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 metacestode 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 China,4,5 and 2 in Indonesia,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.

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

<table>
<thead>
<tr>
<th>Mature proglottids</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of testes</td>
<td>18–80</td>
</tr>
<tr>
<td>Diameter of testes</td>
<td>19.9–42.7 μm</td>
</tr>
<tr>
<td>Ovary</td>
<td>48.4–91.2 × 34.2–76.9 μm</td>
</tr>
<tr>
<td>Vitelline glands</td>
<td>34.2–48.4 × 28.5–34.2 μm</td>
</tr>
<tr>
<td>Genital pore</td>
<td>45.9–57.4 μm</td>
</tr>
<tr>
<td>Cirrus sac</td>
<td>114.0–228.0 × 105.4–206.4 μm</td>
</tr>
<tr>
<td>Seminal vesicle</td>
<td>99.7–228.3–59.8–111.1 μm</td>
</tr>
<tr>
<td>Gravid proglottids Length</td>
<td>2.35–2.45 mm</td>
</tr>
<tr>
<td>Width</td>
<td>1.00–1.23 mm</td>
</tr>
<tr>
<td>Parauterine organ</td>
<td>298.7 × 275.7–287.2 μm</td>
</tr>
</tbody>
</table>
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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REFERENCES