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COMPARATIVE HISTOPATHOLOGICAL STUDY OF  
HEPATIC CHANGES INDUCED BY *FASCIOLA*  
*HEPATICA*/*SCHISTOSOMA BOVIS* AND *SCHISTOSOMA*  
*BOVIS*/*FASCIOLA HEPATICA*

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The aim of this study was to investigate the long-term histopathological effects of *Fasciola hepatica* and *Schistosoma bovis* diachronic infections in lamb liver. Animals in Group I were primarily infected with 80 *F. hepatica* metacercariae administered by oesophageal probe and challenged after 10 weeks with a single percutaneous exposure to 400 *S. bovis* cercariae for 30 minutes using the leg immersion technique. Group II animals were exposed to 400 *S. bovis* cercariae and challenged six weeks later with 220 *F. hepatica* metacercariae. Necropsies were carried out 24 weeks after the last infection. Later on the macroscopic test, small pieces from the liver were processed for light and electron microscopy. Histologically the hepatic architecture was significantly altered in the two groups studied, though the lesions presented in Group I were more severe. Fibrosis affected portal tracts and was extended to connective septa and the parenchyma. The epithelial lining of smaller bile ducts was degenerated and the larger bile ducts had severe desquamation and even necrosis of the epithelium, glandular hyperplasia, intense infiltration of lymphocytes, plasma cells and eosinophils and thick concentric fibrous wall. Bile ductular proliferation was also observed. Hepatocytes were locally degenerated (feathery and acidophilic degeneration, lipid vacuoles). Near the dilated sinusoids, haemozoin were seen within Kupffer cells. A vessel reaction for the presence of eggs of *S. bovis* in branches of the portal vein were observed. There were thrombosis and a granulomatous inflammation in and around the vessels. Typical microgranulomas contained a central egg which was surrounded by histiocytes, giants cells, lymphocytes, eosinophils with a peripheral layer of fibroblasts and collagen fibers. Macrogranulomas with necrosis followed by calcification and two adult worms in the parenchyma were also seen. Ultrastructural analysis revealed abnormalities of the hepatocyte cytoplasm and nuclei; lysosomes were the predominant cell organelle. Perisinusoidal spaces were enlarged and Kupffer cells increased in number and are activated. According to the results, we suggested that the lambs should be a model for investigation into the interaction between schistosomiasis and fascioliasis infections in the pathogenesis of chronic liver disease.

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