

Multiple Schistosome Infections

AN UNUSUAL CASE

BY

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INTRODUCTION

There are at least three schistosome species that may infect man in Rhodesia: *Schistosoma haematobium* Weinland 1858, *S. mansoni* Sambon 1907 and *S. mattheei* Veglia and le Roux 1929. It has often been recorded that a single individual may show concurrent infections of *S. haematobium* and *S. mansoni*. It has also been recorded (Blair, 1966) that *S. mattheei*, a parasite of sheep and cattle, may occur in man on rare occasions by itself or, more commonly, with either of the other two species.

Blair (1965) analysed the parasitological findings in 7,000 pairs of stool and urine examinations carried out in the course of epidemiological surveys. Considering only infections with *S. haematobium* and *S. mansoni*, it was found that eggs of the former species of worm, found only in the stool and not in the urine, were observed in only 1.2 per cent. of the proven cases. Similarly, *S. mansoni* eggs found only in the urine and not in the stool contributed only 1.0 per cent. of the proven cases. Of a total of 3,557 persons in the series known to have schistosome infections, only two cases were found where eggs of both species were present together in both stool and urine.

Infections With Three Schistosomes

Since 1965 a record has been kept of all persons whose stool and urine were examined in the course of epidemiological surveys. Since that date 27 instances have been recorded, 26 in Africans and one in a European schoolboy, where all three species existed in concurrent infections as shown below, the results being taken from a single urine and stool sample taken on the same occasion.

No. of Cases	Urine	Stool
18	<i>S. haematobium</i> and <i>S. mattheei</i>	Sm.
4	Sh.	Sm. and <i>S. mattheei</i>
2	Sh., Sm. and <i>S. mattheei</i>	Sm.
2	Sh. and <i>S. mattheei</i>	Sh. and Sm.
1	Sh.	Sh., Sm. and <i>S. mattheei</i>

It will be noted that in all cases *S. haematobium* eggs were found in the urine and *S. mansoni* eggs in the stool. *S. mattheei* was present in the urine in 22 cases and in the stool in the remaining five cases. Therefore in no case in this series were *S. mattheei* eggs found in the urine and stool of a single subject.

The Unusual Case

A young African, aged 25 years, with a double infection with *S. haematobium* and *S. mansoni*, has been under study since September, 1967, for other purposes (Blair *et al.*, 1969). The study included the examination of over 200 midday urine specimens of terminal urine and over 500 preparations of stool prepared from over 100 daily samples. He was given treatment on 10th July, 1968, and daily stool and urine follow-up has been continued.

Urine Specimens

S. mattheei eggs were identified in the urine for the first time on 5th March, 1968. *S. mansoni* eggs were seen in the urine for the first time on 15th November, 1967, seven weeks after the study began. Eggs of all three schistosome species were seen in a single specimen of urine on a total of seven occasions. *S. mansoni* eggs in association with *S. haematobium* eggs were recorded on a further 22 occasions and *S. mattheei* in association with *S. haematobium* only on a further 16 occasions.

Stool Specimens

Eggs of *S. mattheei* were first seen in the stools on 5th January, 1968, and on two subsequent occasions only, on 23rd and 27th July, 1968, i.e., immediately after treatment. On 23rd July eggs of all three species were found in the stool, the only occasion on which this occurred. Eggs of *S. haematobium* in association with those of *S. mansoni* only were recorded on 30 occasions, and *S. mattheei* eggs with those of *S. mansoni* on only two occasions.

Although it could not be recorded that the subject on any one day passed eggs of the three species from stool and urine, all three were found in urine on seven occasions and in stool on another single occasion.

DISCUSSION

It has been the experience of the authors that when repeated examination of stool and urine are made on a subject, there will be an increase in the chances of detecting multiple infections with

their anomalous portals of exit of eggs from the body. It is also interesting to record that it seems to be easier to detect multiple infections in both stool and urine after specific treatment has been given. This may be because it is easier for the observer to see eggs of the rarer species when the number of eggs of the predominant species has been reduced. An alternative possible cause for this phenomenon may be provocation of egg laying and excretion with the first actions of the drug.

REFERENCES

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Acknowledgments

We are grateful to Dr. V. de V. Clarke, Director of the Laboratory, and Dr. M. H. Webster, O.B.E., Secretary for Health, Rhodesia, for permission to submit this paper for publication.
