

The incidence of *Balantidium coli* among local and exotic pigs in Ibadan, Nigeria

by O. A. AKINBOADE, N. A. SADIQ and O. O. DIPEOLU

Dept. of Veterinary Microbiology and Parasitology, University of Ibadan, Nigeria.

RÉSUMÉ

Fréquence de *Balantidium coli* chez les porcs de races locale et exotique à Ibadan, Nigeria.

Une enquête a été effectuée sur l'importance de *Balantidium coli* chez les porcs à Ibadan, en Nigéria. Elle a porté sur 540 porcs dont 140 de race Large White Landrace et leurs croisements et les 400 autres de race locale, achetés sur divers marchés locaux de l'Etat d'Oyo pour l'abattoir d'Ibadan.

11 seulement des porcs de race locale, soit 2,75 p. 100, étaient porteurs de ce germe alors qu'un seul des porcs exotiques, soit 0,77 p. 100, était infecté.

La fréquence de l'infection n'a pas paru être influencée par l'âge et le sexe des animaux atteints.

Mots clés : *Balantidium coli* — Porcs locaux — Large White Landrace — Nigeria.

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Summary. — An investigation was conducted into the incidence of *Balantidium coli* in pigs in Ibadan. Five hundred and forty (540) pigs were involved, one hundred and forty of which were the exotic Large White Landrace and their crosses and the other four hundred (400) local breeds which were scavengers bought from various local markets in Oyo State of Nigeria and brought to Ibadan abattoir for slaughter.

Only 11 (2.75 %) of the local pigs carried the infection while 1 of the 140 exotic breeds (0.71 %) was infected with the parasite. There appears to be no influence of age and sex on the frequency of infection.

Key words : *Balantidium coli* — Local pigs — Large White Landrace — Nigeria.

INTRODUCTION

Balantidium coli is a protozoan parasite of various species of animals including man (6). There is not much information on balantidial infections of domestic animals, especially pigs,

in Nigeria. Yet pig production had increased rapidly in Southern Nigeria and increasing numbers are being slaughtered in the abattoir.

Various authors had described the parasite as a commensal, not important in animal production (2, 3, 5). RATCLIFFE (7) who

worked on the public health importance of *Balantidium* in pigs found that with intercurrent infection of *salmonella* species, *B. coli* was further elaborated by invasion and ulceration of the intestinal wall. ANDREWS (1) also found that *Balantidium coli* of man was transferred to pigs and rats.

In view of the current importance attached to pork meat as an alternative supplement to beef in Nigeria, an investigation was carried out on the incidence of *Balantidium coli* in pigs in Ibadan and to assess its role in animal production.

MATERIALS AND METHODS

Two centers were chosen for the study : the Ibadan abattoir and the piggery unit of the Teaching and Research Farm of the University of Ibadan. The pigs slaughtered at the Ibadan abattoir are scavengers raised under the extensive husbandry and were bought from all over the Oyo State ; those at the Teaching and Research Farm are exotic belonging to the large white Landrace and their crosses and are raised under intensive husbandry.

Fresh faeces were collected directly from the rectum of each pig before slaughter at the abattoir and faecal contents from the caecum and colon were also collected after slaughter. Only rectal collection of faeces was employed for the pigs in the Teaching and Research Farm since they were not slaughtered. Specimens from each pig were put in clean universal

bottles which were properly labelled and taken to the laboratory for further processing.

The direct smear and brine floatation methods were used for processing the faeces. In the former a small amount of faeces was placed on a glass slide and emulsified in two drops of saline and examined under low microscopic power. This method was used to detect mobile protozoans. In the brine floatation method, a saturated common salt solution was used to dissolve the faeces which were then strained through a sieve to remove coarse debris. The filtrate was then poured from the petri-dish into the centrifuge tube. This was allowed to stand for half an hour after which the supernatant fluid was pipetted out and small quantities of it dispensed on slides. A drop of iodine was added to the small dispensation on each slide and cover slip was placed on each of them. It was then examined under the microscope using X40 magnification.

RESULTS

As shown in Tables I and II, the incidence of *B. coli* in the indigenous and exotic pigs sampled was very low and sex and age played no role in the frequency of infection. Only one female exotic pig out of 140 sampled carried the infection. The faeces of most of the positive pigs were loose and blood-stained and trophozoite stages were more commonly seen than the cyst stages.

TABLE 1—The number of local slaughter pigs infected with *Balantidium coli* at the Ibadan abattoir

Age (Months)	Sex	Number Sampled	Number Infected with <i>B. coli</i>	Percent Infection
6 - 12	Male	80	3	3.75
	Female	60	2	3.33
13 - 18	Male	70	1	1.43
	Female	60	2	3.33
19 - 24	Male	70	2	2.86
	Female	60	1	1.67
Total Male		220	6	2.73
Total Female		180	5	2.78
Grand Total		400	11	2.75

TABLE II—The number of exotic pigs infected with *Balantidium coli* at the Teaching and Research Farm of the University of Ibadan

Age (Months)	Sex	Number Sampled	Number Positive	Percent Infection
6-12	Male	30	-	6
	Female	30	1	3.33
13-18	Male	20	-	-
	Female	30	-	-
19-24	Male	20	-	-
	Female	20	-	-
Total Male		60	0	0
Total Female		80	1	1.25
Grand total		140	1	0.71

DISCUSSION

Although most of the pigs sampled at the abattoir for this parasite were bought from various local markets in Southwestern Nigeria, it appears that the local pigs which are scavengers have very low incidence (2.75 %) while 0.71 % of the exotic pigs was infected with the parasite. The low percent parasitic infection though might probably not reflect the true field situation as has been suggested by SOULSBY (10), can be ascribed to a number of factors. *B. coli* is easily killed during a hot and dry weather and therefore the protozoan cyst which is the infective stage can be easily destroyed by desiccation or exposure to tropical heat (7). According to FUSTHY (4) *B. coli* infection depends on the acidity of the stomach and it is possible that the scavenger pigs had low acid in the stomach due to their intestinal flora and hence, reduce the degree of infection. The type of diet of the pigs may also affect the incidence of *B. coli* infection. Since local pigs feed on anything they come

across, it is possible that they have diet low in carbohydrate which reduces the degree of infection. Schumaker (9) observed that *B. coli* infection is favoured by a diet high in carbohydrate in the form of grains and that the degree of infection depends on the diet rather than the bacterial flora.

The result obtained on the exotic pigs is probably a reflection of intensive husbandry with good nutrition and hygiene. The administration of chemoprophylactic and chemotherapeutic agents to suspected pigs in the herd also has a role to play.

The fact that the faeces of most of the infected pigs were loose and blood-stained with a preponderance of trophozoites suggest that the infection is probably pathogenic to pigs. However, RICHARDSON and KENDALL (8) had argued that pigs are naturally resistant to balantidial infection and that its pathogenicity could only occur as a secondary infection or when the resistance of the host is lowered due to stress.

Although the bacterial flora of the intestine of the sampled pigs were not ascertained, the scavenger pigs had been generally exposed to the stress of transport from various local markets from where they were bought, to the Ibadan abattoir where they were slaughtered. This could have precipitated the pathogenicity of *B. coli* noticed in this investigation.

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Resumen. — Se efectuó una encuesta sobre la importancia de *Balantidium coli* en los cerdos, en Ibadan, Nigeria. De los 540 cerdos observados, 140 eran de raza Large White Landrace y sus mestizos y 400 de raza local comprados en varios mercados del estado de Oyo para el matadero de Ibadan.

Se encontró dicho parásito sólo en 11 cerdos de raza local, sea 2,75 p. 100, en cambio en 1 único cerdo de raza exótica, sea 0,71 p. 100. Ni el sexo ni la edad de los animales atacados parecen influir sobre la frecuencia de la infección.

Palabras claves: *Balantidium coli* — Cerdos locales — Large White Landrace — Nigeria.

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