Infestation of ear mites *Psoroptes cuniculi* on farm rabbits and its anthropozoonosis in Gudli village of Udaipur District, India

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**Abstract**

Ear mite infestation in farm rabbits is caused by the parasite *Psoroptes cuniculi*. They are mainly affected ear pinnae of farm rabbit, which turn into larger, thicker crusted lesions with surrounding hair loss. If sick animals are not treated timely these ectoparasites may spread and affect the head, neck, legs, abdomen and perianal region, the blood oozes out from the scratched regions and subsequent hearing loss and secondary bacterial infection make situation more complicated. Diagnosis is being carried out by clinical signs, dermatological and microscopic examination of skin scrapings from affected region. One such incidence has been recorded in a farm having 189 rabbits at Gudli village of Udaipur district of Rajasthan.

**Keywords**  
Ear mite infestation; *Psoroptes cuniculi*; blood oozes; hearing loss.

Introduction

Anthropozoonosis is disease that transmitted from rabbits to humans. Ear mites *Psoroptes cuniculi* infestation in farm rabbit are very common and widespread ectoparasitic problem in both pet and commercial rabbit population. This ectoparasitic infection is due to stress condition, dirty living conditions, lack of proper nutrition, over-crowding, severe of heat and cold environmental conditions. *P. cuniculi* tend to disperse more rapidly through a farm rabbits. Ear mites *Psoroptes cuniculi* are mainly found inside the pinnae, where crust and scabs are created. Itchy ears, erythema, and crusting lesion of the external ear canal, and pain on palpation are the main clinical findings. *Psoroptes cuniculi* causes otoacarisis with severe erythematous, crustaceous, and exudative pruritic skin inflammation. *Psoroptes cuniculi* are become serious, if left untreated; they can lead to infection, deafness, emaciation and finally death resulting in considerable economic losses. Further its zoonotic importance cannot be rule out and it can easily infest human...

Otoacariasis is an important disease of domestic rabbits throughout the world. *P. cuniculi* infestation in rabbits have been reported in the USA (Yeatts, 1994), Italy (Fichi et al., 2007), Turkey (Kurdede et al., 2007), Korea ((Kyung-Yeon and Oh-Deog, 2010) and Romania (Narcisa Mederle, 2010). In India very few research work on *P. cuniculi* in Hyderabad (Ayodhya, 2013). Scanty reports on mite infestation have been reported on ear mites *Psoroptes cuniculi* infestation in Southern Rajasthan of India and primary report of its anthropozoonosis. Therefore, proposed study has been described “Infestation of ear mites *Psoroptes cuniculi* on farm rabbits and its anthropozoonosis in Gudli village of Udaipur District”.

**Materials and Methods**

189 skin scraped samples were collected from ear and head region of affected rabbits due to ear mite *Psoroptes cuniculi* from Gudli village of Udaipur district. *Psoroptes cuniculi* infected skins of rabbits were scraped with the help of a scalpel blade. The blade was used smoothly to scrape on the infected skin. The skin scraped sample were put on microscopic slide, mixed with potassium hydroxide (10%) then give heat for mix the sample with potassium hydroxide and observed under stereomicroscope.

**Results and Discussion**

The rabbit ear mite, *Psoroptes cuniculi*, produces abundant red-brown crusts in the ear canal. Domestic rabbits presented with frequently shaking of the head, intense pruritus, scratch at his ears or one or both ears may drop and weight loss and minimum favorable feed taking rates. An ear inspection observed marked, dense, adherent crusts and erythema covering the external ear canal and internal surfaces of both pinnae (Fig. 1). However, in many cases *Psoroptes* affected mainly in area of ear, head, neck, abdomen, legs and perianal region of farm rabbits reported severe itching, infections, lesions and swelling (fig. 2, 3 and 4). In older or sick animals, or if not treated properly, the parasite can spread to other regions on the body.

Diagnosis was performed by clinical signs and microscopic examination of the skin lesions. *Psoroptes cuniculi* infestation of the ears and body of rabbits, with severe lesions on the skin of the caudoventral abdomen were observed. Infestation with the mite *P. cuniculi* from affected rabbits was diagnosed by skin scrapings and microscopy. Many mites were detected on microscopic examination of material scraped from the external ear canal mixed with mineral oil (Fig. 5). *Psoroptes cuniculi* was the only species detected from the lesions. Eggs and hatching of egg of *Psoroptes cuniculi* were also revealed in many infected skin sample of rabbits (Fig. 6). If sick animal not treated timely these ectoparasites may spread vigorously. Anthropozoonosis was observed in Gudli village of Udaipur District. The infections of *Psoroptes cuniculi* were chronically spread to the animal attendant, his family and to supervisor of the farm rabbits and showed white spots on his legs (fig. 7).

The ear mites *Psoroptes cuniculi* are universal ectoparasites and frequently found on rabbits, goats, horses, mice, rat and sheep. In rabbits, lesions are limited to the ears (Saunders, 1979). The *P. cuniculi* ectoparasites were presented with all ear crust, ears with intensely itchy, secondary
**Fig. 1** Ear crust showing in the farm rabbit.

**Fig. 2** Infection showing spread in upper eye and ear pinnae.

**Fig. 3** *P. cuniculi* infection spread in leg of farm rabbit.
Fig. 4 Head region vigorously affected by *Psoroptes cuniculi*.

Fig. 5 Microscopic examination of skin sample from ears of farm rabbits observes the ear mite *Psoroptes cuniculi*.

Fig. 6 *Psoroptes cuniculi* coming outside the egg.
sore and scabs formation excess secretion of red and browny waxy formation inside one or both ears, resulting of shaking of head of farm rabbits that are in agreement with Henry and Griffith (1971), Burke (1992) and Cutler (1998). *P. cuniculi* has different life stages: egg, larva, protonymph, adult mite. The cycle lasts about 21 days, depending on environmental condition, with eggs hatching after 4 days (Praag, 2002). Present study revealed that the mites puncture the epidermis of ear, suck lymph and give rise to local inflammatory swelling from which serum exude, coagulates and forms enormous encrustation inside the ear. (Yeatts, 1994; Harrenstien *et al.*, 1995; Baker, 1998 and Perrucci *et al.*, 2005). The mite causes intense pruritus with formation of crusts and scabs, which can completely fill the external ear canal and internal surface of the pinnae in untreated animals (Bates, 1999; Perrucci *et al.*, 2005). The clinical findings in the present cases are similar to reported by others (Beck & Kleintierpraxis, 2000 and Ayodhya, 2013). In wild rabbits parasite diseases often affect single animals, whereas the intensive production of domestic rabbits typically has to deal with parasites as herd problems which in some cases may invalidate the economy of commercial rabbits (madsen, 1986). This study comprises that in farm rabbit population this type of infection more severe than single pet rabbit, this infection spread one by one all farm population.

This study is a report of *P. cuniculi* in farm rabbits in Gudli village in Udaipur district of Rajasthan, India and its zoonotic importance. Moreover, it is necessary that the epidemiological observation on large scale for detection of ear mite in farm rabbits.

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**References**


Von Regine Ribbeck, B. 1976. The ear mange mite (Psoroptes cuniculi) of the domestic rabbit (Oryctolagus cuniculus f. domestica), Angew Parasitol. 17(4):suppl 1-29.