

## SHORT COMMUNICATION

**FASCIOLIASIS IN AN ADULT DRAUGHT BUFFALO IN MALAYSIA: A CASE REPORT**ROSILAWATI K.<sup>1</sup>, RAMLI S.<sup>1</sup> AND SAIPUL BAHARI A.R.<sup>2</sup><sup>1</sup> Kuantan Regional Veterinary Laboratory, Jalan Seri Kemunting 2, 25100 Kuantan, Pahang<sup>2</sup> Department of Veterinary Services, Putrajaya

\* Corresponding author e-mail: rosilawati.dvs@1govuc.gov.my

**SUMMARY.** Fascioliasis is an important parasitic disease caused by the liver fluke *Fasciola gigantica* in Malaysia. The infestation of liver fluke in ruminants; cattle, sheep, goats and buffaloes can result in economic losses to the country mainly due to the drop in livestock production, reduction in growth rate, condemnation of liver, reduction in draught power and high usage of anthelmintics. This paper describes a case of liver fluke infestation in a two year old male buffalo that was eventually slaughtered. The buffalo was reported to be emaciated and was reared in an oil palm plantation for use as draught power in buffalo-drawn carts loaded with oil palm bunches; along with 18 other buffaloes of various ages. Previously, there were two cases of buffalo deaths from the same herd. The organ and faecal samples were sent to Kuantan Regional Veterinary Laboratory (RVL) for diagnostic work up. The received samples were then sent to parasitology, histopathology and bacteriology sections for laboratory analysis and confirmation on the pathogens. The bacteriology result showed *Escherichia coli* isolated in all

internal organs. Presence of adult flukes (*Fasciola gigantica*) were observed in the bile duct of the liver through gross examination and also histopathological evaluation and supported by the positive result of *Fasciola* ova via sedimentation test conducted from the faecal sample, thus justifying the final diagnosis as severe liver fluke infestation leading to emaciation and simultaneously having colibacillosis.

**Keywords:** liver fluke, buffalo, histopathological, sedimentation test

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*Fasciola hepatica* and *F. gigantica* are the two liver flukes commonly reported to cause fascioliasis in ruminants; cattle, sheep, goat and buffalo. The two important species are *Fasciola hepatica* found in temperate areas and *Fasciola gigantica* which predominates in tropical areas. Fasciola are large flattened, leaf-shaped fluke and hermaphrodite worms. The mouth opening is surrounded by the oral sucker. The ventral sucker is larger than oral sucker and present near the anterior end. The eggs of the liver fluke are oval shaped

with thin shell, golden-brown in color and operculated at one pole. Fasciolosis is a disease caused by infestation with *Fasciola* which migrate in the liver parenchymal cells and develop in the bile ducts of ruminants. The intermediate host of liver fluke is the snail (*Lymnaea* sp.). These intermediate hosts play an important role to complete the life cycle of liver fluke and transmit the disease. Parasitism such as fascioliasis, is one of the main causes limiting livestock productions in most of the tropical and sub-tropical countries of the world (Talukder S. *et al.*, 2010), bringing economic losses in poor doing animals in terms of weight loss, poor breeding potential and finally death.

This is a case study of a 2-year-old, young male adult buffalo that was slaughtered as a result of showing signs of extreme emaciation. The organs, such as liver, kidneys, lungs and heart, as well as faecal samples from the colon, were sent to the Kuantan RVL for disease investigation and to determine the cause of the poor body condition. The buffalo was reared in an oil palm plantation and used as a draught buffalo for carting oil palm bunches. It was observed to be thin and weak which led to the decision of slaughter as it was not performing efficiently for draught purposes.

Upon gross examination of the liver, two adult liver flukes were found inside the bile duct upon incision. The bile ducts were thickened and whitish in color indicating hyperplasia of the lumen, as seen in Figures 1 and 2.



Figure 1. Adult *Fasciola* spp (blue circle)



Figure 2. Thickened and whitish bile duct (blue circle)

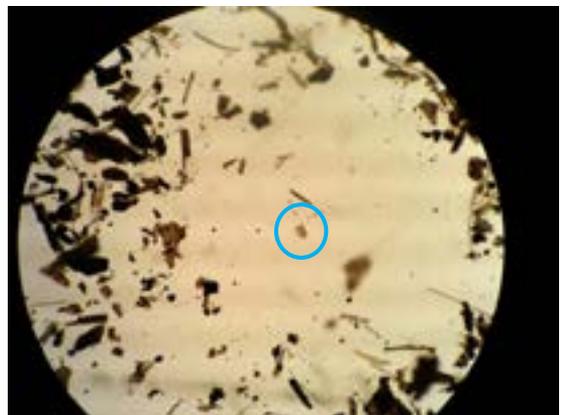


Figure 3. Golden-brown eggs of *Fasciola* (blue circle)

At the RVL, the organs were sent to the bacteriology section for routine culture. The liver sample was fixed in 10% of formalin and stained routinely with haematoxylin and eosin for detailed histopathology examinations. The faecal sample was sent to parasitology section for sedimentation test.

The sedimentation of faecal sample revealed golden-brown eggs of *Fasciola* sp. and the adult fluke was identified as *Fasciola gigantica*. The histopathology result revealed liver flukes in the intrahepatic bile duct. The duct was thickened and almost occluded. In addition, bacteriology results showed *E. coli* being isolated from organs.

The definitive diagnosis of this case is based on history and laboratory results; namely liver fluke infestation. The predisposing factors in this case are work stress and environmental conditions such as poor weather, feeding and housing. Poor sanitation, wet conditions such as flooding gives rise to suitable habitats for the intermediate host which is the *Lymnea* snail in oil palm plantations where the undergrowth is thick and ground is prone to water retention. The larval stages are easily dispersed in the oil palm plantations which is damp and has drains for water drainage (Ibrahim *et al.*, 2009). Usually, the animals affected with liver fluke infestation will show anemia, jaundice, weight loss and sub-mandibular edema. Blockage of bile ducts by adult flukes further may cause disruption in digestive process and lead to emaciation.

The presence of adult flukes and fluke ova indicate that fascioliasis is a major contributor to the emaciated condition of the animal. The diagnosis of *E. coli* in organs indicates that the animal may have been suffering from concurrent bacterial infection due to the reduced immunity and poor body condition. In the laboratory analyses of parasitic infestations from faecal samples, the detection of *Fasciola* spp. ova can be unreliable because the eggs are expelled intermittently, depending on the evacuation of the bile bladder. Fluke infestation in cattle also damages the liver physically leading it to be condemned thereby reducing the value of the carcass. (Tham *et al.*, 1981). In chronic disease and high infestation, there is general weakness which will affect the fertility and in draught animals, it causes reduction in draught power of the buffalo at the oil palm plantation.

In order to reduce future occurrence of these cases, strategic anthelmintic treatment should be practised in combination with environmental control measures including drainage, fencing and use of molluscicides to ensure a satisfactory degree of control in the long run (Ibrahim *et al.*, 2009). The control of flukes on farms is important in order to reduce cost of treatments and to avoid economical loss due to liver condemnations at slaughter house.

Man is usually infected accidentally by eating raw aquatic plants such as watercress with encysted metacercariae (Saleha, 1991). Human fasciolopsiasis

(largest intestinal fluke) was first reported at Malaysia in a 39-year-old female farmer, a native of Sabah. The patient complained of cough and fever over two weeks, loss of appetite and weight. *Fasciolopsis buski* eggs was detected in the stool (Rohela *et al.*, 2005).

In conclusion, liver fluke or fascioliasis in ruminants especially cattle and buffaloes has been a common occurrence in all states in Malaysia. Control and eradication of the intermediate hosts as well as strategic treatment will help alleviate the problem among ruminant farmers in order to improve productivity and reduce deaths.

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