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Clinical Article

BOVINE HYPODERMATOSIS IN SOUTH HARYANA: A CASE REPORT

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SUMMARY

A case of *Hypoderma* species infestation in cattle was encountered in Mahendergarh district of Haryana with low humidity climate favourable for breeding and survival of *Hypoderma* species flies. A crossbred cow of 1.5 year age was brought to clinical complex of Haryana Pashu Vigyan Kendra, Mahendergarh with complaint of restlessness, itching on back region, dullness and decreased appetite. On clinical examination of animal, numerous soft nodules with average diameter of 2-3 cm on dorsolateral part of back region were recorded. These nodules were pressed in downward direction which resulted in release of some larvae. Posterior spiracles of the larval stages were examined for confirmation of *Hypoderma lineatum* species. Later, animals were treated twice with ivermectin at 10 days interval. Animal started showing recovery after first shot and got completely cured after second injection. The present report describes about a case of bovine hypodermatosis in Haryana.

Keywords: *Hypoderma lineatum*, Ivermectin, Mahendergarh, Warble

Bovine hypodermatosis is a type of obligatory subcutaneous myiasis caused by larval stages of *Hypoderma* flies in ruminants (Hassan et al., 2010). Bionomics of *Hypoderma* species is highly complex with short (3-5 days) non-feeding adult ectoparasitic life span and a year long endoparasitic larval stages. Although a prevalence ranging from 50 to 90% was reported earlier (Soni and Khan, 1945), however, nowadays very few cases are reported from different isolated pockets. *Hypoderma lineatum* is the only species that has been described from bovidae in India. The cases of cattle hypodermatosis have been documented from sub-himalayan northern states (Chhabra and Pathak, 2009), Punjab (Sen and Fletcher, 1962), Haryana (Singh and Chhabra, 1973), Rajasthan (Kumar *et al.*, 1990) and Jammu (Yadav *et al.*, 2013). However, in Haryana state, very limited *Hypoderma* infestations are reported and with the changing climatic condition, diverse irrigation practices and humidity in environment, such cases were not observed and reported in last 20 years. Certain districts in Southern Haryana such as Mahendergarh have very low humidity that supports the life cycle of *Hypoderma* species and the present report showed its occurrence in districts of southern Haryana.

A crossbred cow of 1.5 year age was brought to Clinical Complex of Haryana Pashu Vigyan Kendra, Mahendergarh, Lala Lajpat Rai University of Veterinary and Animal Sciences, Haryana. Animal was presented with complaint of restlessness, itching on back region for last one month, dullness and decreased appetite. On clinical examination, there were more than 10-15 soft nodules with average diameter of 2-3 cm on dorsolateral part of back region. On pressing the nodules, a larva wriggles out along with yellowish purulent secretion, suggestive of larva of *Hypoderma* as tentative diagnosis (Fig. 1 and 2). For confirmation, larvae were collected in a dry petri dish and observed under the stereoscope.

The larvae removed were barrel shaped in outline. They measures around 2 cm in length and 0.5-1 cm in width and had several segmented body. Ventrally, transverse rows of spines were present and tubercles were observed on dorsal and lateral sides indicating *Hypoderma* species larvae. Further, posterior spiracles were observed which showed kidney shaped peritreme on flat surface with a central button or ecdysal scar. The space between two ends of peritreme was extended indicating *H. lineatum* larvae (Mullen and Durden, 2009). Based on the history, clinical observations, nature of clinical symptoms, and analysis of oozed out larva from nodules with confirmation by macroscopic and microscopic examination of the larvae, the case was diagnosed as infestation by *H. lineatum* larvae.

For treatment, hairs were clipped around the soft swelling. Larva was removed by injecting 0.5 ml of 5% Hydrogen peroxide (H_2O_2) solution into the nodules. Most grubs emerged within 15-30 seconds due to foaming action of H_2O_2 solution and leaving cavity behind. Proper dressing of the cavity was done after larvae removal. After removal of larva, injection of Ivermectin (Hitek® 3.15% w/v) 7 ml was given subcutaneously at the dose rate of 1 ml per 50 kg body weight at 10 days interval twice.). In addition, supportive therapy (Liver extract and B-complex) was also provided for better and faster recovery of animal. Follow up for the above treatment was recorded with observations of decrease in number of warbles along with subsiding of respective clinical signs of restlessness and itching. After 6 weeks of treatment, no *Hypoderma* spp. larvae emerged from the animal indicating successful treatment and recovery of the animal.

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Fig. 1. Wound created after squeezing out of larva from warble formed at the back of the cattle.

Fig. 2. Enlarged tuberculated larvae of *Hypderma lineatum* removed from the cattle body.

Bovine hypodermatosis results in huge economic loses by reducing milk yield, weight gain, quality of beef and hide damage (Hassan *et al.*, 2010). There were no reports of incidence of *Hypoderma lineatum* in Haryana since last two decades. Increased irrigation practices and tree plantation has significantly affected relative humidity in several districts making conditions unfavourable for *Hypoderma* species in most of the parts of Haryana state. Incidence of Hypodermosis in districts of southern Haryana are suggestive of its potential reoccurrence in areas of lower relative humidity. Therefore, districts of Haryana like Mahendergarh being adjacent to Rajasthan poses greater threat of re-emergence of this parasitic problem in Haryana if proper control and quarantine measures are not adopted as in the above mentioned case.

REFERENCES

Chhabra, M.B. and Pathak, K.M.L. (2009). Myiasis of domestic animals and man in India. *J. Vet. Parasitol.* **23**: 1-7.

Hassan, M., Khan, M.K., Abubakar, M., Waheed, H.M., Iqbal, Z. and Hussain, M. (2010). Bovine hypodermosis-a global aspect. *Trop. Anim. Health Prod.* **42**: 1615–1625.

Kumar, D., Jatkar, P.R., Raisinghani, P.M., Gahlot, G.C., Kayum, A. and Jairath, L.K. (1990). Implications of warbles (*Hypoderma lineatum*) infestation in drought-affected cattle at Bikaner, Rajasthan. *Indian J. Anim. Sci.* **60**: 433–435.

Mullen, G.R. and Durden, L.A. (2009). Medical and Veterinary Entomology. (2nd Edn.), Academic Press, London. p. 328.

Sen, S.K. and Fletcher, T.B. (1962). Veterinary entomology and acarology in India. Indian Council of Agricultural Research, New Delhi. pp. 313-320.

Singh, A. and Chhabra, R.C. (1973). Incidence of arthropod pests of domesticated animals and birds. *Indian J. Anim. Sci.* **43**: 393-397.

Soni, B.N. and Khan, M.A. (1944). Ox warble fly in India. *Indian Farm.* **5**(3): 118-121.

Yadav, A., Katoch, R., Khajuria, J.K., Godara, R. and Agrawal, R. (2013). Prevalence of *Hypoderma lineatum* in cattle of Jammu region. *J. Parasit. Dis.* **37**(2): 196-198.