

A SURVEY ON SOME BACTERIOLOGICAL AND PATHOLOGICAL ASPECTS OF SHEEP LIVER ABSCESSSES

A. Ghadrddan-Mashhadi, H. Yosefi
Azad university of Garmsar, Garmsar, Iran

Introduction

Hepatic abscesses can be seen in any species but are more prevalent in ruminants especially Cattle. The liver is particularly susceptible to abscesses because it receives blood from several sources, including the hepatic artery, the portal system, and the umbilical vein in fetus and neonate. Local suppurative infections of the liver don't cause clinical signs of hepatic dysfunction unless they are particularly massive or extensively metastatic. Hepatic abscesses in goats have been described, too, but the information about them in sheep is very little. This study was carried out to find the occurrence of liver abscesses in sheep slaughtered in Garmsar.

Material and Methods

Livers from 493 randomly selected sheep were examined. Specimens were obtained at the local slaughterhouse on 21 days spread over two seasons. The animals were selected from both sexes and divided to three age groups (group A: less than 1 year, group B: 1-2 years and group C: more than 2 years). Liver was examined, and the number, location and size of abscesses were recorded and then sampling for bacterial culture was done. Statistical analysis is performed using Z-test and χ^2 methods.

Results

Of the 493 sheep examined, 39(7.9%) had abscesses. The rate of liver abscesses in male and female was 5.3% and 73.8%, respectively. According to presence of abscesses there was significant difference between the two sexes ($p < 0.05$). The rate of liver abscesses in different age groups A, B and C were 2.4%, 8.7% and 21.6%, respectively and there was a significant difference between them ($P < 0.05$). Most of the abscesses (82.1%) were found in right lobes of livers and there was a high significant difference between different liver lobes ($P < 0.01$). Also, most of the abscesses (92.3%) were found in diaphragmatic surface of the liver. All of the abscesses were less than 1 cm in diameter. The following bacteria were isolated (Table 1): Staph.aureus (22 cases), C.pseudotuberculosis (18 cases), Strp.agalactia (6 cases) and F. necroforum (1 case).

Tab1: Frequency of bacteria isolated from liver abscesses

Bacteria	Frequency
C.Pseudotuberculosis	5(12.8%)
A.pyogen	4(10.3%)
Staph.aureus	6(15.3%)
F.necroforum+Staph.aureus	1(2.6%)
A.pyogen+staph.aureus	10(25.6%)
A.pyogen+staph.aureus+strep.agalactiae	3(7.7%)
staph.aureus+strep.agalactiae+	1(2.6%)
C.Pseudotuberculosis	
staph.aureus+strep.agalactiae	1(2.6%)
A.pyogen+ strep.agalactiae	1(2.6%)
No growth	7(17.9%)
Total	39(100%)

Discussion

The abscesses usually found in the liver at the time of slaughter or necropsy are often well encapsulated with thick fibrotic walls and therefore hematological analysis and liver function tests are not useful indicators of liver abscesses. Economic loss may still be significant, however, because the rate of gain may be reduced by 3% to 8% due to decrease in feed intake, and feed efficiency may also be reduced. Also, hepatic abscess leads to the rejection of the affected livers at the abattoir. Liver abscesses occur in any species, but the abscesses of significant economic impact occur in feedlot cattle. However, it can occur in other ruminants, like sheep. Results of this study showed that 39 sheep (7.9%) had liver abscesses. We couldn't find the rate of hepatic abscess in slaughter sheep as most of the studies on liver abscess have been done in cattle. Therefore, a comparison of the results of this study with other studies was impossible. But this figure is less than the usual range for cattle, 12% to 32%. In this study female sheep had liver abscess more than male. It is expected that the rate of abscess is higher in older sheep, and in a herd, female sheep are older than males. It should be noted that although many factors are involved in occurrence of liver abscess, but diet is the most important one. The question may rise, as male sheep is bred as feedlot animal rather than females, and receive more carbohydrate food than females; therefore they must be more vulnerable to liver abscess. One can imagine that the female sheep are fed with the risky diet before slaughtering, and due to their higher age, they are more exposed to liver abscess. There was a significant difference between different age groups with respect to liver abscess affection, such that the abscess occurrence is higher for older sheep. Presence of isolated bacteria indicated abscesses forming following ruminitis and reaching bacterial flora from rumen to liver. Observation of more abscesses on diaphragmatic surface and right lobes can be due to being more exposure of these parts to portal vein blood stream.

Conclusion

According to results of this study hepatic abscess isn't an important disease in sheep in Garmsar.

References

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