

# Sonographic diagnosis and follow-up in a patient with pancreatic roundworms

## A case report

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### Summary

Ultrasonography showed roundworms (*Ascaris lumbricoides*) in the main pancreatic duct of a child with acute pancreatitis. This method was used to follow-up gradual reversion to normal during medical treatment.

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One case has already been reported of ultrasonographic demonstration of a roundworm (*Ascaris lumbricoides*) in the main pancreatic duct after the diagnosis had been established by endoscopic pancreatography.<sup>1</sup> Other ultrasonographic diagnoses of this condition could be in process of publication. The case presented here shows that ultrasonography alone can be used to make the diagnosis and also to follow progress within the duct during medical treatment.

### Case report

A 6-year-old girl was admitted to hospital with severe pain in the right hypochondrium, which had been present for 4 days together with vomiting. The patient was tender over the liver, and severely so in the epigastrium. There was a leucocytosis of almost 24 000/mm<sup>3</sup>, 92% being neutrophils, but the patient was afebrile. The serum lactate dehydrogenase value was just over the upper limit of normal and serum alkaline phosphatase value was twice the upper limit. All other liver function tests were normal.

Ultrasonography was performed on the day after admission, after a provisional clinical diagnosis of amoebic liver abscess or roundworms in the main bile duct. The pancreas appeared prominent on ultrasonography and the possibility of acute pancreatitis was raised. It was only on retrospective review after the second ultrasonogram that a dilated main pancreatic duct containing longitudinal interfaces was seen on the first scan (Fig. 1). The lower end of the main bile duct was obscured by bowel but the rest looked normal with a diameter of 4 mm. The gallbladder and liver also appeared normal.

Oral treatment with mebendazole, active against *A. lumbricoides*, was started, together with ampicillin, metronidazole and antispasmodics. The serum amylase level was now found to be 927 U/l (normal 16-108 U/l)<sup>2</sup> and the urinary level 11 480 U/l (normal 50-600 U/l).

When ultrasonography was performed for the second time 5 days after the first scan, a dilated main pancreatic duct,

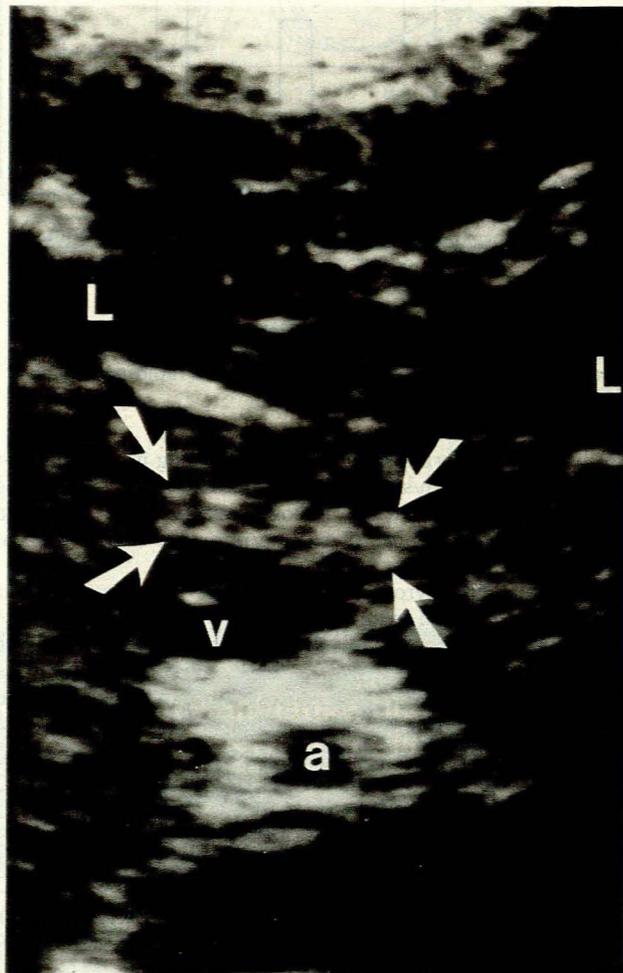


Fig. 1. Transverse ultrasonography of the pancreatic body (lower magnification than in Figs 2 - 4) on day 2. Multiple longitudinal interfaces are seen in the dilated pancreatic duct (arrows) (V = superior mesenteric vein; a = superior mesenteric artery; L = left lobe of liver).

containing a long, hyperechoic streak, was seen (Fig. 2). Three days later, during which time the patient passed roundworms per rectum, ultrasonography again showed a dilated main duct in the pancreatic body but with its lumen now empty (Fig. 3). After another 3 days, the duct was no longer dilated and was well below 2 mm in diameter (Fig. 4).<sup>3,4</sup> During this time, the patient improved clinically and the serum amylase value returned to normal.

There was neither history nor physical signs to suggest recent drugs, toxins, trauma, viral disease, systemic disease, sickle-cell disease or cystic fibrosis as a cause of the single attack of pancreatitis.<sup>5,6</sup>

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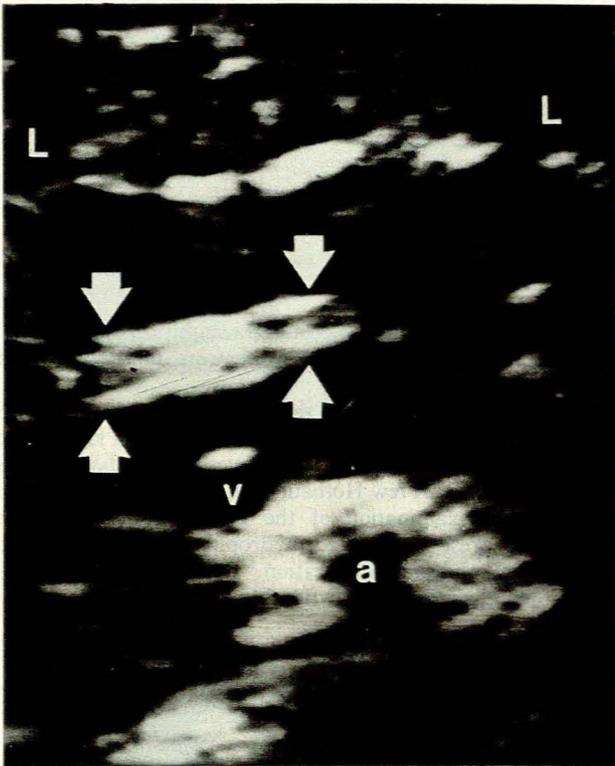


Fig. 2. Day 6 — a thick echogenic streak is seen in the dilated pancreatic duct.

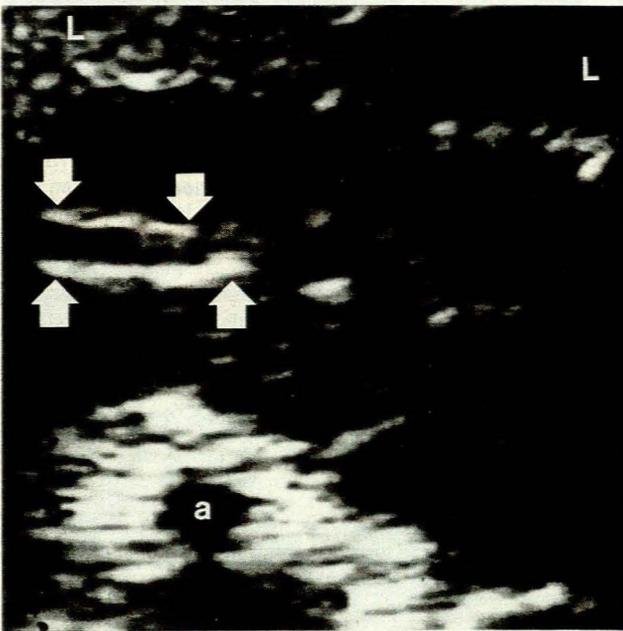


Fig. 3. Day 9 — the dilated duct is now empty.

## Discussion

Roundworms cause pancreatitis much less commonly than they do biliary symptoms. Nevertheless, because so many people are infested with them, they are an important cause of pancreatitis in the children and even in the adults of susceptible

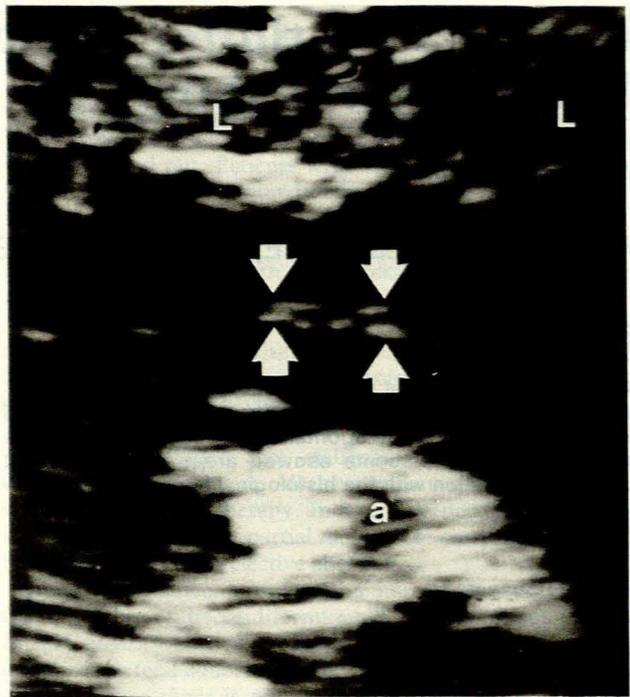


Fig. 4. Day 12 — the duct calibre is normal.

populations.<sup>7-11</sup> The primary cause of the pancreatitis is probably more often a worm in the ampulla of Vater rather than a worm actually in the pancreatic duct system.

Ultrasonography is the method of choice for imaging roundworms in the biliary system and their calculous complications.<sup>12,13</sup> This method has now been shown to also be capable of diagnosing at least some cases of worms in the main pancreatic duct and of monitoring the progress of conservative treatment. Endoscopic pancreatography<sup>14</sup> will still be needed if non-invasive methods do not provide a diagnosis sufficient for clinical management.

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