A Comparative Study of the Prevalence of Some Parasites in Animals Slaughtered in Jeddah Abattoir

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ABSTRACT. 2470 imported sheep (from Australia, Turkey, Somalia, Rumania and the Sudan), 142 imported cattle (from Hungary, Rumania, Bulgaria and U.S.A.), 5 imported camels (from Sudan) and 4050 indigenous sheep (2050 Najdi and 2100 Harri) were examined during post-mortem inspection at Jeddah abattoir for the presence of macroscopically discernible parasites. Blood smears from the animals were also examined for protozoa. The prevalence of hydatidosis amounted to 7.15% in Turkish sheep, 3.56% in Sudanese sheep, 0.28% in Australian sheep and 0.0% in other animals. Fascioliasis was recorded at rates of 15.75% in Turkish sheep, 8.04% in Sudanese sheep, 1.8% in Somali sheep, 1.11% in Rumanian sheep, 0.28% in Australian sheep and 4.22% in cattle. None of the imported camels or indigenous sheep was infected with fascioliasis. Cysticercosis prevalence was 1.62% in Turkish sheep, 1.14% in Sudanese sheep and 0.21% in Australian sheep; other animals were not infected. Nasopharyngeal myiasis was recorded in 3 of the 5 camels. Blood films showed few positive cases of Theileia ovis; no other blood parasites were observed.

Introduction

Saudi Arabia is a rapidly developing country, and the need for animal food products is increasing steadily. Since indigenous livestock cannot satisfy the increasing human demands, importation of food animals from various other countries is unavoidable. Between 1979-1983 the annual average number of slaughtered animals in Saudi Arabia was 2,079,756 heads of imported (85.7%) and 348,116 heads of indigenous livestock (14.3%) [1]. Usually, not all the imported animals are immediately slaughtered but are kept for some time, in feedlots or grazing grounds, with indigen-
ous breeds. Many parasitic infections, such as hydatidosis\cite{1-3}, fascioliasis\cite{4,5}, schistosomiasis\cite{6}, coenurosis\cite{7}, myiasis\cite{8-10}, trypanosomiasis\cite{11} and various ecto-parasites\cite{12-14} were previously recorded in imported animals in Saudi Arabia, often at higher prevalence rates than indigenous breeds. It is, thus, likely that the exchange of these parasites, between imported and indigenous livestock, is contributing towards the spread of animal parasitism as well as the incidence of parasitic zoonosis in the country. The objective of the present study was to compare the prevalence rates of some parasites seen among imported/versus indigenous livestock and slaughtered in Jeddah.

Material and Method

During the period, September 1985-February 1986, 2470 imported sheep (1400 from Australia, 419 from Turkey, 385 from Somalia, 179 from Rumania and 87 from Sudan), 142 imported cattle (30 from Hungary, 30 from Rumania, 30 from Bulgaria and 52 from United States of America), 5 imported camels (from Sudan) and 4050 indigenous sheep (2050 Najdi and 2000 Harri) were examined at Jeddah Abattoir. The liver, lungs and spleen of all animals were examined for hydatid cysts. The livers were also examined for fascioliasis, while the heart and skeletal muscles were examined for cysticercosis. In camels, the nuchal ligaments and subcutaneous tissues of the neck and shoulder regions were examined for Onchocerca fasciata while nasopharyngeal cavities were examined for myiasis. Blood smears from all animals, stained with Giemsa, were examined for blood parasites. The mesenteries of all animals were examined for Schistosoma spp. Gastro-intestinal helminths were not looked for in the present study.

Results and Discussion

The results are shown in Fig. 1, 2 and 3 for hydatidosis, fascioliasis and cysticercosis, respectively. As shown in Fig. 1, the prevalence of hydatidosis was significantly greater in Turkish sheep (7.15%; \(p < 0.01\)) compared to Sudanese (3.56%) and Australian (2.8%) sheep. None of the other imported sheep or cattle was infected with hydatidosis. Camels were also free from infection although this was probably due to the small number of animals examined. The high prevalence of hydatidosis in Turkish and Sudanese sheep, on the other hand, was alarming. Although in the present study, no indigenous sheep were found infected, higher prevalence rates of hydatidosis were recorded in indigenous sheep in Bureida and in some parts of the Eastern Province, than in imported sheep. In Al-Hasa area, the prevalence of Echihococcus granulosus in stray dogs was around 15.0% and a massive infection (500,000 worms) was observed in one case\cite{15}. In Jeddah, on the other hand, examination of 32 stray dogs failed to reveal infection with E. granulosus\cite{3}. However, the prevalence of hydatidosis in livestock slaughtered in Jeddah area, as shown in the present study, could result in the spread of this zoonotic infection to local stray dogs. Consequently, human and animal infection with the intermediate stage (hydatid cyst) may arise. Already, human hydatidosis was recorded in various other parts of the Kingdom\cite{15-17}.
Fig. 1. Hydatidosis in imported and indigenous livestock in Jeddah.

Fascioliasis (Fig. 2) occurred at a significantly (P < 0.01) higher rate of 15.75% in Turkish compared to 8.04% in Sudanese sheep; it also occurred at rates of 4.22% in imported cattle, 1.8% in Somali sheep, 1.11% in Rumanian sheep and 0.28% in Australian sheep. These prevalence figures are in general accord with those found in imported livestock elsewhere in the country\(^{1,2}\). The present study failed to reveal fascioliasis among indigenous livestock slaughtered in Jeddah, although prevalence
rates of 0.36-0.50% were recorded in indigenous sheep in Bureida\textsuperscript{[2]}. Moreover, \textit{Limnaea natalensis}, the snail intermediate host of \textit{Fasciola gigantica} was found in many regions in Saudi Arabia\textsuperscript{[18]} while \textit{L. auricularia} (snail intermediate host of \textit{F. hepatica}) was recorded in imported \textit{Elodea} in green houses in Jeddah\textsuperscript{[6]}. The susceptibility of \textit{Limnaea} spp. to local and imported strains of fascioliasis remains to be studied.

\textbf{Fig. 2.} Fascioliasis in imported and indigenous livestock in Jeddah.
Cysticercosis (Fig. 3) was recorded, in the present study, at almost similar rates in Turksish (1.62%) and Sudanese sheep (1.14%) but at a low rate (0.21%) in Australian sheep. None of the other imported or indigenous livestock had cysticercosis. In other parts of Saudi Arabia, cysticercosis was also not reported in indigenous sheep but bovine cysticercosis was found in both imported and indigenous cattle with higher prevalence in the former[1,3]. Schistosomiasis was not recorded in the present study in any of the animals examined.

Fig. 3. Cysticercosis in imported and indigenous livestock in Jeddah.
The only myiasis infection recorded in this study was naso-pharyngeal myiasis caused by *Cephalopina titillator*. Three of the five Sudanese camels examined were infected. High prevalence rates of this form of camel myiasis were reported previously\[15\] in imported as well as indigenous camels, with higher prevalence in the former.

Examination of blood smears showed *Theileria ovis* in twenty indigenous sheep (Harri breed). No other blood parasites were observed during the present survey. The same parasite was reported in indigenous sheep in the Eastern Region of Saudi Arabia\[11\].

During a 12-month period, El-Bihari and Kawasmeh\[19\] examined abomasa and intestines of 520 camels as well as faecal samples from 960 camels in the Eastern Region of Saudi Arabia for gastro-intestinal parasites. The common parasites recorded were *Haemonchus longistipes*, *H. contortus*, *Trichostrongylus probolurus*, *Trichostrongylus spp.*, *Camelostrongylus mentulatus*, *Parabronema skrjabini*, *Nematodirus spp.* and *Trichuris sp.* Almost 91% of all camels examined had trichostronglid type eggs in their faeces. Hussein and Hussein\[20\] recorded *H. longistipes* in Najdi camels slaughtered at Riyadh with more prevalent infection in old camels.

In the present study, gastro-intestinal helminths of slaughtered animals were not investigated although current work is being conducted on this important group of parasites.

This study in general reveals higher prevalence of some parasites among imported compared to indigenous food animals in Jeddah area. This situation also applies to many viral and bacterial diseases of livestock in the Kingdom. All imported livestock should therefore, be quarantined, upon arrival, for general inspection, drenching, spraying and medication. Moreover, they should be segregated during fattening or grazing from indigenous livestock. Slaughtering livestock outside abattoirs without veterinary supervision should also be avoided.

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**References**


A Comparative Study of the Prevalence.


دراسة مقارنة عن مدى الإصابة ببعض الطفيليات في الحيوانات المذبوحة في مذبح جدة

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تم فحص الحيوانات المذبوحة التالية في مذبح جدة لبعض الطفيليات الواقعة: 2470 من الضأن المستوردة (من استراليا، تركيا، الصومال، رومانيا، السودان) 142 من الأبقار المستوردة (المجر، رومانيا، بلغاريا، الولايات المتحدة الأمريكية) 5 جمال مستوردة من السودان، 420 ضأن محلي (2500 نجدي، 2000 حجري).

كما فحصت مسحات دموية من هذه الحيوانات لتبين الإصابة بالأمراض الحيوانية.
وكانت نسبة الإصابة بالأكياس المائية 10,7% في الضأن التركي، 0,2% في الضأن السودان، 0,1% في الضأن الأسترالي، 0,1% في الحيوانات الأخرى. كما سجلت الإصابة بالديدان الكبدية بنسبة 45% في الضأن التركي، 28,8% في الضأن السودان، 11,1% في الضأن الصومالي، 1,1% في الضأن الروماني، 28% في الأبقار.

وتم توجد إصابة بالديدان الكبدية في الجمال المستوردة أو الضأن المحلي. وكانت نسبة الإصابة بحويصلات الديدان الشريطية 41% في الضأن التركي، 1,1% في الضأن السودان، 21% في الضان الأسترالي ولم تسجل الإصابة في الحيوانات الأخرى. سجلت الإصابة بالنفس الأنفي في ثلاثة من الحالات الخمسة. ودلت المسحات الدموية على بعض الحالات الإيجابية من نلغف أنفي ولكن لم تسجل إصابة بأي طفيليات دموية أخرى.