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# Trombiculosis in 5 cats from the North-East of Romania- a case report

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Trombiculosis represents a parasitic disease characterized by pruritic, non-contagious dermatitis, caused by the larval forms of mites of the Trombiculidae family. Commonly, they are called harvest mites, which typically refers to the species *Neotrombicula autumnalis*. Although little studied, trombiculosis is a common disease, with cases reported most often in cats, but also in other domestic mammals (dogs, cows, sheep, horses, rabbits), as well as in birds, reptiles and amphibians. Our study aims to bring a new report of this disease, by describing the case of infestation during the autumn season with *Neotrombicula autumnalis* in 5 cats from Bacău city, sharing the same household and having outdoor access. One of the cats presented more severe papulo-erythematous, pruriginous dermatitis, localized at the base of the ear, the periauricular area and also around the mouth area. The other cats presented some pruriginous lesions in the periauricular area. Although trombiculosis is not a contagious skin disease, the occurrence of this disease in 5 cats from the same household could be explained through the environmental contamination with the larval stage of these harvest mites. Diagnosis was established based on skin scrapings from each cat, that confirmed, through microscopic identification, the presence of mites of *Neotrombicula autumnalis.* None of the cats were treated and the clinical signs resolved within two weeks.
Feline trombiculosis is probably an underdiagnosed disease, and additional studies need to be performed on these mites, as their vector capacity has already been reported. They are known to transmit pathogens such as *Borrelia burgdorferi*, *Erlichia* or *Anaplasma*. Furthermore, humans can also serve as accidental hosts for these harvest mites.

## • Introduction

**Trombiculosis** is the disease produced by the larval stages of the members of the family Trombiculidae, order Prostigmata

The eggs are typically laid in summer, so that the parasitic larva will hatch in late summer or autumn, justifying the popular name of harvest mites or chigger mites

In Europe, the most common species is represented by *Neotrombicula autumnalis*

Multiple species of animals can be infected by chigger mites (such as dogs, sheep, cows, horses, humans, reptiles, amphibians), but the most often reported cases are in cats

**Our present study aims to report a case of infestation with chigger mites in 5 cats, from Bacău city, that manifested lesions on different areas of the body**

## • Material and methods

**History**

- **5 cats** from the same household, presented in consultation in November, in the Department of Parasitology of the Faculty of Veterinary Medicine of Iași , due to itching observed 2 weeks prior
- From Bacau, house in a green area
- With outdoor access
- No other animals
- No treatment against flea or ticks in the last 2 months

**Clinical evaluation**

- one cat-several papulo-erythematous lesions in different areas of the body
- two cats- one lesion restricted to a single area of the body, and
- the last two had only mild pruritus present
- close examination revealed orange clumps in the affected regions

**Diagnosis**

- correlation between the history of the cats, the time of the year (autumn) and the clinical aspect of the lesions was done
- confirmation through multiple skin scrapings, both superficial and deep skin scrapings, to identify both surface mites or burrowers mites

## • Results and discussions

- The microscopic examination of the slides revealed the presence of multiple orange colored mites, covered in setae, with six segmented legs that end up with a claw, therefore larval stages. With the help of identification keys we concluded there were larva of *Neotrombicula autumnalis* (Figure 1. Figure 2).

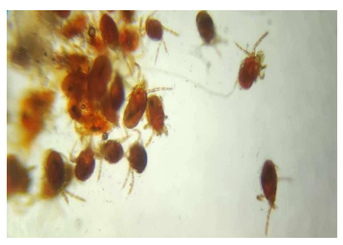

Figure 1- Multiple larva of *Neotrombicula autumnalis (x100)*


Figure 2- Larva of *Neotrombicula autumnalis* (x100)

The 5 cats included in this study, were 3 males and 2 females, aged between 1 and 5 years old, all neutered.

- The most affected cat was a 3-year-old male, which presented several papulo-erythematous lesions distributed in the periauricular area (Figure 3) and the perioral area (Figure 4). Grains of orange colored mites were observed, a characteristic aspect in trombiculosis. Moderate pruritus was present

Figure 3- Periauricular lesions in the 3 year old male

Figure 4- Perioral lesions in the 3 year old male

Figure 5- Lesions inside the ear pavilion in one female

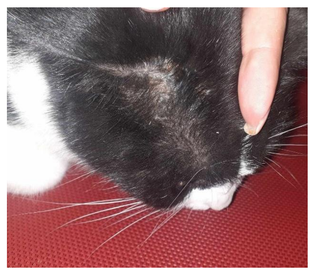

Figure 6- Temporal lesions in another female

- Two of the other cats, both females, presented only one lesion, localized inside the ear pavilion (Figure 5), or in the temporal area (Figure 6) and presented a mild pruritus
- The last two cats presented only mild pruritus and one discrete lesion in the temporal area
- Treatment was not recommended since the clinical presentation was not severe and the owner reported that the clinical signs (especially the pruritus) were already improved at the moment of consultation. The owner agreed to keep the cats indoor for a couple of weeks and also clean and treat the environment inside the house.
- The cats were presented one month later in consultation, the clinical signs completely resolved and we found no more signs of chigger mites.

- An important aspect in the pathogenic activity of chigger mites, is their potential vector capacity. Even if most of the mechanism of the transmission of pathogens remains unknown, the chigger mites have been demonstrated of being capable of transmitting a series of microorganisms to their hosts. Studies demonstrated the presence of *Anaplasma phagocytophilum, Borrelia spp. or Erlichia.*

- Human contamination with chigger mite larvae is also worth taking into consideration. Italy is the European country that reported the most cases of human infestation with chigger mites, especially in people that practiced hiking or have been in green, forested area before the exposure. Symptoms included papular or pustular lesions, erythema and a diffuse pruritus. In Scotland an atypical localization of the mite was found, at the eyeball level, causing conjunctivitis and ocular pain.

## • Conclusions

- Trombiculosis is a rather underdiagnosed disease in Europe, especially in cats and dogs.
- Our study presents a clinical case of trombiculosis in 5 cats, adding up to the few reported cases in Romania. S
- Furthermore, the lack of knowledge of the true vectorial capacity of these chigger mites needs to be further investigated. Veterinarians and medical doctors need to be aware of the dangers that these chigger mite larvae present for public health and include them in the differential diagnosis.

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