Mini-Review

Role of Molecular Diagnosis for Dog Ear Mite Infestation

Viroj Wiwanitkit

Wiwanitkit House, Bangkhae, Bangkok, Thailand
Corresponding authors email: wviroj@yahoo.com

Abstract

Dog ear mite infestation is an important ear parasitosis. This infestation is an important common parasitosis in dog and can also be seen as zoonosis to human beings. The diagnosis of dog ear mite is very important since early diagnosis means success in case management. Here, the author briefly reviews and discussed on the role of molecular diagnosis for dog ear mite infestation.

Keywords

Dog ear mite; Molecular diagnosis; Infestation

Introduction

Dog ear mite infestation is an important ear parasitosis (van Bers, 2001). This infestation is an important common parasitosis in dog (Harvey, 1980) and can also be seen as zoonosis to human beings (Wiwanitkit, 2012). Generally, ear mite is classified as an insect. The mite is a very small parasite that can live in the dark recesses of ear canals. It might be visible by naked eye. The parasite can cause the problem within ear canal and also produce itching sensation to the skin around the ear (van Bers, 2001).

The infested dogs can present with itching sensation, scratching on the ears and heads (van Bers, 2001). This might result in bleeding presentation (van Bers, 2001). The poor sanitation is the important risk factors for developing dog ear mite infestation (Rodriguez-Vivas et al., 2003). In dogs with pruritic ear dermatoses, around 40% present the dog ear mite infestation (Park et al., 1996).

1 Diagnosis of dog ear mite infestation

As noted, dog ear mite can be detectable by naked eye. The observation of the intraauricular canal mite is usually the presumptive diagnosis. This can be done by using the otoscope. Sometimes, the mite can be detected in the samples from skin scrapping from itching lesions. The diagnosis of dog ear mite is very important since early diagnosis means success in case management. In general, the confirmation of diagnosis is by the parasitological examination of the determined mite. The main cause of infestation is the parasite namely Otodectes cynotis. Briefly, this mite is short and it has unsegmented pedicels and suckers on the end (Grono, 1969). The morphology of the parasite from different host species, dog and others, is usually the same (Lohse et al., 2002).

However, the diagnosis might be difficult sometimes. The use of immunological diagnosis might help support the diagnosis (Powell et al., 1980). This is usually used in cases with unexplained dermatoses. However, with the implementation of the new advanced molecular diagnosis approach, the use of the new technique in dog ear mite is very interesting. Here, the author will further briefly review and discuss on the role of molecular diagnosis for dog ear mite infestation.

2 Role of molecular diagnosis for dog ear mite infestation

The role of molecular diagnosis for dog ear mite infestation is very limited at present. The reason might be due to the fact that this disease can be easily detected by classical approach. However, there are some reports on using molecular diagnosis technique research on dog ear mite infestation. The interesting application is on the evolutionary biology research.
The study on the genetic underlying of ear mites from different species is the good example (Lohse et al., 2002). As already noted, the persistence of genetic underlying can be seen and the marker for the dog ear mite species that can be seen in mites collected from all infested species is “the second internal transcribed spacer (ITS 2) of the rDNA” (Lohse et al., 2002). However, some genetic markers can help differentiate among ear mites from different species. A recent study by Salib and Baraka (2011) showed that using the RAPD-PCR could help discriminate between mites from dog and cat. In the study by Salib and Baraka (2011), three primers, H-12, T-20 and V-07 were used and success in getting discriminating results could be seen. With this knowledge, it might be helpful in finding the source of mite in the uncommon infested hosts such as human beings.

The use of molecular diagnosis for determination of genetic marker can also be applied for the geographical epidemiology of the infestation. The good example is the study on the distribution of ear mite among foxes (Gunnarsson et al., 1991). Applying the technique can help determine the original source of infection within the region.

**Conclusion**

Dog ear mite infestation is an important parasitosis. The role of molecular diagnosis seems to be limited at present. However, it is no doubt that molecular diagnosis can give usefulness in clinical practice especially for the difficult-to-diagnose case and the infestation in uncommon host.

**References**


