HUMAN GONGYLONEMA INFECTION IN A RESIDENT OF NEW YORK CITY

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Abstract. A case of infection with Gongylomnae is described in a 41-year-old woman living in New York City. The patient sought medical attention with the complaint of a sensation of 1-year duration of something moving in her mouth. On two occasions she removed worms from her mouth, once from her lip, once from the gum. One of the specimens submitted for examination was an adult female Gongylomna. It is not possible to say whether the infection was acquired in New York City, or elsewhere, since the patient traveled frequently to Mississippi to visit relatives. As cases of delusional parasitosis continue to increase, clinicians and laboratorians alike need to be alert to the possibility that foreign objects removed from the mouth, or elsewhere, may indeed represent unusual parasitic infections, and that these objects should be examined before being discarded.

Members of the genus Gongylomnaea are spirurid nematodes that commonly infect ruminants throughout the world. The infection has been diagnosed in a variety of other animals, including humans. To date, there have been nearly 50 cases in humans described worldwide, including Europe, China, the Middle East, Australia, and New Zealand.1,2 Nine cases have been described from the United States, but the last report was in 1963.3-10 The present case serves as a reminder that Gongylomnaea can, on occasion, still be encountered in persons in the United States.

CASE REPORT

The patient, a 41-year-old woman, presented with a history of more than 1-year duration of having the sensation of a moving organism in her mouth. On two occasions, filariform worms were removed from the gum and lip. The patient herself removed the worms on each occasion. The patient also gave a history of reflux-like symptoms that may have signaled esophageal involvement as well. The specimen extracted from the lip was submitted for examination. The worm, in four pieces, was identified as a mature specimen extracted from the lip was submitted for examination. May have signaled esophageal involvement as well. The patient also gave a history of reflux-like symptoms that may have signaled esophageal involvement as well. The specimen extracted from the lip was submitted for examination. The worm, in four pieces, was identified as a mature female Gongylomnaea, most likely G. pulchrum. The total length of the pieces was 43 mm; the maximum diameter was 0.5 mm. The anterior end was thin and thread-like, covered with typical bosses (scutes) that were arranged in longitudinal rows (Figure 1A). The bosses began at the anterior end and extended posteriorly 1.1 mm. The esophagus measured 6.2 mm in length and was distinctly divided into a short anterior muscular portion and a long glandular portion. The ovejector was a large muscular structure, located 1.3 mm anterior to the anus, which was 0.2 mm from the tip of the tail. The posterior end of the worm was of greater diameter than the anterior end, and the tail was bluntly conical (Figure 1B). The uteri were filled with eggs, which contained fully developed larvae (Figure 1C). The eggs measured approximately 50 by 28 μm. Two stool concentration exams were negative for Gongylomnaea eggs.

Laboratory work-up of the patient included a complete blood count and a differential count; there was no eosinophilia and other laboratory parameters were within normal limits. The patient was treated with albendazole, 10 mg/kg for 3 days. The symptoms resolved following treatment and the patient has experienced no further episodes of sensation of worms moving in her mouth. However, an area of discoloration on the lip has persisted where the worm was removed.

DISCUSSION

Gongylomnaea, like other spirurids, requires an insect intermediate host to ingest the eggs, in which the larvae become encysted. When the insect host is ingested by an appropriate host, the larvae are freed and migrate to the esophagus or buccal cavity. Humans become infected by accidental ingestion of infected insects. Various species of dung beetle and cockroaches have been demonstrated to be suitable insect hosts. It has been suggested that most human infections result from ingestion of cockroaches.11

In humans, the worms tend to localize in the buccal cavity, including the lips, gums, tongue, and palate. In a high percentage of these cases, the sensation of a moving worm(s) is reported by the patient. In some cases, such as the present one, the worms are removed by the patients themselves, using their fingers. In others, the worms have been removed by inserting a needle under the worm in its tunnel. Symptoms, other than the sensation of something moving, may include local irritation, pharyngitis and stomatitis, and bloody oozing patches in the mouth.11

This case has several interesting features that deserve mention. It was evident that the infection was constituted of more than one worm, since worms were recovered on more than one occasion. Furthermore, the fact that the eggs observed in utero in the female worm contained larvae indicated that at least one male worm was present and that the worms had mated. Identifying exactly where the infection was acquired is not possible. The patient had traveled to Spain in 1987 and Italy and Egypt in 1988, some 10 years before the onset of symptoms, and it seems unlikely that the infection was acquired in any of those locations. The patient did travel frequently to Mississippi to visit relatives; however, it cannot be established whether the infection was acquired in New York City or elsewhere in the United States. Treatment in the case was initiated with albendazole. This was not based on any prior evidence that this drug is effective against Gongylomnaea, but on the recognized broad spectrum action of this drug, including efficacy against other tissue-dwelling nematodes.
Figure 1. Photomicrographs of Gongylonema sp. removed from the oral cavity of a patient in New York City. A, anterior end of the worm showing characteristic cuticular bosses (magnification \( \times 77 \)). B, posterior end of the worm showing typical shape of tail, and illustrating that the posterior end of the worm is appreciably greater in diameter than the anterior end (magnification \( \times 77 \)). C, higher magnification of eggs in utero showing larvae inside the eggs (magnification \( \times 380 \)).

With an ever increasing number of delusional parasitosis cases, clinicians and parasitologists alike need to continue to be alert to unusual infections. When patients give a history of a moving sensation in the lips, gums, tongue, or palate, the buccal cavity should be carefully examined to rule out the possibility of Gongylonema infection, and thin, thread-like objects that have been removed by the patient should be examined under a microscope before being discarded. The typical bosses on the anterior end of the worm make it easy to identify this worm and confirm the infection.

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