

NOTOEDRIC MANGE IN TWO RABBITS – CASE REPORT

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SUMMARY

Two 1.5 month old rabbits were presented with chief complaint of intense pruritus and alopecia since twenty days. It was informed that alopecia started from the facial region and gradually progressed to other regions of the body. The rabbits were mainly kept indoors but reared in and outside of house. Both rabbits exhibited crust formation, alopecia and generalized erythema. Distribution of lesions was observed on the face, ear margins, dorsal back and limbs. Vital parameters were within the normal limit. Laboratory examination of skin scrapings from the rabbits revealed adult mites of *Notoderes cati*. Both infected rabbits were treated with inj chlorpheniramine maleate followed by subcutaneous injection of ivermectin along with topical application of betadine solution which resulted in remission of clinical signs in both the rabbits. Improvement was noticed by complete clinical recovery along with absence of mites in skin scrapings for two consecutive times at weekly interval.

Keywords: Ivermectin, *Notoedres cati*, Rabbit

Notoedres cati, is the rarest mite ever been reported in rabbit which burrows superficially in skin (Darzi *et al.*, 2007). However, there have been some isolated reports on *Notoedres cati* from different parts of the world. Elshahawy *et al.* (2016) recorded Sarcoptic scabiei cuniculi (22.5%) as the most frequent mite, followed by *Notoedres cati cuniculi* (2.5%) in an epidemiological survey in Egypt. Panigrahi *et al.* (2016) reported concurrent infection of Notoedric, Sarcoptic and Psoroptic acariosis in two New Zealand white rabbits.

Notoedres infestation in rabbits is clinically manifested as formation of scales and scab and itchiness of the external ear canal and pinnae, lips, nose, face with further involvement of other body parts (neck, legs and sometimes around genitalia) (Borkataki *et al.*, 2018). Among the various acaricides tried for the management of the disease, ivermectin given orally or parentally has been reported to be effective (Eraslan *et al.*, 2010). The present report describes Notoedric mange in two rabbits and its successful management with subcutaneous ivermectin therapy.

Two 1.5 month old male rabbits were presented to Small Animal Clinics, GADVASU, Ludhiana in the month of May with chief complaint of intense pruritus, alopecia and rough hair coat from past 20 days. Normal appetite and activity of the rabbits with occasional lethargy was informed. Alopecia reportedly started from the facial region and gradually progressed to other parts of the body. The owner also informed that the rabbits were kept indoors and reared in and outside of house. Owner also reported the spread of infection from one rabbit to another and were not treated for the affection previously.

Rabbits were thoroughly examined for the presence

of lesions on different parts of the body. Physical examination in both rabbits show edalopepic patches, diffused erythematous, scaly and crusted lesions. Distribution of the lesions were noticed over the face, nose, around eyes, ear pinna, dorsal back and fore limbs including lesions on the feet region especially inter-digital spaces (Fig. 1-4).

Skin scrapings were collected from three different sites presenting lesions, using a #10 blunt scalpel blade in 10% potassium hydroxide solution and were sent for laboratory examination. Microscopic examination of skin scrapings revealed few adult mites of *Notoderes cati*. The mites were identified as *Notoedres cati var. cuniculi* on the basis of description given by Muller *et al.* (1983), based on their shape and presence of dorsal anus. On the basis of skin scraping examination and clinical signs, the cases were diagnosed as Notoedric mange.

The rabbits were treated with Inj. chlorpheniramine maleate @ 0.4 mg per kg bwt intramuscular followed by Ivermectin 0.3 mg S/C once and Liq. Povidone-iodine (1:1 dilution) over the lesions topically twice a day. The rabbits responded well after one dose of ivermectin. Clinical signs resolved within two days of treatment and both of the rabbits stopped scratching and biting. Remission of clinical signs and marked progressive improvement of health condition in rabbits was observed on 3rd day and complete visual shedding of lesions was recorded on 6th day of treatment (Fig. 5-6). Significant clinical improvement and complete recovery was observed after one week post treatment and skin scrapings were found negative.

The present communication reports successful clinical and parasitological cure of *Notoedres cati var. cuniculi* associated mange infestation in rabbits with single sub-cutaneous injection of ivermectin @ 400 µg/kg

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Fig. 1. Erythematous lesions and alopecic patches over face, around eyes and ears in first rabbit

Fig. 2. Diffused erythematous and scaly lesions with alopecia on dorsal back in second rabbit

Fig. 3. Crusts on the nose, erythematous lesions around eyes in first rabbit



Fig. 4. Lesions on the feet region especially inter-digital spaces in second rabbit

Fig. 5. First rabbit on 7th day post treatment

Fig. 8. Second rabbit on 7th day post treatment

body weight. No adverse reactions were observed after the treatment. These findings are in accordance with Renuka Prasad *et al.* (1989), although Singla *et al.* (1996) reported complete parasitological cure in *Notoedres mange* in rabbits with negative skin scrapings after 20 days of therapy. Singari *et al.* (2001) found a single dose of doramectin @ 400 µg/kg along with the supportive treatment of antihistaminic for three days against notoedric mange in rabbits to be 100 per cent effective. In present case, the owner did not report any skin lesions over own body. However, Sivajothi *et al.*, 2015 reported intense pruritus over the hands, small erythematic crusted papules on the wrists and both the legs in cat owners with *Notoedres* infestation.

Unusual rainfall and fluctuation in the environmental temperature and relative humidity in Punjab during the months of May might have played an important role in occurrence of mite infestation. Similar observations were noted by Narang *et al.* (2015) and Borkataki *et al.* (2018). Transmission requires close contact and typically is within a host species (Sivajothi *et al.*, 2015). *Notoedres cati* is likely to be transmitted from infested cats to rabbits (Fain, 1965). As the rabbits were reared in and out of the house, the mite was suggested to be transmitted from domestic cats.

Ivermectin is reported to have no ovicidal effect (Pandey, 1989), and normally the eggs of *Notoedres* hatch in four to five days (Gordon *et al.*, 1943). The absence of mites from 7th day after ivermectin treatment is indicative of availability of sufficient concentration of drug to kill any larvae hatching from the eggs. It has also been suggested that drug persists in rabbit tissues sufficiently long to remove new generation of mites as the eggs hatch (Pandey, 1989 and McKellar *et al.*, 1992). This case report also suggests the prolonged availability of ivermectin in the rabbits with a residual effect against mites. The high efficacy of ivermectin in the keratin layer may be because of high concentration which is achieved in the skin (McKellar *et al.*, 1992).

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