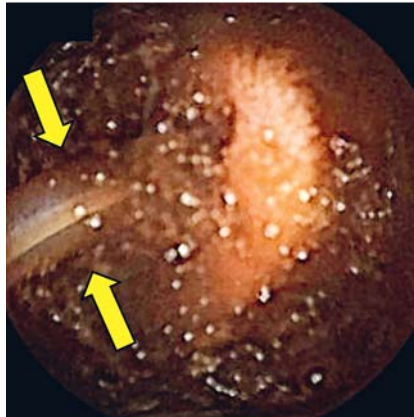


## *Ascaris lumbricoides* causing obscure gastrointestinal bleeding detected by double-balloon enteroscopy

A 79-year-old male patient was referred to hospital for investigation of microcytic hypochromic anemia. His previous medical history included coronary heart disease, cardiac insufficiency, chronic renal failure, percutaneous aortic valve replacement, and chronic atrial fibrillation with phenprocoumon as regular medication. He reported episodes of fatigue, no alteration of stools or stool color, and no other complaints. Physical examination showed unremarkable findings. Laboratory investigation showed microcytic anemia (hemoglobin 8.2 mg/dL). Upper and lower endoscopy showed no relevant abnormalities, but a large amount of blood was evacuated from the terminal ileum. Capsule endoscopy was performed and revealed a bleeding source in the middle jejunal region and a foreign body, suspected of possibly being part of a nasogastric tube (● Fig. 1).

As the patient needed transfusion of erythrocyte concentrates, a double-balloon enteroscopy was performed to diagnose and stop the gastrointestinal bleeding by removing the foreign body. During endoscopy a roundworm of length 22 cm (● Fig. 2) was extracted from the jejunum at approximately 140 cm post pylorus. It was identified as *Ascaris lumbricoides* (● Fig. 3). Local mucosal bleeding in the area where the roundworm could suck stopped rapidly after removal of the parasite (● Fig. 4). Oral mebendazol therapy for 3 days was initiated.

*Ascaris lumbricoides* is an intestinal roundworm, which is one of the most common helminthic human infections worldwide, especially in hot and wet climates, but it is rarely diagnosed in Western Europe [1]. Transmission usually occurs via ingestion of contaminated water or food [2]. In our patient transmission most likely occurred via a contaminated imported organic salad. Adult worms inhabit the lumen of the small intestine, usually the ileum or jejunum [3]. While the majority of infections are asymptomatic, severe symptoms may also be caused, such as bowel obstruction [4],



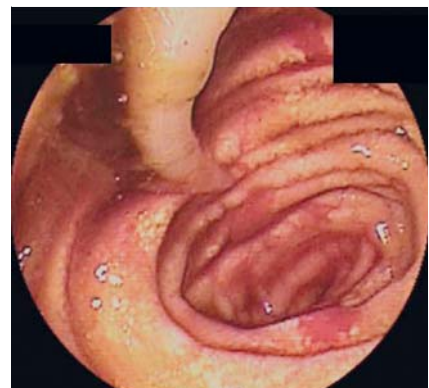
**Fig. 1** During investigation of microcytic hypochromic anemia in a 79-year-old man, capsule endoscopy showed gastrointestinal bleeding, with a foreign body (arrows) in the middle to distal jejunum



**Fig. 2** *Ascaris lumbricoides* after endoscopic extraction from the intestine.



**Fig. 3** Enteroscopic view of the middle jejunum, with the "foreign body" previously seen by capsule endoscopy.



**Fig. 4** Enteroscopic view of bleeding in the vicinity of the roundworm's "sucking" parts.

pancreatitis, cholangitis, or anemia resulting from direct tissue damage. In this patient the effect of the tissue damage was aggravated by anticoagulant medication, leading to continuing gastrointestinal bleeding. In general, in symptomatic patients treatment with antihelminthic drugs is advised.

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**Competing interests:** None

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