CASE REPORT
MECONIUM ILEUS WITH NO PANCREATIC ABNORMALITY

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Jennifer W., born on February 20, 1949, was the second child of healthy parents; the first child is quite well, and this pregnancy, labour, and delivery were quite normal.

Case Report
The infant had vomited about two hours after delivery, and continuously since, and there was no bowel action for the first forty-eight hours. She was then sent to Whipp's Cross Hospital with the presumptive diagnosis of intestinal obstruction.

On admission the baby was in fair condition; dehydration was not marked. She was still continuously vomiting bile-stained material. A straight radiograph of the abdomen showed that the gas-filled intestine ended abruptly in the left iliac fossa. This was interpreted as an obstruction at the junction of the descending and sigmoid colons. At operation that evening (Mr. S. G. Nardell) the abdomen was found to contain free yellow fluid. The small bowel was congested and grossly distended with fluid and gas to within a few inches of the ileo-caecal valve, after which point the intestinal contents changed to hard, putty-like meconium. The caecum and large intestine were collapsed and minute, the caecum about the size of a thumb-nail, and the colon about as thick as a matchstick. There was a volvulus of the whole of the small intestine so that the caecum lay in the left iliac fossa, and the gas-filled bowel, which was thought to be the descending colon, was in fact the small intestine leading to the caecum. The operator noticed, however, that the contents of the ileum could be forced forwards into the narrow caecum and colon, though with some difficulty. The anatomy of the parts was restored and the abdomen closed.

The baby was treated with intravenous fluids and continuous gastric suction, and had a very stormy forty-eight hours post-operatively. Then the bowels acted and meconium was freely discharged for the next twenty-four hours. The baby picked up and ultimately did very well. Her weight on February 28 (six days after operation), was 6 lb. 4 oz.; on discharge six weeks later it was 8 lb. 5 oz.

It is considered nowadays that meconium ileus is due to cystic fibrosis of the pancreas. With this diagnosis in mind, the baby's faeces were examined for trypsin. Analysis on February 25 showed that trypsin was present (by the x-ray film gelatin test) to a dilution of 1:20, and on March 14 to 1:640. These figures anticipated a diagnosis of pancreatic disease.

The baby did well at home for about a fortnight. On April 26 she sickened with gastro-enteritis, and was admitted to Plaistow Fever Hospital. There was no abdominal distension at that time. She was treated with subcutaneous and intragastric fluid drips, but the latter was not retained. Bowel action ceased abruptly on the morning of April 28, and gaseous distension began; she had a very small yellow stool on the following day after a glycerine suppository. Vomiting worsened, and she was admitted that day to Whipp's Cross Hospital, again suffering from intestinal obstruction; it seemed likely that this was due to adhesions following the operation. The surgeon advised conservative treatment, gastric drainage and intravenous fluids, and the baby responded. Her bowels started working again, and on May 4 she was being fed by mouth and had normal motions, but on May 6 she suffered a sudden relapse of the enteritis, and died that day.

Discussion
At the post-mortem examination the following day all the organs were seen to be macroscopically normal except the intestines. The small gut was congested and of normal calibre. All the coils were matted together, and the gut was adherent to the operation scar; the mucosa appeared normal. No obstruction could be found. The large gut was collapsed, gradually narrowing from a normal caecum, which was matted to the coils of the small intestine. Microscopically, the pancreas appeared normal, apart from early post-mortem change. The liver showed very early fatty infiltration, and the intestine petechial haemorrhages throughout the muscle coat, the red cells appearing quite fresh. In addition the whole wall was infiltrated by chronic inflammatory cells, mostly histiocytic-like in character, a small proportion of plasma cells and eosinophils also being present.

The findings at operation were exactly as described by Andersen (1946) in meconium ileus, even to the complicating volvulus. In this disease, usually due to insufficient pancreatic digestion, the meconium is too hard and too dry to be passed normally, thus causing a mechanical obstruction. In this patient, however, the pancreas was quite normal.
This uncommon finding questions the accuracy of the diagnosis. Farber (1944) mentions that occasionally inspissated meconium may be found in intestines obstructed for other reasons, for example, by stenosis of the ileo-caecal valve or volvulus, but in those circumstances it readily clears itself if the obstruction is removed. Could this infant have been suffering from a congenital volvulus? I think not, for the following reasons.

Barrington-Ward (1937), quoting Dott, writes: 'The brunt of the obstruction at first falls on the third part of the duodenum,' and, 'since the involved bowel has a free exit below to the colon, it does not become distended, but collapsed.' In this case, the duodenum was normal, the bowel was distended, and had not emptied itself into the colon, although there was no anatomical disturbance in the region where the bowel narrowed. Ladd and Gross (1941) agree with these two points. They state that as a rule symptoms do not arise during the first days of life, and some meconium is passed or is obtained by enema. Neither observation was true of this patient. They go on to say that when a true congenital volvulus is relieved, it is impossible to restore the normal anatomy, for the caecum and all the colon will remain on the left. Here, however, after reducing the twist, the operator easily replaced the caecum and ascending colon on the right of the abdomen. Plainly, this was not a congenital volvulus. It seems likely that the minor volvulus was due to the over-activity of a normal small gut.

Adamson and Hild (1939) report a fatality from meconium ileus, in which an ileocolic intussusception was found after death; this they ascribe to excessive peristalsis.

It was hoped at first that the baby would join the very small band of infants who have survived a meconium ileus, but having battled through the hazards of a second intestinal obstruction, she succumbed to gastro-enteritis.

I gratefully acknowledge the assistance of my colleagues at the two hospitals, and their permission to publish their findings.

REFERENCES