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Occurrence of hydatid cyst in cattle of Mandla district of Madhya Pradesh

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Abstract

Hydatidosis is one of the major parasitic zoonotic disease of livestock and man is caused by larval stage of metacestode (hydatid cyst) of dog tapeworm *Echinococcus granulosus*. The pathogenesis of disease heavily depends on the extent and severity of infection and the organ on which it is situated. The occasional rupture of hydatid cysts often leads to sudden death due to anaphylaxis, haemorrhage and metastasis. Present study deals with occurrence of hydatid cyst in cattle carcasses aged around 6-9 year in the month of April 2018 to November 2019 in the Ghughari block of Mandla district (M.P). Three cattle (two female & one bullock with history of suddenly died, post-mortem lesions showed of several hydatid cysts found in the liver and rare in the lungs. Cysts were fluctuating containing clear watery or serous fluid. Hard cysts contained some viscous fluid or caseous mass. Liver and lung were enlarged and highly congested. The present study provides baseline data on the current status of the disease in the area. Hence, there is need for increased attention in control and prevention of the disease.

Keywords: Hydatidosis, hydatid cyst, *Echinococcus granulosus*

Introduction

Animal husbandry contributes significantly to the Indian economy and socioeconomic development in the country. They play a vital role in supporting the livelihoods of the poorest men and women, who keep livestock, especially in marginalized areas. Parasitic diseases are known to cause significant burden on livestock keepers as the cause of low productivity and many debilitating diseases. Since most of these infections are sub-clinical, farmers and veterinarians often ignore them, resulting in substantial losses in the livestock economy. Hydatidosis is a zoonotic disease that is found all over the world and is a major economic and public health concern. This disease is caused by larval stage of metacestode of the dog tapeworm *Echinococcus granulosus*. Human and animal gets infection by ingestion of the embryonated egg. This embryonated egg (Oncosphere) hatch out and penetrate the wall of the intestine of intermediate host and then the oncosphere develops to become the cyst called as hydatid cyst in different organs like lung and livers. Hydatidosis responsible for significant health and economic losses in different country including India [2, 14, 15]. Hydatidosis in livestock can lead to decreased meat yield and quality, milk production, a lower birth rate, delayed performance and growth, and organ condemnation, particularly of the liver and lungs. In India, total economic losses due to hydatidosis are estimated to be around RS.11.47 billion (approximately US \$212.35 million) per year [13]. The prevalence of hydatidosis has been carried out from different parts of the world viz. Iran [5], Egypt [8] Pakistan [7] and Turkey [3]. In India, the prevalence of hydatidosis has been reported from Tamil Nadu [10], Mumbai, Maharashtra [9], Punjab [1], North India [14, 11] and Jammu [6]. The current study aims to investigate the occurrence of hydatidosis in cattle, emphasising the importance of disease awareness and a disease control programme.

Materials and Methods

The study was carried out in the Ghughari block of the Mandla district (M.P) from April 2018 to November 2019. Mandla District is located in the Satpura hills of the Indian state of Madhya Pradesh. Paddy, wheat, and oil seeds are the most common crops grown in the district. The main occupations of the people in this district are lac production, timber cutting, animal husbandry, mat production, and rope production. Between April 2018 and November 2019, a total of 25 post mortems were performed to determine the cause of death, and three animals (two female cattle and one bullock) were found to have hydatid cysts in the liver and lungs.



Fig 1: Hydatid cyst in liver of cow



Fig 2: Hydatid cyst in liver of bullock



Fig 3: Hydatid cyst in lung of cow

Result and Discussion

Hydatid cyst disease is a serious medical and veterinary problem all over the world. It is a livestock and human disease caused by consuming infective eggs of the cestode *Echinococcus granulosus*; domestic intermediate hosts (cattle, camels, sheep, goats, and buffaloes) serve as major reservoirs for the disease in humans. In the present study, 12% animal including two adult cattle and one bullock were found to be infected with hydatid cysts out of a total of 25 animals. The majority of hydatid cysts were found in the liver and rarely in lungs. However, all carcasses were weak, anaemic and icterus and the animal may have died as a result of the hydatid cyst. The prevalence of hydatidosis has been reported from Tamil Nadu ^[10], Mumbai, Maharashtra ^[9] Punjab ^[1], North India ^[14, 11] and Jammu ^[6]. However, these study mainly based on the slaughterhouse.

The prevalence of hydatidosis in cattle has been reported by several worker showed variation in their report. Variations in the prevalence could be due to the variations in the temperature, environmental conditions, and the management practices adopted in rearing the animals ^[10]. The incidence of hydatidosis in the current study can be correlated with the grazing pasture from which these cattle were brought for grazing purposes, which may have been frequented by several stray dogs. In present study also observed that the size of hydatid cyst was not in same size.

According to the findings of the current study, hydatid cysts are most common in the liver. Hydatid cyst usually forms lesions in lung and liver which have abundant capillari structures ^[4] Though, it was also determined at the organs like muscles, spleen and other organ ^[12].

The findings of the study indicate that hydatidosis occurs in animals in this region, indicating the need for intervention policies such as stray dog population control and prophylactic anthelmintic treatment of dogs and other animals, as well as general public awareness of the parasite, to reduce the infection.

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