Case report

A human case of *Hymenolepis diminuta* infection in Nepal

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A case of *Hymenolepis diminuta* infecton in human is reported. The patient was an 18 year old Nepalese female with an array of gastrointestinal symptoms. She was successfully treated with niclosamide. This report, for the first time; of *H. diminuta in* Jiri area confirms the possible distribution of this species in Nepal.

Hymenolepis diminuta (rat tapeworm), a sole parasite of rat, rarely parasitize human It is relatively larger species than *Hymenolepis nana*. The scolex has an unarmed rostellum and four suckers[4] . The number of proglottids varies from 800 to 1000. It has a worldwide distribution in normal hosts[4] . Approximately 200 human cases, so far primarily from India, the former Soviet Union, Japan and certain areas of the southern United States have been reported.[4,5,10.11] Several human cases in children from Italy[9], and Spain[12] , have also been published. We report one case of *H. diminuta* infection in a female from Nepal.

An 18 year old girl, born in Jiri (Dolakha District, Nepal) and who had never travelled outside Nepal, was referred to our Jiri Helminth Project Clinic, She complained of mild dirrhoea, abdominal pain, indigestion, and anorexia and weight loss. She was found normal during physical examination. Her leukocyte count at this point was 8800/ cc, with 6% eosinophils and Hb 13.8 G/ dl. No abnormality was detected in urine examination. The parasitological examination of the stool specimen revealed spherical with striated outer membrane, apprx.65um-diameter, thick shelled eggs that contained six central hook lets but no polar filaments *(fig 1).*

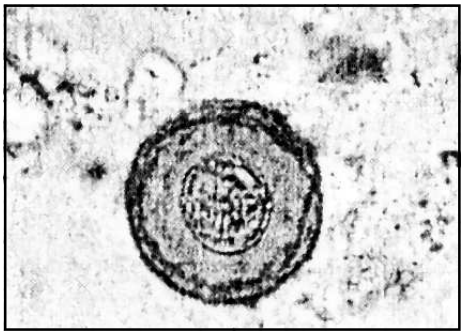

Fig. 1 Egg of H. *diminuta* at a magnification of x400.

The eggs were identified as the ova of *H. diminuta*. Stool specimens from her family members were tested negative for this parasite. She was given oral niclosamide; 2 gram (four tablets) as the first dose and subsequent five doses (i.e., days 2 through 6) were reduced to 1 gram (two tablets) daily. This treatment course was completed at our clinic and in our direct supervision. One month after completion

of the treatment, she turned asymptomatic and subsequent parasitological examination showed no ova of H. *diminuta.* Additional examinatin carried out three months after treatment was also found negative.

H. diminuta infection in human is usually confined in children[5,7,8,9] It is often asymptomatic, however, mild dirrhoea, abdominal pain, irritability and pruritus have been associated with this condition H. diminuta infection may cause eosinophilia, a finding that is absent in our case. Though intestinal parasitic infection in our country, Nepal, is common[13], this is the first confirmed case of human infection reported.

Rats and other rodents are the principal definitive hosts and natural reservoir of *H. diminuta*[1,4]. Cockoaches, beetles, fleas and other coprophilic arthropods are the intermediate hosts'[4]. Foods such as beaten rice and cereals contaminated with infected arthropods are the chief sources of infection. Beaten rice is very popular snack among children in this region and equally consumed in her home. The most likely way that this girl contracted infection was to have eaten arthropods containing the infective stages of the species. Usually children appear to be more prone to infection by this species[7, 9,12] but the present case seems to be related with adult. Safe and effective treatment of *H. diminuta* infection can be achieved with either praziquantel or niclosamide.[6] Though the drug of choice for this tapeworm is praziquante[16,19] we used niclosamide because of its easy availability in this region and found to be effective. The present case report in this area confirms the distribution of this species in Nepal.

Presence of clear symptoms and the condition of the patients in this case tends to support that the infection with H. *diminuuta* may give rise to significant gastrointestinal illness in humans. Elimination of *H. diminuta* requires appropriate anthelmintic treatment and it is better to rescreen the patient's stool for parasitic eggs at 1 and 3 months after therapy to ensure cure.

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