

What's in a child's ear? The first case of otomyiasis by *Sarcophaga argyrostoma* (Diptera, Sarcophagidae) and review of the literature

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Introduction

Within the family Sarcophagidae, myiasis-causing larvae of the species belonging to the genus *Sarcophaga* are rarely identified at the species level as identification only by microscopy can be challenging or even impossible. Therefore, cross-checking of the morphological and molecular data is highly recommended (Giangaspero et al. 2017, Sci World J. 2017:9064531). We describe a rare case of aural myiasis in a child and review the literature on otomyiasis caused by members of the Sarcophagidae family in humans and animals.

Materials and methods

A 1-year-old girl living in the countryside of Cerveteri town (Roma) was presented to the Emergency Room of Bambino Gesù Pediatric Hospital in Rome after experiencing nocturnal crying, pruritus and serosanguinous discharge from the right ear for about four days. The girl was subjected to ear cleaning with physiological solution, during which a larva was recovered. Ear examination revealed acute otitis media in the left auditory canal. The larva was sent for identification to the Parasitology Unit of the University of Foggia, Italy, where it was microscopically observed and tested using a PCR protocol targeting a 710-bp gene fragment of the *cox1* gene-based DNA barcode with sequencing. The patient was treated with an antibiotic (Cefixime) for five days, and fifteen days later, the otitis had successfully resolved. Relevant research papers were searched and selected through the most common electronic databases.

Results and conclusions

Morphological features only enabled us to suspect *Sarcophaga (Liopygia) argyrostoma*. Given the overlapping characters with *S. (L.) crassipalpis* and *S. (L.) cultellata*, molecular investigation was needed for confirmation. The BLAST analysis showed 100% homology with *Sarcophaga argyrostoma* (Diptera: Sarcophagidae) (AC: MZ189703). Worldwide, 34 (33 in humans, one in a goose) previous cases of otomyiasis caused by Sarcophagidae members are recorded: 18/34 (52.9%) by *Wohlfahrtia magnifica* and 7/34 (20.6%) by three species of *Sarcophaga*. In 9/34 (26.5%) cases, the larvae were only identified at the genus or family level. In 23/33 (69.7%) human cases, children were involved. This is the first report of human otomyiasis caused by *S. argyrostoma* in a child and the first supported by molecular analysis for identification.