SHORT COMMUNICATION Bhartiya Krishi Anusandhan Patrika, Volume 39 Issue 3-4: 346-347 (September and December 2024)

Hydatid Cyst in Buffalo of Mandla District of Madhya Pradesh

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10.18805/BKAP747

ABSTRACT

Hydatidosis is the most prevalent parasitic illness of zoonotic importance affecting both humen and animals. This condition is triggered by the larval metacestode of the dog tapeworm, which primarily affects the health and lifestyles of subsistence farming communities in underdeveloped countries. Compared with other visceral organs, hydatid cysts are most likely to develop in the liver and lungs. Depending on its developmental stage, it can play a mechanical or toxic role in the hepatobiliary system. Owing to decreased output and the condemnation of visceral organs and carcasses, large-sized hydatid cysts cause significant economic loss. Hydatidosis is the most prevalent zoonotic parasite illness in both humen_and animals. In the Mandla area of Madhya Pradesh, hydatid cysts have been found in buffalo carcasses that are 8-10 years old. One male and five female buffaloes that had previously died suddenly had postmortem lesions that revealed multiple hydatid cysts in the liver and abdominal cavities. Cysts that contained clear, watery, or serous fluid were varying in size. Some viscous fluid or caseous substances were present in hard cysts. The lungs and the liver were swollen and clogged. This explains the current state of the disease in the region and, consequently, the necessity for increasing focus on disease control and prevention.

Key words: Buffaloes, *Echinococcus granulosus*, Hydatid cyst, Liver, Metacestode.

Diseases in humen and animals are an issue for both the economy and public health, especially in nations that raise livestock Craig *et al.* (2007). One of the most pervasive anthropozoonoses in agriculturally based nations is hydatidiosis, which is caused by Echinococcus granulosus (Ito *et al.*, 2003). The damaged organs are condemned as a result of a fluid-filled sac or hydatid cyst, being present in various places in the intermediate hosts, including sheep, goats, cattle and buffaloes. Aside from their existence in the spleen, heart, kidney and other organs, hydatid cysts are typically observed in the lungs and liver. Hydatid cysts are often a chronic parasitic infection that persists for the majority of the animal's life in intermediate hosts, such as buffaloes. Secondary hosts include people, cattle, sheep, goats, buffaloes, horses, mules and elephants, which acquire infectious eggs orally through contaminated food, fodder and water. Digestive enzymes make it simple to break segments. The liver and lungs, in particular, as well as the kidney, cardia, spleen, cerebrum and bone marrow contain oncospheres (Cadona and Carmena, 2013). The host mounts a potent immunological response and forms a fibrous capsule around the cyst. This prevents the body from getting rid of cysts. These formations develop over time to form vesicles containing liquids. The germination membrane inside the cyst forms thousands of scolexes by asexual reproduction. Unilocular refers to the presence of only one cyst, whereas multivesicular refers to the presence of many cysts that are not connected. Multivesicular cysts are more common in cattle than unilocular cysts in sheep and humans. The cyst was considered productive because it included protoscoleces. A cyst containing only fluid and no protoscoleces was deemed sterile (Dziri, 2001; Bowmayn, 1999). The current investigation was carried out to ascertain the frequency of hydatid cysts in the liver of buffaloes during postmortem examination in the Mandla region of Madhya Pradesh.

The study was conducted in the Mandla area of the M.P. state _from January 2020 to July 2021. Twenty post-mortems were performed to establish the cause of death. Both male and female buffalo carcasses were subjected to postmortem examination of their visceral organs, such as the liver and lungs. The incidence of hydatid cysts in buffaloes was determined macroscopically either by visual inspection or palpation.

Hydatidosis was present in 25% (5/20) of the infected buffaloes, which is comparable to the incidences reported

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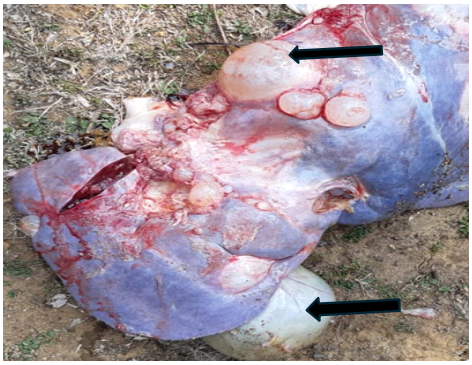
How to cite this article: Tekam, S., Karmore, S.K., Jadav, K.K., Jain, P., Gupta, N., Bharhaiya, R.K., Lade, D. and Singh, N. (2024). Hydatid Cyst in Buffalo of Mandla District of Madhya Pradesh. Bhartiya Krishi Anusandhan Patrika. 39(3-4): 346-347. doi: 10.18805/BKAP747.

Submitted: 31-05-2024 **Accepted:** 02-09-2024 **Online:** 18-09-2024



The big arrow refers to the gall bladder.

Fig 1: A buffalo's liver infected with multi-localized large and medium -sized hydatid cysts (arrow).

Fig 2: Buffalo liver showing the formation of migratory tracts due to parasitic infection (arrow) (*Echinococcus granulosus*).

by Dhote *et al.* (1992) and Cockrill (1994). Abraham *et al.* (1980), among other earlier researchers, claimed that buffaloes exhibited higher incidences of 38% hydatidosis. Several researchers had_recorded the prevalence of hydatidosis in buffalo, although their reports varied. Variations in the prevalence might be brought on by changes in the temperature, the environment and the management techniques used to raise the animals (Raman and Jhon, 2003). Unhygienic and poor management, grazing over diseased pastures and the presence of a significant number of stray dogs close to the buffalo sheds are the most likely causes of the variance in occurrence. Grossly, hydatid cysts in the liver were identified by the presence of characteristic, surface-protruding cysts of various sizes (Fig 1). Various-sized cysts were also seen deep into the liver parenchyma. Cysts contained a clear, watery fluid and when they were cut open, they revealed spaces that were bordered with a smooth membrane and could be shelled out (Fig 2). The liver was found to have several late-stage cysts lodged at various depths, greatly enlarging the organs. The liver was the site where hydatid cysts were most frequently found, according to the results of the current study. Hydatid cysts typically develop as lesions in the liver and lung, both of which have a large number of capillaries (Getaw *et al.,* 2010). Although other organs like the spleen_and muscles also played a role in determining it. According to Sheeba *et al.* (2016), hydatidosis affects animals in any area depending on the various intervention policies like stray dog population control, prophylactic anthelmintic treatment of dogs and other animals, as well as general public education about the parasite, to lessen infection.

CONCLUSION

Cases of hydatid cysts are important to both the economics and health of animals. The need for the future elimination of hydatid cyst disease has increased through the application of novel diagnostic and therapeutic approaches in the veterinary field, particularly the promotion of preventive medicine through the routine use of antiparasitic drugs for both secondary and ultimate hosts.

Conflict of interest

There is no conflict of interest among the authors.

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