AVULSION OF MESENTERY WITH GANGRENE OF SEGMENT OF SMALL BOWEL (ILEUM) FOLLOWING NON-PENETRATING TRAUMA OF ABDOMEN*

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AVULSION OF THE mesentery of the small bowel due to non-penetrating trauma to the abdomen is rare and is usually accompanied by a high mortality. In 1929, Bost[1] described one large traumatic mesenteric blood cyst and two cases of penetrating wounds of the abdomen in which three and a half, four, and three inches, respectively, of small intestines were separated from the mesentery. These patients recovered without resection, the affected loop being wrapped with omentum (as Sir David Wilkie [1911] had described in experiments with cats). In 1942, Murless[3] described a case of transverse rupture of the mesentery complicated by arterial embolism, following a crush injury to the abdomen. Murless states that this injury is rare, and the mortality rate given by various writers varies. Sencert and Ferry, as quoted by Murless, report 34 cases of various types of injury to the mesentery and intestines, of which 13 recovered.

Poinot and Doutre,[4] in 1947, reviewed 15 cases of avulsion of the mesentery. The authors draw attention to the fact that in these cases the severance of sympathetic fibers may give rise to late complications (paralytic ileus, atelectasis) which should be dealt with by novocain block, and advocate infiltration of the sympathetic system during first intervention.

McCoy and Crumbley,[2] in 1952, reported a case of intestinal obstruction due to intussusception secondary to mesenteric injury. In addition to diagnosis of intussusception, an enteroenteric fistula and volvulus, all of the mid-ileum, were noted; the case was of interest because the possibility was raised that the mechanism of the intussusception was due to mesenteric trauma, or inflammation secondary to trauma to the mesentery.

The following case is presented not only because of its rarity, but to demonstrate the necessity for early diagnosis and operation.

CASE REPORT

Mrs. H. F. R., Case No. 105,268, a 36-year-old housewife, lost her footing at the top of a flight of stairs and tumbled 25 or 30 steps to the bottom. She was dizzy momentarily, and did not remember clearly what portion of her body struck with the greatest force, but believed that her abdomen caught most of the fall. The accident occurred about 9 A.M. on August 22, 1953.

She suffered mild pain in both shoulders, back, and lower abdomen, and vomited once immediately following the fall. Vomitus was described as recently ingested food, containing no blood or coffee-colored material. Pain was not severe enough during the day and that night to cause her much concern, and she was able to get around the house with only mild discomfort.

The following morning the patient had a bowel movement of normal consistency, but she described it as very dark brown in color, but not red or black. Later that morning she became anorexic, nauseated, and suffered with moderate dull aching lower abdominal and right and left shoulder pain, which persisted all morning and afternoon. The abdominal pain became progressively more severe. Pain was two-fold; there was a constant dull aching lower abdominal discomfort, accompanied by intermittent sharp stabbing pains in the lower abdomen and periumbilical region. The sharp stabbing pains became rapidly more severe, and intervals between pains became shorter. The only thing taken by mouth that day was promptly vomited. Vomitus was described as a dark brownish fluid.

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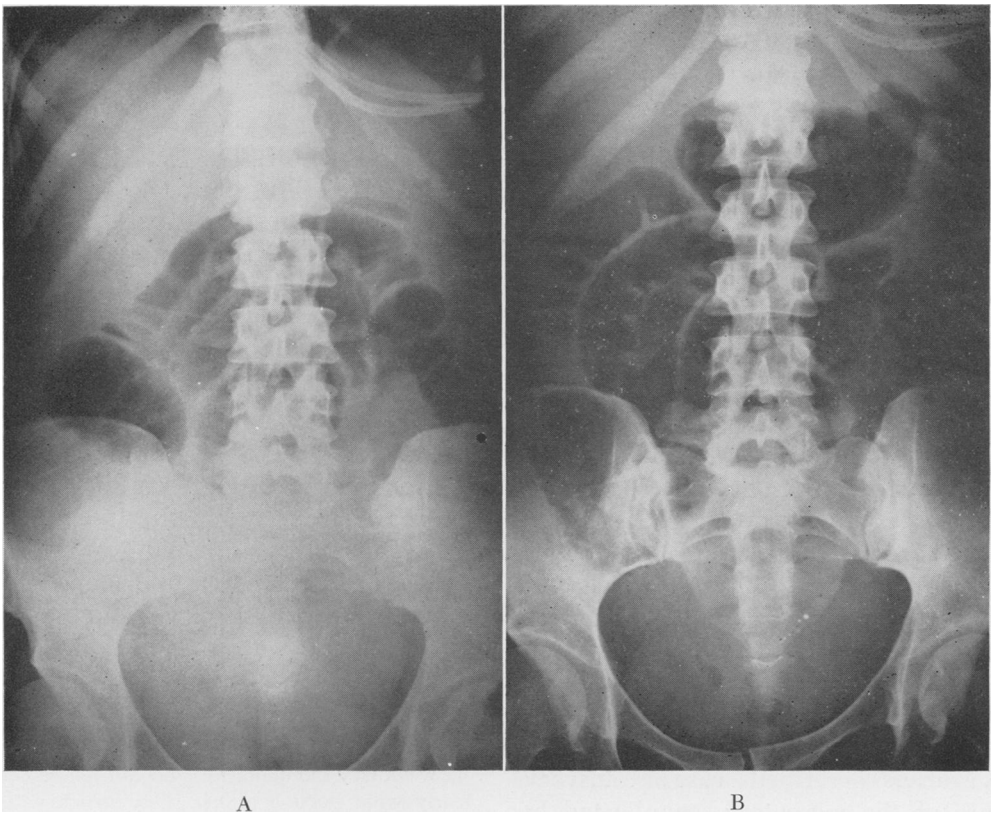

FIG. 1. Horizontal and vertical films of abdomen showing distended loops of small bowel without fluid level.

On admission to Jefferson Hospital at 11:30 P.M., August 23, 1953, she was having very severe abdominal and bilateral shoulder pain. Physical examination revealed an acutely ill woman. B.P., 122/70; P., 90; R., 20; T., 99.2. The examination was negative except as follows: There was a suprapubic bluish discoloration. There was moderate abdominal distention with no visible masses or peristalsis. Palpation of the abdomen revealed marked generalized tenderness over the entire abdomen, and marked rebound tenderness and spasm. Auscultation indicated absence of peristalsis over the entire abdomen, except for a few diminished peristaltic sounds in the epigastrium. Rectal examination revealed no masses, but there was extreme tenderness on digital examination. Pelvic examination revealed menstrual blood in the vagina, and generalized tenderness to palpation, most marked on the left and left cul-de-sac fullness. W.B.C. was 6,250; Hb., 8.5 Gm.; roentgenogram upright and flat plate of the abdomen is shown in Figure 1.

The patient was given morphine sulfate, gr. 1/6, and a Levin tube was inserted. A brownish green fluid was lavaged. Impression was: (1) ruptured ovarian cyst, or (2) ruptured ectopic pregnancy. An immediate operation was advised. Under general anesthesia the abdomen was explored through a right rectus incision. At least 500 cc. of thin, dark, hemorrhagic fluid was seen on opening the peritoneal cavity. A section of upper ileum, 10 to 12 cm. in length, was gangrenous, and there was an avulsion of the mesentery of the gangrenous portion of bowel, with active bleeding from a mesenteric artery of moderate size. Thorough exploration revealed no other lesion. Blood was aspirated from the peritoneal cavity, and the gangrenous bowel was resected. An end-to-end anastomosis was performed.

Postoperatively she was placed on continuous nasogastric suction; intravenous fluids and penicillin and streptomycin. Patient made an uneventful recovery and was discharged asymptomatic.

DISCUSSION

Non-penetrating injury causing avulsion of the mesentery of the small bowel and

hemorrhage from a mesenteric artery is an unusual abdominal injury. It is quite evident that in this case avulsion of the mesentery resulted from a fall down a flight of stairs some 38 hours before admission. The suprapubic discoloration should have led us to suspect intra-abdominal hemorrhage. The passage of a dark brown stool should have suggested possible intraluminal hemorrhage or sloughing of necrotic bowel tissue. Resection of the gangrenous bowel with end-to-end anastomosis plus ligation of the bleeding artery and suturing of the torn mesentery, were followed by an uneventful recovery.

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