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Prevalence of setariosis in equines in Tarai region of Uttarakhand

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Abstract

The present study was conducted at Teaching Veterinary Clinical Complex, Pantnagar from 2009 to 2012. A total of 9 cases of *Setaria* species microfilaria in the eyes of the equines were presented and treated during this period. All the animals were presented with history of partial/complete corneal clouding and lacrimation. The clinical parameters like temperature, pulse rate, respiration rate were in normal range. Feeding, defecation and urination were normal. On close clinical examination of eye the white coloured thread like worms moving continuously were seen in the aqueous humour. It was decided to remove the worm surgically from the anterior chamber of the eye and the animals were operated. The parasitological examination of the worms recovered from operated horses were identified as *Setaria spp* as per their morphological features and wet film examination of blood. After proper surgical management the opacity and lacrimation of affected cases got cleared.

Keywords: *Setaria* species, corneal clouding, aqueous humour, opacity, lacrimation

1. Introduction

Equine ocular setariosis is a vision threatening disease of equine resulting from ectopic parasitism caused by *Setaria* spp, a genus of filaroid worms (Radwan *et al.*, 2016)^[9]. *Setaria equina* is a common filarid parasite of equids that has been found to occur in North America, Europe, and Asia, and is believed to be vectored by *Aedes* or *Culex* mosquitoes (Arundel, 1978; Ahmad and Srivastava, 2007)^[2, 1] The adult worms range in size from 5 to 13 cm in length with the males being the smaller of the two, and they normally reside in the peritoneal cavity of the infected horse (Levine, 1968)^[7]. Although infections are typically benign, pathologies of the eye and central nervous system have been attributed to *S. equina* (Frauenfelder *et al.*, 1980)^[4].

Setaria equina occurs primarily in the peritoneal cavity and are nonpathogenic (Mritunjay *et al.* 2011)^[8] but sometimes adult worm migrates erratically, like in the pleural cavity, lungs, arachnoid space, scrotum, intestine and anterior chamber of eye in horse, donkey and mule (Ahmad and Srivastava, 2007, Gangwar *et al.*, 2008)^[1, 5]. The parasite in eye may cause corneal endothelial damage with clouding of cornea, uveitis, chorioretinitis and blindness (Soulsby, 1982; Hunger Ford, 1990, Basak *et al.*, 2007)^[10, 6, 3].

This species have often been associated with cerebrospinal nematodiasis (Kumri). Larvae produced by adult worms in the body cavity circulate in the blood and are taken up by culicine mosquitoes, including *Aedes* and *Culex* species. Infective larvae develop in the mosquito muscles in 2 weeks, and are reinjected into horses when the mosquitoes feed. Adult parasites are present 8 to 10 months after infection.

9 cases of *Setaria* species microfilaria in the eyes of the equines were treated in the Veterinary Teaching Hospital, Pantnagar from January 2009 to January 2012.

2. History and Clinical Signs

All the animals were presented to Teaching Veterinary Clinical Complex, Pantnagar with history of partial/complete corneal clouding and lacrimation. The clinical parameters like temperature, pulse rate, respiration rate were in normal range. Feeding, defecation and urination were normal.

3. Diagnosis and Treatment

On close clinical examination of eye the white coloured thread like worms moving continuously were seen in the aqueous humour.

It was decided to remove the worm surgically from the anterior chamber of the eye and the animals were operated. The parasitological examination of the worms recovered from operated horses were identified as *Setaria* spp as per their morphological features *i.e.* the mouth is surrounded by a cuticular ring bearing prominences on dorsal, ventral and lateral aspects. The males were 40-80 mm and females were 70-130 mm long. Wet film examination of blood also revealed presence of microfilaria.

4. Discussion

After proper surgical management the opacity and lacrimation of affected cases got cleared. Prevalence of ocular filariosis in Tarai region of Uttarakhand may be due to the conducive environment for the multiplication of vectors.

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