

SHORT REPORT

A NEW CASE REPORT OF HUMAN *MESOCESTOIDES* INFECTION IN THE UNITED STATES

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Abstract. The twenty-seventh documented case of human *Mesocestoides* infection, which corresponds to the seventh documented case in the United States, is reported. The case had its origin in Alexandria, Louisiana in the summer of 1998. The patient was a 19-month-old boy. The strobila consisted of 35 proglottids that included mature as well as gravid segments containing a ventral genital pore and a parauterine organ. After a detailed microscopic examination, the tapeworm was identified as belonging to the genus *Mesocestoides*. *Mesocestoides variabilis* is the probable species responsible for the infection, since the six cases previously reported in the United States were identified as this species. After the treatment with a single dose of praziquantel (10 mg/kg), the tapeworm segments were no longer detectable in the child's feces. A food-borne origin of this infection derived from culinary customs of the Acadian and Creole communities in Louisiana is proposed.

Tapeworms belonging to the genus *Mesocestoides* have rarely been reported in humans. To date, only two *Mesocestoides* species have been recognized as occasional human parasites worldwide, *M. variabilis* and *M. lineatus*. The infection is always linked with the accidental and/or deliberate ingestion of raw viscera or blood containing the infective metacystode stage (tetrathyridium).

Until now, 26 cases concerning humans have been reported: 18 of these were due to *M. lineatus* (14 in Japan,^{1–3} 2 in Korea,^{4,5} and 2 in China^{6,7}) and 8 were due to *M. variabilis* or *Mesocestoides* sp. (6 in United States,^{8,9} 1 in the former Ruanda-Urundi,¹⁰ and 1 in Greenland¹¹). The cases in the United States were in Texas, Missouri, New Jersey, Ohio, Mississippi, and California.

The present case report had its origin in Alexandria, Louisiana in the summer of 1998. The patient was a 19-month-old boy. His mother was alarmed when she found several objects that seemed to be rice grains in the child's feces. The only symptom reported was diarrhea. After a complete coprologic analysis for parasites, *Giardia intestinalis* cysts and a short tapeworm strobila were detected. The tapeworm was examined at the School of Veterinary Medicine of Louisiana State University. The strobila consisted of 35 proglottids.

A part of the strobila was preserved in 70% ethanol and later examined at the Department of Parasitology of the University of Valencia in Spain. The tapeworm was identified after a detailed microscopic examination after clearing with lactophenol and staining with chlorhydric alcoholic carmine.

The tapeworm included mature as well as gravid segments (Figure 1) that contained a ventral genital pore and a parauterine organ. It was identified according to the characteristics and measurements shown in Table 1, corresponding to four mature and two gravid proglottids, as a member of the genus *Mesocestoides*. The fact that the detected strobila was initially inappropriately preserved made it impossible to use a greater number of proglottids for the morphologic measurements shown in Table 1, as well to obtain a better-quality photograph (Figure 1).

The results of coprologic analyses of the child's family were negative. After the child was treated with a single dose of praziquantel (10 mg/kg), tapeworm segments were no longer found in his feces.

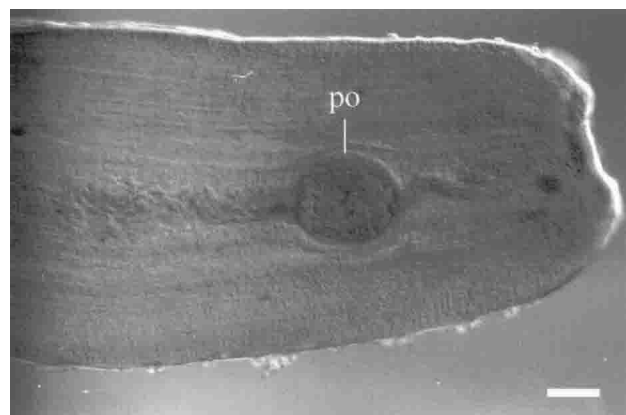


FIGURE 1. Gravid proglottid of the tapeworm isolated from the case in Louisiana. **po** = parauterine organ (chlorhydric alcoholic carmine-stained). Bar = 200 μ m.

This is the twenty-seventh documented case of human *Mesocestoides* infection and the seventh documented case reported in the United States. *Mesocestoides variabilis* is probably the species responsible for the infection, as in the six cases previously reported in the United States.

After a brief telephone interview with the child's mother and the referring physician, we learned that the family lived in

TABLE 1

Measurements of four mature and two gravid proglottids isolated from the patient

Mature proglottids	
Number of testes	18–80
Diameter of testes	19.9–42.7 μ m
Ovary	48.4–91.2 $\times$ 34.2–76.9 μ m
Vitelline glands	34.2–48.4 $\times$ 28.5–34.2 μ m
Genital pore	45.9–57.4 μ m
Cirrus sac	114.0–228.0 $\times$ 105.4–206.4 μ m
Seminal vesicle	99.7–228.3–59.8–111.1 μ m
Gravid proglottids	
Length	2.35–2.45 mm
Width	1.00–1.23 mm
Parauterine organ	298.7 $\times$ 275.7–287.2 μ m

the countryside and regularly consumed wild game. However, no tapeworm proglottids were found in feces samples of other family members. The mother of the child indicated she had recently prepared a local Cajun sausage containing wild animal viscera. This sausage was kept in the refrigerator and leftovers were stored in a freezer (-20°C) until use. In this case, the infection was possibly caused by only the first ingestion and not after the food was frozen. Thus, we propose a food-borne origin of this tapeworm associated with local dietary customs in the Acadian and Creole communities of Louisiana.

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