The trematodes Fasciola hepatica and Dicrocoelium dendriticum are recognized as the most important helminthic parasites of sheep, causing economic losses to ranchers due to reductions in milk and meat production, condemnation of parasitized livers, abortion, increased mortality, and the expense of control measures. In Iran, the main enzootic area of sheep liver trematodes lies in the north of Iran, but Fasciola spp. and D. dendriticum also occur in the northwest region of Iran. Fasciola spp. and D. dendriticum are found in many parts of the world (1,2). In chronic infections, these parasites cause biliary cirrhosis in the livers of cattle and sheep, leading to economic losses (3). In the last decade various studies about the prevalence of fasciolosis and dicrocoeliasis in cattle and sheep have been conducted in different parts of Iran (4).

Only one study (1), conducted in Tabriz, reported the prevalence rates of these infections in sheep, but the study did not include animals that came only from the northwest region of Iran.

In the present study sheep livers were investigated pathologically at the municipal slaughterhouse of Tabriz, Iran. All sheep were managed on a semi-intensive system.

The study was conducted from July 2004 to September 2004. Samples were collected from 140 sheep (systematic random sampling). Livers were examined according to the method described by Ogambo-Ongoma (5) and the parasites were identified by their morphological characteristics (2,6). For histopathological examination, all samples were fixed in 10% formalin buffer, processed with routine H&E staining.

In all, 2 species of liver fluke, F. hepatica and D. dendriticum, were encountered in this study. About 10-12 D. dendriticum and 3-4 F. hepatica were obtained from 1 liver cutting surface. The number of examined and infected animals, and the prevalence rates are given in the Table.

Major changes in the livers of sheep infected with F. hepatica were fibroplasias and cellular infiltration of Glisson’s capsule, accompanied by granulomas in the parenchyma beneath the partial surface (Figure 1). The histopathological effect of D. dendriticum was similar to that F. hepatica, but to a lesser degree (Figure 2). In the present study, these alterations were encountered in all cases (7-9).
Nadim (1) reported that among 120 sheep livers, 1.62% were infected with F. hepatica and 21.6% with D. dendriticum at a Tabriz slaughterhouse in 1995. Saffarbani (4) reported that among 150 sheep livers, 20% were infected with F. hepatica and 18.6% with D. dendriticum in an Ardabil slaughterhouse in 1999.

Gargili et al. (10) studied the prevalence of liver fluke infection in slaughtered animals in Trakya, Turkey, and reported that 3.99% of 476 sheep livers were infected with F. hepatica and 23.52% with D. dendriticum.

In the present study conducted in Tabriz, F. hepatica was found in 12% of 140 sheep versus D. dendriticum in 20%. For D. dendriticum, this prevalence rate was higher than previously reported in the northwest of Iran, but the prevalence rate of F. hepatica was higher than reported in other regions of Iran. In addition, these parasites contribute to liver condemnation. We conclude that fluke infection in slaughtered sheep in the northwest region of Iran is occurring at a significant level.

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References