown in (Table 1) were submitted to the veterinary dispensary in Latifiya district southern Baghdad. The causative agent had been determined as *Lucilia sericata*. Four of which were in the anal-perineum area (breech) fatty tail of sheep. In these cases, four out of nine wounds were caused by barbed wires, two by dog bites, one by trauma, and the others through umbilicus of the new born calf. The collected maggots were in the third-instar larvae, they appear white pale in color with an average length of 9-11 mm, and width of 1.5-2.0 mm. Body of the larva was tapering anteriorly and a truncated posteriorly, and composed of 12 segments. Anterior spiracles were located at the anterolateral part of the body and are fan-shaped with 6-8 lobes (Fig.1). Posterior spiracles located at the posterior end.

The *L. sericata* larvae are similar to those of *Calliphora* spp. and *Lucilia cuprina* but differ from the *Calliphora* spp. lacking the accessory oral sclerite between mouth hooks (Fig.2). Also, they differ from *Lucilia cuprina* by having the posterior spiracles pear-shaped (length greater than width), peritreme thinner and narrower, slits longer and thinner (Fig.3).

#### Table 1: Wound myiasis Caused by *Lucilia sericata*

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Town</th>
<th>Date of collection</th>
<th>Animal</th>
<th>Total herd</th>
<th>Total affected</th>
<th>Clinical symptoms</th>
<th>Wound area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Al-latifiyah/Shishar</td>
<td>25/3/2017</td>
<td>Ewe/2y</td>
<td>25</td>
<td>1</td>
<td>Bleeding wound</td>
<td>Fatty tail</td>
</tr>
<tr>
<td>2</td>
<td>Al-latifiyah/canal 2</td>
<td>26/3/2017</td>
<td>Lamb/37d</td>
<td>8</td>
<td>1</td>
<td>Bleeding wound</td>
<td>umbilicus</td>
</tr>
<tr>
<td>3</td>
<td>Al-latifiyah/canal 2</td>
<td>26/3/2017</td>
<td>Calf/8d</td>
<td>5</td>
<td>1</td>
<td>Bleeding wound</td>
<td>umbilicus</td>
</tr>
<tr>
<td>4</td>
<td>Al-latifiyah/km31</td>
<td>26/3/2017</td>
<td>Ram/2y</td>
<td>14</td>
<td>1</td>
<td>Bleeding wound</td>
<td>Fatty tail</td>
</tr>
<tr>
<td>5</td>
<td>Al-latifiyah/al-Haq</td>
<td>23/3/2017</td>
<td>Lamb/7m</td>
<td>42</td>
<td>1</td>
<td>Bleeding wound</td>
<td>Thigh</td>
</tr>
<tr>
<td>6</td>
<td>Al-latifiyah/km25</td>
<td>23/3/2017</td>
<td>Calf/1y</td>
<td>40</td>
<td>1</td>
<td>Bleeding wound</td>
<td>Eye</td>
</tr>
<tr>
<td>7</td>
<td>Al-latifiyah/canal 4</td>
<td>26/3/2017</td>
<td>Sheep/9m</td>
<td>35</td>
<td>1</td>
<td>Bleeding wound</td>
<td>Fatty tail</td>
</tr>
<tr>
<td>8</td>
<td>Al-latifiyah/km31</td>
<td>26/3/2017</td>
<td>Lamb/2m</td>
<td>22</td>
<td>1</td>
<td>Bleeding wound</td>
<td>Fatty tail</td>
</tr>
<tr>
<td>9</td>
<td>Al-latifiyah/bzaiz</td>
<td>27/3/2017</td>
<td>Calf/1y</td>
<td>10</td>
<td>1</td>
<td>Bleeding wound</td>
<td>Thigh</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>201</strong></td>
<td><strong>9</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 4. Discussion

Attraction to wounds of living host is a characteristic of many Calliphoridae which is a habit evident in many areas in which *Lucilia sericata* occurs [23]. As a follow up of myiasis cases caused by *Chrysomya bezziana* in veterinary practice in Iraq through a large project, veterinarian in the field must send a sample of larvae from the surface and deep of the wounds to identify the causative agent. Therefore, these nine cases mentioned above have been sent to the laboratory. These cases were initially suspected to be as *Chrysomya bezziana*, however, the identification by the specialist showed that they were *Lucilia sericata*. So, the acute identification is important.
to differentiate the causative agent.

Four of the cases occurred in the anal-perineum and two other cases were on the thigh near the fat-tail of the sheep. In our finding, those six cases were the same as those observed by Wall and Lovatt [24] which were caused by *Lucilia sericata* causing sheep strike myiasis usually observed near the rear of the sheep where it is contaminated with feces and urine.

We asked the veterinary staff in this area to educate the farmers to get rid of barbed wires in order to decrease the exposure of these animals, especially sheep, from getting wounded. Also, we advised the farmers to protect their animals from getting bitten by feral dogs.

**References**