PRIMARY CARCINOMA OF THE ILEUM

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Apart from the duodenum, the small intestine in the adult may be justly considered a surgical "silent area." The rare intrinsic lesions are either inflammatory strictures or benign polyps, sarcomas, and cancers. Various estimates place the incidence of carcinoma in this region at 3 per cent of all carcinoma of the gastrointestinal tract (1) but the number of recorded cases, the hospital records, and individual experience would suggest that this figure is too high. In view of the variety and high surgical mortality of the condition, the following case of primary carcinoma of the ileum seems worthy of record.

CASE REPORT

S. S., aged thirty-two years, single, Japanese, was admitted to St. Bartholomew's Hospital on January 16, 1924. Twenty-four hours previously he was suddenly seized with severe lower abdominal pain followed by nausea and vomiting. At first the pain was confined to the lower abdomen, but later became generalized. Since the onset of pain, the bowels had acted once; the stool was apparently normal.

Previous History: Constipation had been marked over an indefinite period. One year previously a similar but milder attack of abdominal pain had caused the patient to spend five days in the hospital. At that time a roentgenogram of the alimentary tract showed some deformity of the duodenum and delay in the passage of barium from the ileum. The diagnosis was "intestinal stasis and toxemia."

Examination: The patient was acutely ill, with a distended, firm abdomen. No coils were observed. On rectal examination a firm mass was felt above the prostate, apparently in front of the rectum. The temperature was 101° F.; pulse 104; respiration 24. The urine was essentially negative. The blood count showed 4,200,000 red cells, 13,500 white cells, with 80 per cent polynuclears.

Under expectant treatment, the patient improved steadily. On the third day he was seen in consultation by the author and operation was advised, on a diagnosis of partial intestinal obstruction. A barium enema on the tenth day revealed a constriction in the sigmoid colon. The patient left the hospital the following day and returned for operation three weeks later.

Operation: A low median incision was made under ether anesthesia. Several loops of adherent ileum and sigmoid formed a cone-shaped, inflammatory mass buried in a very narrow cul-de-sac. The entire mass was separated from the bladder and the cul-de-sac packed temporarily. About 15 cm. of ileum and mesentery with a growth at its center were resected. End-to-end anastomosis was done. On account of the adhesions in the pelvis, a side-to-side anastomosis of ileum to transverse colon proximal to the site of the resection was carried out to obviate postoperative obstruction. The packing was removed, 600 c.c. of 8 per cent glucose solution was left in the peritoneal cavity, and the abdomen was closed with a cigarette drain at the lower angle of the incision. During the anastomosis the patient stopped breathing and artificial respiration was necessary for five minutes.
FIG. 1. CARCINOMA OF THE ILEUM PROBABLY HAVING AS ITS PRECURSOR A BENIGN ADENOMA

Note in this specimen the tendency of carcinoma of the intestine to spread laterally as it penetrates the gut wall so that the tumor appearing upon the peritoneal surface (B) is much larger than the mass projecting from the mucosa (A). Specimen 784.

FIG. 2. OPERATIVE FIELD; TUMOR IN SITU

The peritoneal surface of the tumor mass had become adherent to the sigmoid, producing a stricture in the latter. Specimen 784.
Pathological Report: The specimen consisted of 15 cm. of small intestine with a soft, reddish, slightly elevated tumor mass 2 x 2.2 cm. in area on the mucosal surface. The mass penetrated the intestinal wall, appearing on the peritoneal surface as a flat, slightly raised plaque with indurated margins 4 x 3 cm. in area.

Microscopic Examination: Adenocarcinoma.

The postoperative course was stormy for seven days, thereafter uneventful. Discharged on the twenty-eighth day, the patient made a speedy convalescence, shortly returning to his occupation as a valet, which he continued until his departure for Japan Nov. 12, 1927, three and a half years after operation.

Fig. 3. Carcinoma Of The Ileum

This type of carcinoma is rapidly invasive. Anaplasia, heterotopia, hyperchromatism, and abundance of mitoses characterize the cellular elements. There is also a moderate amount of newly formed connective tissue infiltrated with lymphoid cells. Specimen 784.

Shortly before leaving America, he had a general examination, including x-ray studies of the alimentary tract. Apart from one brief attack of abdominal pain, due apparently to food disturbance, his general condition was good. The x-ray studies demonstrated a small amount of gastric retention, dilatation of terminal coils of ileum with reflux on administration of the enema, and angular deformity of the transverse colon; the meal was completely evacuated in fifty-four hours.

In a series of 3,535 cancers of the stomach, small intestine, colon, and rectum, 24 were found in the small intestine (2). The incidence is highest at the ends of the small intestine. The lesions may be divided into polypoid, plaque, and encircling forms. A tendency to multiplicity is noticeable, especially in the jejunum. Adenocarcinoma is the chief type, and gelatinous or colloid change is not uncommon. The regional lymphatic nodes may or may not be involved, but carcinosis of the peritoneum is uncommon. In
the recorded cases, males preponderate (3). The age incidence is similar to that of carcinoma in general, the extremes reported being three and a half and eighty years (4).

SYMPTOMATOLOGY

In view of the fluid nature of the contents of the small intestine, early symptoms of a definite and obstructive character are not to be expected. Yet in many cases there have been for months minor disturbances which may well be explained by reversal of the "intestinal gradient." Historically, the cases fall into two groups. In the one there are mild indefinite disturbances for a very brief period, followed by the abrupt onset of symptoms and signs of an acute abdominal catastrophe due either to acute obstruction or acute perforation. The obstruction in these cases is usually due to intussusception. In the other and far larger group, the course is that of a chronic progressive intestinal obstruction with exacerbations and periods of remission, not uncommonly of a year's duration.

DIAGNOSIS

In the small group with sudden onset and violent symptoms positive diagnosis will be made at operation or at autopsy. In the slowly developing group a careful consideration of the history, the character of the pain, the vomiting and usually notable weight-loss, combined with a careful physical and roentgen examination, should establish a diagnosis of organic obstruction of the small intestine and indicate imperative surgical intervention. The pain is situated in the mid-abdomen, is colicky in character, often has a time relation to food, and is usually relieved by vomiting. Vomiting, a usual feature, may be as late as four hours after taking of food. The material is frequently bile-stained, and analyses may show evidences of pancreatic digestion (5). Physical examination sometimes reveals slight distention; "coils" may be present, especially in low ileal obstruction; visible peristalsis is very rare.

A small, firm, movable lump may be palpable. It is noteworthy that a lump, when present, shows a great tendency to drop down in the abdomen—it may be felt on rectal examination.

Roentgen examination is of the highest value in demonstrating and locating the obstruction. Arrest of the meal should arouse suspicion. If, in addition, the proximal gut is dilated, surgery is urgently indicated (6).

Stool-tests for occult blood are rarely negative, but their diagnostic value is doubtful. Evidence of high intestinal obstruction may be shown by the demonstration of high urea, low chloride, and low carbon-dioxide-combining power of the blood (7).
To summarize: an unequivocal case for organic obstruction is made by the triad of colicky pain, vomiting and constipation, a notable weight-loss, and x-ray evidence of arrest and proximal distention. Preoperative diagnosis of the nature of the lesion is mere guesswork.

**Differential Diagnosis**

Superficially, there is a strong resemblance between chronic progressive obstruction of the small intestine and the large group of dyspepsias with indefinite symptoms. Little wonder need be felt, therefore, at the lack of diagnostic accuracy evidenced by the preoperative histories of these cases. Chronic ulcer of the stomach and duodenum, chronic gallbladder disease, and chronic appendicitis, excusably present themselves to the physician’s mind, and treatment is directed to an unproved lesion. The need for thorough investigation should be emphasized; lesions of the stomach, duodenum, gallbladder, colon, and rectum can, and should be, excluded, and the obstruction located in the small intestine, where its nature can be positively determined only by exploratory operation. The pathological possibilities are bands, Meckel’s diverticulum, internal hernia, inflammatory stricture, and neoplasm.

**Treatment**

The presence or absence of obstruction governs procedure. If obstruction is present, therapy should in the first instance be directed to its relief. Here the intravenous administration of sodium chloride solution is of great value. Thereafter enterostomy is of primary importance and may in suitable cases be combined with exteriorization of the affected loop in the first stage of a resection of the Mikulicz type. In the absence of obstruction, immediate resection of the affected loop, if possible, may be practised, followed by a suitable anastomosis. When radical measures are contraindicated by extensive disease, a palliative enterocolostomy may be of service.

**Summary**

1. A case of carcinoma of the ileum is reported in a young patient who is alive and apparently well six years after radical operation.
2. There was sufficient clinical and radiological evidence to warrant surgical intervention one year before the actual operation.
3. The growth was much more extensive on the peritoneal than on the mucosal aspect of the gut, recalling the well-known fact that the size of a cancer of the rectum, as seen through the proctoscope, is no criterion of its extent through or beyond the gut wall.
References