

SHORT COMMUNICATION

A SURVEY OF EAR MITES (*Otodectes cynotis*) IN STRAY CATS IN KOTA BHARU, KELANTAN, WEST MALAYSIA**WAN NORULHUDA W.A.W.^{1*}, NIK KAMARUDIN T.¹, NIK NOOR SYAMIMI I.¹, NORLIDA O.¹ AND SAIPUL BAHARI A.R.²**¹ Makmal Veterinar Kawasan Kota Bharu, Jalan Kubang Kerian, 16150 Kota Bharu, Kelantan.² DVS Putrajaya

* Corresponding author: shadowfax_cruz@yahoo.co.uk

SUMMARY. Ear mite (*Otodectes cynotis*) is a very common cause of otitis externa and it is one of the clinically important diseases of cats and dogs. A study on ear mite infestation was carried out on stray cats around the vicinity of Kota Bharu town. This study was done to establish the incidence of positive infections by direct smear of skin scrapings from cats. A total of 34 skin scraping and ear swab samples were taken from stray cats around Kota Bharu, Kelantan. The study was conducted in four locations around the Kota Bharu district, namely; Pasar Pasir Tumbuh, Pasar Medan Buluh Kubu, Kampung Kraftangan and Rural Transformation Centre in Tunjung. A total of 7 samples from RTC Tunjung area were positive for these mites, observed under the microscope. This area also has a wet market where the stray cats live and as the environment is damp and dirty, it is the perfect environment for the spread of the mites. This information is vital for the control of stray animal populations which indirectly affect human health.

Keywords: stray cats, ear mites, *Otodectes cynotis*, cats, Kota Bharu

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Otodectes cynotis (Hering, 1838; Canestrini, 1894) were reported in dogs, cats, foxes, ferrets and other carnivores worldwide (Wilson and Zarnke, 1985; Wall and Shearer, 2001). There were also reports that the mite has been found in insectivores, ruminants (Sweatman, 1958) and even in humans (Van de Heyning and Thienpont, 1977). The mite, also known as ear mite or ear canker mite, lives in the ear canal of the animals and it is a very common cause of otitis externa in cats and dogs. It is high in clinical importance as it estimated that 85% of otitis externa cases in cats and 50% of cases in dogs were caused by this mite (Wall and Shearer, 2001). Once it is inside the ear canal, it feeds on desquamated epithelial cells and aural exudates. Occasionally, the mites pierce the skin to feed on blood, serum or lymph. It can give rise to intense pruritus,

with the animal displaying frequent head shaking and scratching at the ears and this, in turn, can lead to aural hematoma. The ear canal will be inflamed, ulcerated, and accumulation of copious cerumen and frequently serous to purulent exudates.

Transmission between hosts is by direct contact. The mites require a relatively high relative humidity for survival and rapidly desiccate at relative humidity less than 80%. Cats vary in their abilities to serve as hosts for *Otodectes cynotis*. Observations by Preisler, (1985) on a number of cats at necropsy, revealed that some cats had what appeared to be severe lesions with significant quantities of dark cerumen and sometimes even blood present in their ears but only one or two mites. Other cats had very clean ear canals, almost devoid of cerumen and detritus, and have 50 to 100 mites present. Still, other cats were hosts to huge numbers of mites, almost 2,000 per ear, and still showed very little in the way of outward signs of infection. All developmental stages were found on the surface of the ear canal, without being buried. Numerous live mites were collected from the ears of infested cats from which all developmental stages in life cycle (egg, larva, nymph, and adult) were observed (Ahn A. *et al.*, 2014). Thus, the purpose of this study is to determine the presence of mites from ear examinations of cats and to identify the common species of mites.

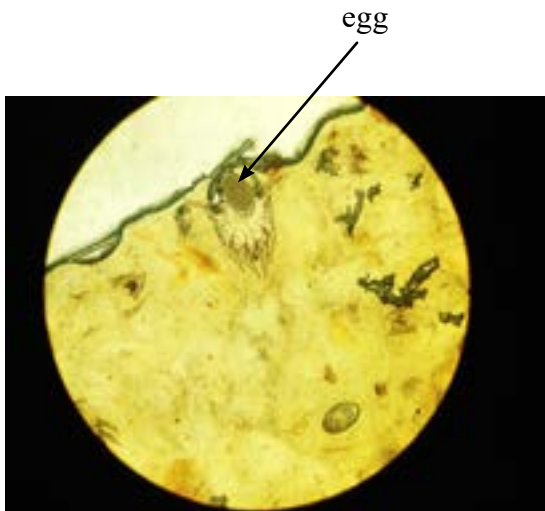
A total of 34 samples were collected from stray cats around the area of Kota Bharu. The specimens were collected

using cotton buds, which were then stored in Whirl-Pak plastic containers. Each sample was taken by swabbing the cotton bud in the cat's ear; including the ear flap right up to the ear canal of the cat. For each cat, four cotton buds were used; two for each ear. As the cats were strays, care was taken to familiarize with cat before handling it. The locations within the Kota Bharu district where cats were sampled were Pasar Pasir Tumbuh, Pasar Medan Buluh Kubu, Kampung Kraftangan and Rural Transformation Centre in Tunjung. The samples from the cats were then sent to the Parasitology Unit of the Regional Diagnostic Laboratory, Department of Veterinary Services. The required apparatus and reagents prepared in advance were glycerin, cotton swab, cover slip, glass slide and compound microscope.

On submission of samples at the parasitology section of the Regional Veterinary Laboratory at Kota Bharu, a government laboratory of the Department of Veterinary Services, the cotton buds were removed from the Whirl-Pak plastic container carefully and any debris was scraped out on to a clean glass slide. Three to five drops of glycerin were dropped onto the debris and covered with a cover slip. The glass slide was examined under a compound microscope systematically at 4× and progressively to 10× magnification (Figure 1). Since all samples were from stray cats which might harbour harmful pathogens, care was taken in wearing gloves and masks while working with the cats and samples. Samples were also stored

Table 1. Location, number of cats sampled and diagnosed positive for ear mites.

Location	Total samples collected	No. of samples positive for ear mites
RTC Tunjung	14	7
Pasar Pasir Tumbuh	4	0
Pasar Medan Buluh Kubu	7	0
Kampung Kraftangan	9	0
Total	34	7
% positive cats positive for ear mites		21%

**Figure 1.** Adult female mite (*Otodectes cynotis*) with egg, 100x magnification

and packed in Whirl Pak for safety and to prevent contamination.

The mite was identified as *Otodectes cynotis* based on the morphological characteristics of adult mites: caruncles on legs 1 and 2 in adult females and on legs 1, 2, 3, and 4 in adult males; tarsus of leg 3 in both sexes equipped with 2 long setae (Ahn A. *et al.*, 2014). Identification is relatively simple (Foley, 1991), no other

non-burrowing mites of this large size are typically found in the ears of the cat. The living mites appeared as small white organisms that was seen moving about within the ears or on swabs of detritus removed from the ears.

Out of a total of 34 stray cats sampled, it was observed that 7 cats were positive for ear mites *Otodectes cynotis*. The positive samples were from the stray cats in RTC in Tunjung, Kota Bharu. It was observed that the cats had dark brown cerumen and debris in the collection of ear swabs. The results of debris examination were reported qualitatively as positive or negative. Table 1 shows the total number of cats examined at each location. It was noted that all 7 cats that had the ear mites were from the Tunjung area. Cats from all other areas did not exhibit the ear mites on examination.

Clean, dry environments have a positive impact in reducing infection rates as was observed in this study. Stray cats from the Tunjung area which has a wet market in the vicinity, were found to be

positive for ear mites. The infection is transmitted while the cats eat, sleep and breed together. The environment may further help to maintain and sustain the eggs and life cycle of the ear mites thereby over time all stray cats will get infected. As some of these strays may wander to nearby housing areas and mingle with pet cats, the infection can be transmitted. In this study, cats in housing areas were not found with ear mites probably due to the cleaner environment and better nutrition which helps to improve the general immunity of the animals, thus preventing severe infections.

In this study, it was found that local cats have the ear mite infection. Further studies can be done see the prevalence of various cat breeds and differences in stray cats and pet cats too. This study also elucidated several points for improvement in the method of sample collection and examination. Better results may have been possible with practice in sample collection with the Q tips cotton buds, and greater sample size. However, this study clearly

shows the need for stray cat population control by the local councils especially in public areas as the cats with this mite infection pose a health hazard to humans and other animals. Public awareness on regular screening of pets for ear mites is also advocated in line with the Department of Veterinary Services agenda towards animal welfare issues and a caring society for stray animals.

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