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REPORT OF A FEW CASES OF CYSTICERCUS TENUICOLLIS IN LAMBS, KIDS AND ITS HISTOPATHOLOGICAL INVESTIGATION *

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Abstract

Gross changes and histopathological findings of hepatitis cysticercosis in lambs and kids due to the presence of immature Cysticercus tenuicollis (larval form of Taenia hydatigena) are described. The results are compared with those lesions caused by migration of immature Fasciola hepatica and different aspects of the changes are discussed.

Introduction

The life cycle of Taenia hydatigena and the development of mature cysticerci in intermediate hosts have been adequately studied (March

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1965, Nieberle et Cohrs 1966, Jubb et Kennedy 1970). Lesions produced in the liver by immature Cysticercus tenuicollis (larval form of Taenia hydatigena) have been described in detail in sheep (Pullin 1955, Sharma Deorani 1967, Migaki et Zinter 1974, Jensen et Pierson 1975, Edwards et Herbert, 1980).

In this report the gross and histopathological lesions caused by the migration of immature stage of cysticercus tenuicollis in liver of lambs and kids is studied and the results are compared with those lesions caused by migration of immature Fasciola hepatica.

Materials and Methods

Among 5, 850 cases received for necropsy during 1981 - 1985 at Pathology Department of Razi Institute, Tehran, Iran, five lambs and three kids were diagnosed to have died due to acute hepatitis. Liver of the mentioned cases were the materials used in this study. Lambs and kids were brought from premises located within 100km radius from 2–4 month of age and with clinical reports of sudden death. At necropsy the liver samples were taken fresh for parasitological studies and in 10% formalin solution for histological investigations. Fixed materials after processing were embeded in paraffin blocks, cut in 6 /u sections and stained by H and E methods.

Results

At necropsy the outstanding change noted in all cases was hepatitis. The liver of 3 kids and 4 lambs were showing quite similar appearances while that of the last lamb though showed some similarities in changes but was rather different in other respects. The latter liver was diagnosed

parasitologically as acute distomatosis while the others were confirmed to be infested by immature Cysticercus tenuicollis, (larval stage of Taenia hydatigena). The livers affected with the migration of larval stage of Taenia hydatigena showed dark red sharply circumscribed hemorrhagic foci of millet to hempseeds size and tortuous sometimes stellate tunnel-like burrows up to 2cm in length. These were filled with blood and projecting a little above the surface and had been caused by the wandering young cysticerci. Some escaped embryos were wandering on the surface of the liver and peritoneum, (Fig. 1,2). Consistency of the liver was different from case to case, some were unchanged and some were rather hardened. The liver of lamb that was infested with Fasciola larvae showed uneven surface scirrotic appearance, mottled in colour and slightly hard in consistency.

Bacteriological investigations were followed in all cases, but no pathogenic bacterial involvement was identified in any of the cases.

Microscopic studies of sections prepared from cysticercotic livers revealed, large foci of hemorrhages and burrows filled with blood. Some of these burrows ended with a cystic structure of Cysticercus tenuicollis of young cysticerci, Fig. 3, 4.Burrows were surrounded by necrotic live cells and some migrating leucocytes, mostly monocytes but a few eosinophils and neutrophils. Portal cells far from the burrows showed either no changes or mild changes of degeneration.

Scattered hemorrhagic foci mixed with and surrounded by necrotic liver cells, extensive infiltration of leucocytes, (neutrophils, eosinophils and monocytes areas of connective tissue hyperplasia, cuboidal or columnar metaplastic mesothelial cells and migrating young Fasciolae surrounded by the tissue not showing severe changes were the prominent microscopic findings in sections prepared from the liver affected with migrating immature lasciola hepatica (Fig. 4).

DISCUSSION

The qualitative features of hepatic lesions of our cysticercosis cases were in full accord with those of other investigators.

As we received dead animals for necropsy and neither pathogenic bacteria was identified nor any prominent changes apart from acute hepatitis was observed in any of the cases, we were convinced that acute hepatitis and liver disfunction were the only cause of death in all cases.

In comparing the changes in liver brought about by migration of larval stage of Cysticercus tenuicollis and those of young Fasciola hepatica it was discerned that although there were some similarities in macroscopic findings by the presence of some differences in microscopic examinations revealed of which a general severe liver reaction followed by migration of Fasciolae can be mentioned.

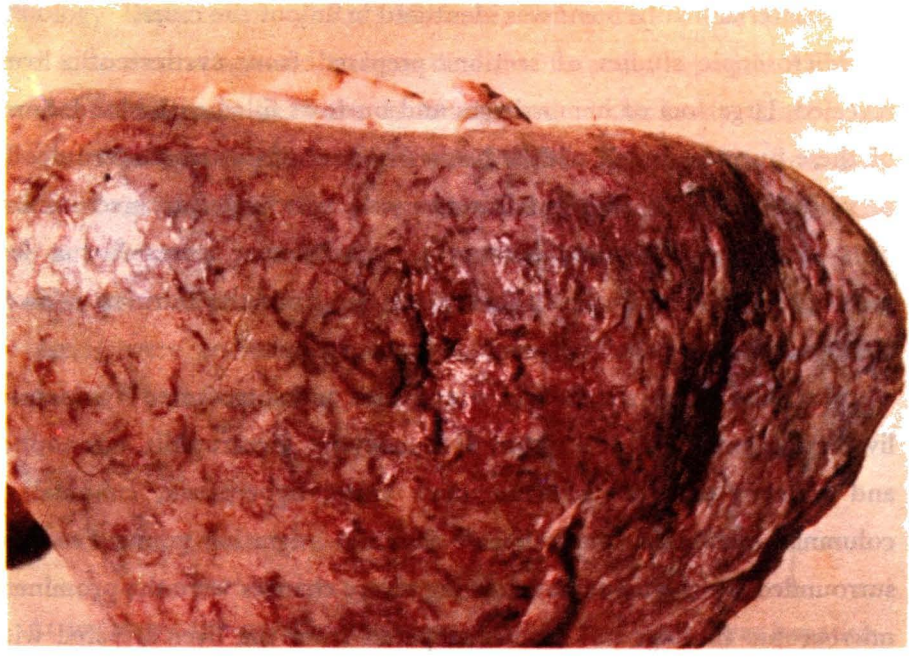

Fig. 1. Lamb liver. 3/4 natural size. Hemorrhagic foci and tortuous burrows are noted.

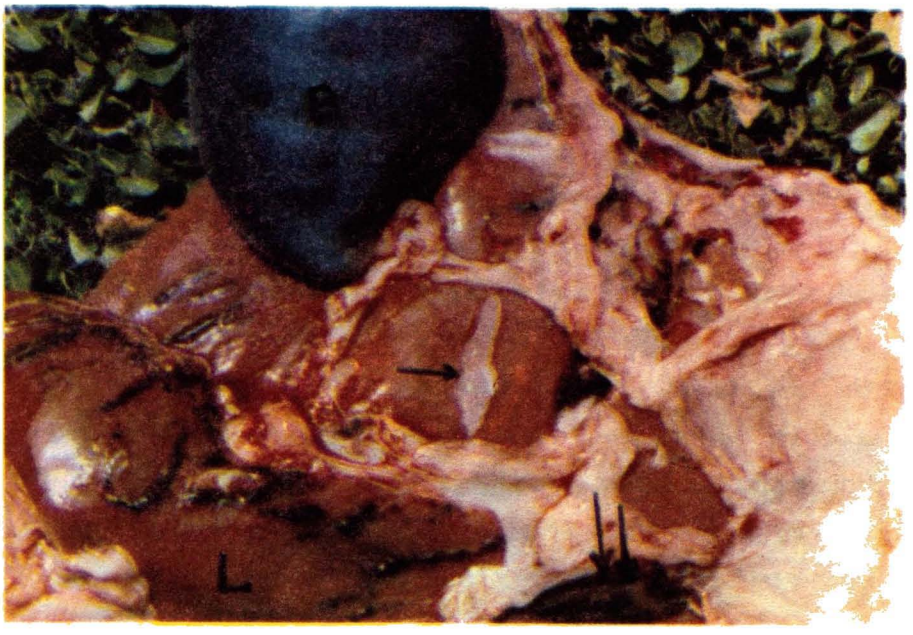

Fig. 2. Liver of lamb infested by immature Cysticercus tenuicollis. L=liver, B=gall bladder. One arrow shows escaped Cysticercus wandering on the surface of liver. 2 arrows show tortuous burrows containing blood.

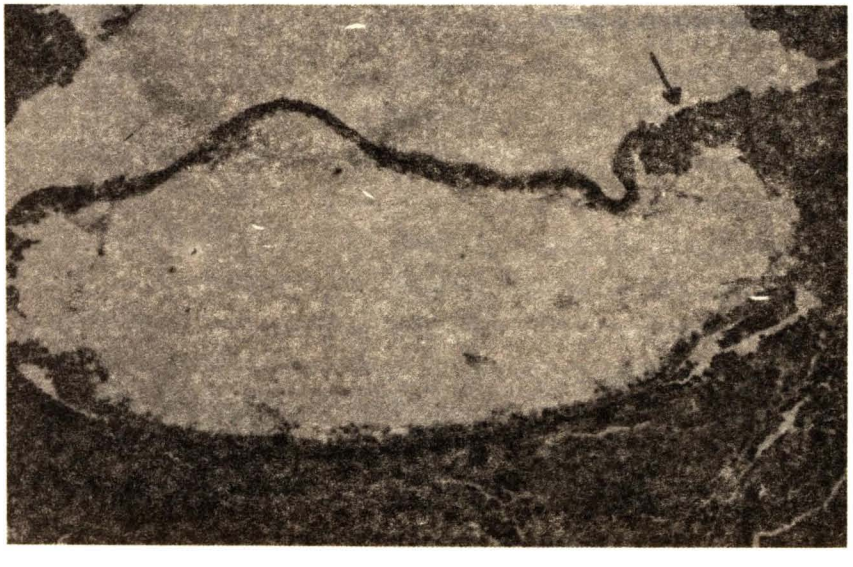

Fig. 3. Higher magnification of Fig. 4. Arrow shows migrating leucocytes. H and E x 240.

Fig. 4. Section of lamb liver. Scattered hemorrhagic foci mixed with necrotic. Liver cells and Infiltrated leucocytes. In the middle a young Fasciola with no severe surrounding reaction is shown.

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