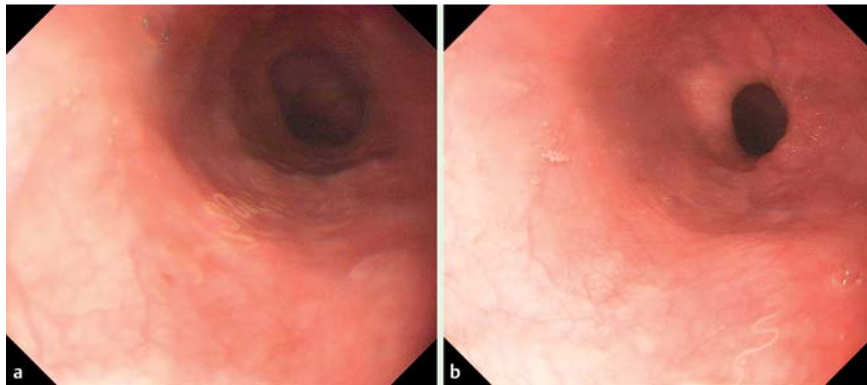
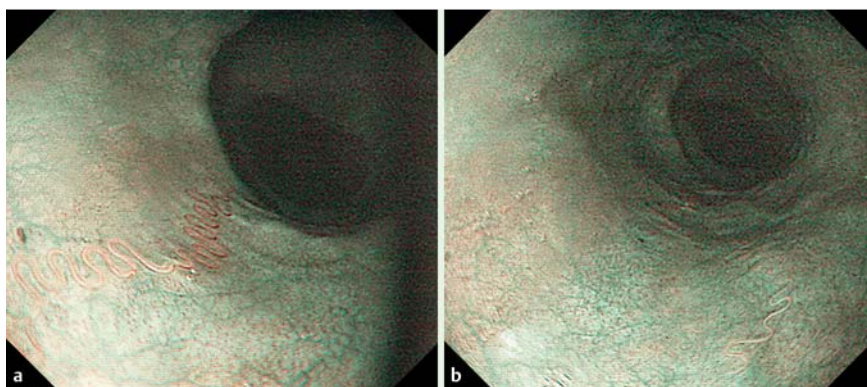


## Multiple *Gongylonema pulchrum* worms in a human esophagus



**Fig. 1** a, b Endoscopic views of two wormlike objects adhering to the esophageal mucosa at 32 cm from the incisors in a 42-year-old man with chest congestion of 1 month's duration.



**Fig. 2** a One of the wormlike object viewed on narrow-band imaging. b The other worm can be seen at the lower right corner.



**Fig. 3** The wormlike objects in normal saline.

A 42-year-old man was admitted to our hospital with chest congestion of 1 month's duration. He had no medical history. After physical and hematological examination revealed no abnormalities, gastroscopy was recommended.

Endoscopy showed two white wormlike objects, 3 cm long, adhering to the esophageal mucosa at 32 cm from the incisors (● Fig. 1 a, ● Fig. 1 b). The worms were also viewed on narrow-band imaging (● Fig. 2 a, ● Fig. 2 b). They were removed in one piece with a biopsy forceps and placed in normal saline (● Fig. 3). Parasitologists and pathologists at our hospital confirmed that the objects were *Gongylonema pulchrum*. No worm was found in the patient's oral cavity.

After the worms had been removed, the patient's symptoms decreased in a few days, and 3 months later, no parasite was

found during a second endoscopic examination. The patient has always lived in Beijing and never traveled abroad. He works as a waiter in a restaurant, and his living environment is relatively poor. He also likes to drink unboiled water.

*Gongylonema pulchrum* is a heteroxenous parasite found in the upper gastrointestinal tract of many ruminants. Embryonate eggs pass in the feces and are swallowed by coprophagous insects, which are the intermediate hosts. The definitive host becomes infected through the ingestion of larvae [1]. The accidental transmission of *Gongylonema pulchrum* to humans is due mostly to unsanitary conditions. Adult worms may remain as parasites in the human body for 1 year, sometimes up to 10 years [2].

Gongylonemiasis is not a serious public health issue because fewer than 200 cases

of human infection have been reported worldwide. In most cases, worms infect the oral cavity of a young person. The first case was discovered in Philadelphia, Pennsylvania, USA, in 1850 [3]. Subsequently, several additional cases were reported [4–6]. Feng et al. recorded the first Chinese case, and up until 2004, more than 110 cases were reported in China [2]. Our patient was infected with multiple *Gongylonema pulchrum* worms in his esophagus, which is extremely rare. We suppose that he was infected by contaminated water or food [2]. To our knowledge, only three cases of esophageal infection have been reported so far [7,8].

In patients infected by *Gongylonema pulchrum*, the symptoms vary depending on the parasite location. Symptoms of local irritation are frequent, including minor aches, foreign-body sensation, hypersalivation, nausea, and cough. In severe cases, patients may present with numbness of the tongue, hematemesis, and dysphagia. Hypereosinophilia is infrequent. Removing the worms manually with the fingers or a forceps is the most effective treatment, and the symptoms will disappear without further treatment. The administration of antibiotics or the local application of an antiseptic may facilitate worm migration in the mucosa.

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