It would appear that an individual subsisting on the unsupplemented diet, as provided at the Hope Bay base, passes gradually into the subscorbutic state over a period of about 12 weeks. This is about the time taken for a saturated individual to develop scorbutic manifestations when completely deprived of ascorbic acid. In the absence of more accurate methods for the determination of the ascorbic acid content of the diet at the base, this time-lag suggests that the vitamin is present in negligible quantities or entirely lacking in the food provided. The importance of all personnel taking a regular ration of ascorbic acid cannot be over-emphasized.

At Hope Bay it was found that cuts and abrasions, particularly on the fingers, though more painful than in temperate climates did not take longer to heal. It seems reasonable that the delay in healing of such minor wounds observed by Pirie and his companions was due not to a diminished blood supply in low temperatures, as he thought, but to a deficiency of vitamin C.

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Two Rare Cases of Internal Strangulation

Internal strangulation is not a common type of intestinal obstruction. During my year of office as resident surgical officer at the Royal Victoria Infirmary, Newcastle-upon-Tyne, 55 cases of intestinal obstruction were operated upon and only five of these were internal strangulations, all of them volvuli. Four involved the small intestine and one the large intestine. Other volvuli of the large intestine were seen, but in none was the blood supply to the bowel in danger. Internal strangulation without volvulus is probably the cause of obstruction in less than 2% of cases and is associated with adhesions or internal herniation.

The following two cases are of interest both for their rarity and for the clinical signs with which they presented.

CASE 1

The patient, a man aged 20, was admitted on January 21, 1947, with a diagnosis of pelvic abscess due to acute appendicitis. This diagnosis was accepted and he was treated conservatively.

When seen on January 22 his condition was deteriorating. He gave a history of sudden onset of severe abdominal pain and he had vomited five or six times before admission. His vomiting was persistent and was associated with colicky pain and absolute constipation. It seemed certain from this history that he was suffering from acute intestinal obstruction.

On examination, however, the physical signs were most misleading. He looked ill; his pulse was 90 and his temperature 99.6° F. (37.55° C.). There was lower abdominal tenderness and rigidity, and rectal examination revealed a large tender mass in the rectovesical pouch, closely simulating a pelvic abscess. However, in view of the history and the obvious deterioration in the patient's condition, it was decided to perform a laparotomy. Pre-operative glucose-saline and gastric aspiration were started.

The operation was performed under spinal analgesia administered by Dr. E. I. Tate. A right paramedian incision was made, and when the peritoneum was opened there was an escape of foul-smelling blood-stained fluid. Gangrenous bowel was seen immediately deep to the incision, and on exploring further a volvulus was disclosed. On delivery into the wound two mesenteric cysts were observed at the apex, the larger being three to four inches (7.5 to 10 cm.) in diameter. The cysts had been lying down in the pelvis and had been readily palpated

per rectum. The volvulus affected the lower 8 ft. (2.5 metres) of small intestine, stopping just short of the ileo-caecal junction. The bowel was resected with an end-to-side anastomosis and the wound closed in layers with drainage.

Post-operatively, gastric aspiration and glucose-saline were continued until the patient passed flatus on the second post-operative day. Penicillin, 25,000 units three-hourly, was also given. He made a satisfactory recovery and was discharged on February 15.

Dr. K. R. Hill's report on the specimen stated that there was no evidence of intestinal mucosa in the cysts, but that they were probably enteric in origin.

CASE 2

This patient, a man aged 59, was admitted to hospital on December 1, 1948, with the diagnosis of appendix abscess. He gave a history of severe colicky pain, starting suddenly at 11.30 p.m. on the day before admission, with repeated vomiting. His bowels had been moved on the morning of admission (12 hours after the onset of symptoms), but he had not passed flatus since.

On examination the patient was ill and dehydrated and there was some distension of the lower abdomen, with tenderness on the right side but no rigidity. A soft mass below and to the right of the umbilicus was palpated. On rectal examination there was tenderness to the right side. His temperature was 98.6° F. (37° C.) and pulse rate 80. A diagnosis of acute intestinal obstruction with strangulation was made, and pre-operative treatment similar to that of Case 1 was begun.

The operation was performed the same evening. A general anaesthetic was given by Miss Knox. An infra-umbilical right-rectus-splitting incision was made, and on opening the peritoneum foul-smelling blood-stained fluid escaped. On further exploration gangrenous small intestine was found which was at first considered to be volvulus, but closer examination showed that about 5 ft. (1.5 metres) of the bowel had passed through a defect in the greater omentum and thus had become strangulated. The defect was situated in the middle of the omentum and was bounded by the colon above and by the omental vessels on either side. The bowel was resected and an end-to-end anastomosis was performed. The wound was closed without drainage.

Post-operative treatment was similar to Case 1 and the patient returned home on December 13. An omental defect is not mentioned as a cause of intestinal strangulation in the standard textbooks of surgery, so it can be considered a rarity.

COMMENT

It is interesting to note that both these cases had a diagnosis of appendix abscess on admission. In Case 1 there was justification for the diagnosis of pelvic abscess if only the physical signs were considered. Mesenteric cysts are rare enough not to be considered in the differential diagnosis. In the history, however, lies the clue to the diagnosis. It was much too short for the formation of a pelvic abscess; also, repeated vomiting and absolute constipation are not usually associated with pelvic abscess.

In Case 2 there was also a very short history which was suggestive of obstruction. The fact that the bowels had been moved after the onset of the pain did not rule this diagnosis out of court. The mass in the right iliac fossa was dissimilar from an appendix abscess, because it moved on respiration and had not the characteristic solid feel of an abscess.

In both cases persistent vomiting and pronounced dehydration contraindicated an appendix abscess, in which vomiting is usually reflex and is present only at the onset of the attack.

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