

PERFORATION OF AN ACUTE PEPTIC ULCER

Report of a Case*

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The following case is reported because perforation of an acute peptic ulcer had occurred 24 hours before operation was performed.

The patient was a man who was admitted to the Cleveland Clinic Hospital about 6:00 p. m. on August 15, 1934. His chief complaint was of "pain in the abdomen." At 8:00 p. m. on the preceding day, excruciating pain in the epigastrium suddenly occurred while the patient was lying down. This was so severe that it made the patient jump up, and then he was doubled over from pain. Vomiting and a cold, clammy sweat followed, and the pain soon became somewhat less intense. During the night the patient felt better, although he had generalized abdominal discomfort. In the morning, the pain became more severe and seemed to be localized somewhat in the right upper abdominal quadrant. The family physician made a diagnosis of acute cholelithiasis, and morphine was administered hypodermically. This eased the pain slightly, but as the day progressed, the pain increased in severity, and another hypodermic did not relieve it to any appreciable extent.

The past history was irrelevant except that vague gastro-intestinal symptoms had been present for several years, and diagnoses which varied from colitis to disease of the gall bladder had been made.

Physical examination at the time of admittance revealed an asthenic type of individual, 50 years of age, who had anxious facies. The pupils were almost pin-point in size and showed little, if any, reaction—this undoubtedly was due to the morphine which had been administered. The tongue was only moderately moist. An adenoma of the right lobe of the thyroid was present, and the excursions of the thorax were limited by the abdominal pain.

Examination of the abdomen revealed it to be board-like—the rigidity was slightly more marked in the upper quadrants. While tenderness was present throughout, this was more pronounced in the right upper quadrant just beneath the costal margin. Liver dullness was obliterated. The temperature was 98.6° F., and the pulse rate was 130 per minute. No other abnormalities were found. A diagnosis of perforated peptic ulcer was made, and the patient was prepared for operation.

A vein in the region of the left ankle was exposed, and the continuous intravenous administration of glucose was inaugurated. When the peritoneum was opened through an upper right rectus incision, gas escaped and quantities of greenish gray, cloudy fluid, and what

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appeared to be gastric contents, welled up into the incision. This was aspirated, and depression of the liver border revealed a large collection of fluid—possibly 12 ounces—between the liver and the diaphragm. This fluid was aspirated also. There were numerous, easily broken adhesions in the region between the pylorus, the omentum, and the gall bladder, and when these adhesions were freed, more of the same type of fluid appeared. Upon exposure of the pylorus and duodenum a perforation about one-half inch in diameter was found on the anterior surface just at the pyloric ring. A plication was performed, and a piece of omentum was sewed over this area. A thorough toilet of the upper abdomen was made with normal saline solution. Two cigarette drains, one near the site of the ulcer, and the other in the left sub-diaphragmatic area, were put in place, and the abdomen was closed. A McBurney's incision was made on the right side, and upon opening the peritoneum, a large quantity of fluid similar to that encountered previously was evident. This was aspirated as thoroughly as possible, and two cigarette drains were placed into the pelvis. Through a left McBurney's incision, the same welling up of fluid was encountered, and this was treated in a similar manner, one drain being placed into the pelvis and another lateral to the mesosigmoid.

Postoperatively, to combat the peritonitis and the possible occurrence of paralytic ileus, hot stupes were applied to the abdomen, and one cubic centimeter of pitressin was administered every four hours for three days. On the first morning after operation, transfusion of 500 cc. of whole blood was given. From 3,000 to 3,500 cc. of 10 per cent glucose solution was alternated with physiological saline solution by the continuous intravenous route daily. This was discontinued on the fifth postoperative day, and the surgical Sippy routine was begun. On the fifth postoperative day, a wound infection developed which was drained. The drains into the peritoneal cavity and in the McBurney's incisions were shortened and finally removed on the tenth and on the twelfth postoperative days respectively. The patient's maximum temperature was 101.2° F., and it became normal on the ninth day postoperatively and remained there throughout the remainder of the hospitalization.

At the time of discharge, the patient was instructed to remain at rest in bed for at least another week, and a surgical Sippy diet was prescribed. A recent report from this patient informs us that he is making a satisfactory convalescence.

The immediate diagnosis of perforation of a peptic ulcer is very important because with each hour of delay, the chance for recovery becomes less and the death rate rises rapidly after perforation has been present twelve hours. In a series of seventy-five cases reported by James and Matheson,¹ the mortality was 100 per cent in those cases

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where perforation had been present for more than 24 hours before operation. Probably the two most important conditions to be differentiated from a perforated ulcer of this duration are cholelithiasis with biliary colic and an acutely inflamed appendix which has ruptured. The initial pain which is associated with perforation of an ulcer occurs one or two hours after eating when the stomach is full, or at the time of some vigorous exercise. The tenderness and rigidity is more marked and widespread than in biliary colic. The location of the point of maximum tenderness, the sudden onset of excruciating pain, and obliteration of liver dulness should indicate perforation of a peptic ulcer. In this case, the point of maximum tenderness was beneath the costal margin and not in the appendiceal region.

That the absence of liver dulness is not pathognomonic of perforated ulcer is illustrated by a case which recently was observed here in which a diagnosis of peptic ulcer had been made several years previously. At our recent examination, in addition to the findings which indicated the presence of an acute perforation, obliteration of liver dulness was noted and a diagnosis of acute perforation of peptic ulcer was made. Immediate operation revealed a ruptured gangrenous appendix.

The treatment of peptic ulcer from eighteen to twenty-four hours after perforation is, of course, immediate operation. In recent years, the treatment of choice has been a simple plication of the ulcer with reenforcement by omentum of the suture line. As much of the fluid and gastric contents as possible should be aspirated from the peritoneal cavity, because the fluid is no longer sterile. This includes a careful toilet with normal saline solution at the site of the ulcer, and beneath the diaphragm because sub-diaphragmatic abscess is a fairly common complication of this condition. In spite of the trend to close the peritoneum without drainage, we believe it is advisable to use drainage, because in such a case as this, if the McBurney's incisions had not been made and the soft rubber drains inserted, the intestines would have been bathed in purulent material, which undoubtedly would lead to peritonitis and obstruction.

When perforation has been present for as long as 24 hours, the patient is a poor surgical risk. The general condition should be supported during operation by the continuous intravenous administration of 10 per cent glucose and normal saline solutions. This is started before operation and continued for several days. Blood transfusions also should be used when indicated. Postoperatively, the occurrence of paralytic ileus must be combated, and this was done efficaciously in this case by the use of hot stupes and pitressin.

Dependent upon the condition of the abdomen, food by mouth

should gradually be taken on some plan such as the surgical Sippy routine. After discharge from the hospital, adequate follow-up treatment should begin, and the routine for the management of ulcers should be prescribed, because recurrence of the ulcer may occur. We feel that thorough removal of as much fluid as possible over the liver and in the pelvis contributed greatly to the favorable result in this case.

REFERENCE

1. James, T. G. I. and Matheson, N. M.: Acute perforation of peptic ulcers. *Lancet*. 1:945-946, May 5, 1934.