

Review Article

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A Prevalence Study of Ectoparasites on The Long-Eared Hedgehog (*Hemiechinus Auritus*) in Sohag Governorate, Egypt

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Abstract

Samples of long eared hedgehog *Hemiechinus auritus* were collected from Sohag area, in the spring 2019. The study shows that the long-eared hedgehog that was infected by 2 ticks, *Rhipicephalus Turanicus*, *Hyalomma* sp., and one of fleas, *Leptopsylla segnis*.

Introduction

Hedgehogs are small, nocturnal and spiny-coated mammals which are found in synanthropic environments and they are kept as pets by some people [1,2]. As hedgehogs feed on insects, worms, centipedes, snails, mice, frogs, lizards and snakes, they are considered as useful animals for natural ecosystems and are in the protected species list [1]. They are ideal hosts for ecto and endoparasites, because they have active foraging behavior and do not groom themselves [3]. On the other hand, these animals can serve as reservoir for some zoonotic pathogens. Hedgehogs acquire some pathogens through tick or flea bites and are involved in the endemic cycle of these pathogens. Keeping in mind that Hedgehogs are known as potential host for some variants of *Anaplasma phagocytophilum*, tick-borne encephalitis virus (TBEV), *Rickettsia felis*, *Eucoleus aerophilus*, causative agent of pulmonary infection

which resembled a bronchial carcinoma and at least four species of Lyme spirochetes [2-4]. The hedgehogs have become popular in recent years among pet owners and these animals have benefits and potential hazards for their owners. Some studies have been conducted on ecto and endoparasites and some other on zoonotic pathogens in hedgehogs around the world [2,3].

Materials and Methods

This study was carried out in the Sohag District at the Village of Awlad Naseer - Naja Tarkhan at the north of the Sohag Governorate about 2 km. Many samples were collected of long eared hedgehog *Hemiechinus auritus* during the spring 2019 by some metal traps and direct catching during the night (Activation period). The live animals were brought to the laboratory at the Agricultural Animal Laboratory at the Faculty of Agriculture, Sohag University.



Figure 1: Long-eared hedgehog (*Hemiechinus auritus*) in the Agricultural Animal Laboratory at the Faculty of Agriculture, Sohag University.

In the laboratory, live hedgehogs were anaesthetized by using ether or chloroform in a glass container. The body surface of each hedgehog was carefully searched for ectoparasites. The collected arthropods were preserved in 70% alcohol in internally labeled bottles (Figure 1). Using a stereoscopic microscope, they were then identified to species level according to the identification keys as well as by comparison with voucher specimens [5].

Results and Discussion

From this study results (Table1) shown a total of long-eared hedgehogs were infected by 2 ticks, *Rhipicephalus Turanicus*, *Hyalomma* sp., and one of fleas, *Leptopsylla segnis*. These animals can serve as reservoir for some zoonotic pathogens. Hedgehogs acquire some pathogens through tick or flea bites and are involved in the endemic cycle of these pathogens. And while the hedgehogs have become popular in recent years among pet owners and these animals have benefits and potential hazards for their owners. So, we need more studies are needed to find out hedgehog ectoparasites in other parts of Egypt.

Table 1: Detailed data for ectoparasites found on examined hedgehogs in the current study.

Ectoparasites	Found/ Absence	Species
Lice	-	
Fleas	+	- <i>Leptopsylla segnis</i>
Mites	-	
Ticks	+	- <i>Rhipicephalus turanicus</i>
		- <i>Hyalomma</i> sp

+ = Found

- = Absent

Our results similar with:

- Nematollahi, et al. [6] In Iran, they concluded the hedgehogs harbored the adults of two ixodidae tick species belonging to two genera, namely *Hyalomma excavatum* and *Rhipicephalus turanicus* as well as two flea species of two genera, namely *Ctenocephalides canis* and *Leptopsylla segnis*.
- Jassim SY [7] In Iraq, found that a long-eared hedgehog was infected by *Rhipicephalus turanicus*, this shows that

Rhipicephalus especially *R. turanicus*. It is widely found in wild animals, especially on hedgehogs with high rate.

Conclusion

The results of the present study revealed that there is an infestation of ectoparasites in hedgehog and due to zoonotic importance of the transmission of some important pathogens; more studies are needed to find out hedgehog ectoparasites in other parts of Egypt. Also, our results suggest that pet owners especially those keep hedgehog should be aware about the hazards that may pose by these animals. Therefore, taking care including washing hands after handling them and using pesticides for eliminating ectoparasites will reduce the risk of catching zoonotic diseases from their hedgehogs.

Acknowledgement

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Conflict of Interest

No conflict of Interest.

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