GIANT BENIGN DUODENAL ULCER

REPORT OF A CASE*

GEORGE EVASHWICK, M.D.

TURTLE CREEK, PA.

FROM THE VETERANS ADMINISTRATION HOSPITAL, ALBUQUERQUE, NEW MEXICO

ORDINARILY, ULCER CRATERS in the duodenal bulb are small, ranging from 0.4 to 1 cm. in diameter. However, there have been 11 previously reported cases of giant duodenal ulcer with craters ranging in size from 2 cm. in diameter to 5 x 4 cm. In 1931 the entity of giant benign duodenal ulcer made its first appearance in medical literature when Brdiczka[1] reported three cases. Since then Knutsson[2] presented four, Freedman and Goehring[3] reported two, Elkin[4] reported one, and Kahlstrom[5] reported one, so that the case being presented represents the twelfth of its kind. Of these 12 cases only four were diagnosed antemortem; the unrecognized cases died of hemorrhage or complications of hemorrhage. Since the failure to recognize this condition results so commonly in the death of the patient, the purpose of this report is to alert roentgenologists and surgeons to its existence, so that early diagnosis may lead to timely surgery.

ROENTGENOLOGIC FINDINGS

It is easy to understand how a usual duodenal ulcer could be missed on roentgenographic examination because of its small size, but it may seem strange that such large ulcer craters should be missed. In most of these cases the ulcer was so large that the crater had the appearance of a normal duodenal bulb, so that a report of a normal upper G.I. tract was made. On fluoroscopy it has been noted that the contrast material rushes in and fills the crater rapidly but emptying is very slow and the wall of the crater remains smooth, rigid, and unchangeable. Because the nonulcerated portion of the wall is stretched, the normal mucosal pattern and radiating mucosal rugae are not seen. A constant narrowing of the pars superior of the duodenum, due to spasm distal to the ulcer crater, led to a diagnosis of stenosis of the pars superior in two cases; in another case a small irregularity was thought to be a diverticulum. In this case, as in most of the others, the duodenal bulb appeared normal even on postmortem review of the films (Fig. 1). Postmortem review of the films revealed a persistent air bubble in the duodenum when it was empty (Fig. 2). This finding was not mentioned in any of the other reported cases. Repeated fluoroscopic examination is urged where there is any suspicion of abnormal rigidity or delayed emptying of the duodenal bulb.

CASE REPORT

This 50-year-old bricklayer was first admitted to the Medical Service of this hospital on September 16, 1948, with complaints of pain in the right upper quadrant, anorexia, and flatulence for 2 years, worse for the past 3 months. Pain was related to intake of fatty foods and fresh fruits and lasted for several hours after eating. On several occasions he had nausea and vomiting accompanying severe bouts of pain, and in June, 1948, on one occasion he had vomited brownish-black material. Because of fear of pain and "bloating" he began to skip meals and eat less and, as a result, he lost 20 pounds in weight. For the past year he had been treated by his family doctor after he had been told he had gallstones. On 2 occasions he had mild jaundice with severe attacks of pain, but he was

* Published by permission of the Chief Medical Director, Department of Medicine and Surgery, Veterans Administration, who assumes no responsibility for the opinions expressed or conclusions drawn by the author. Submitted for publication April, 1950.

not hospitalized for treatment or work-up, and it cleared up in a "few days." His stools became light colored, while his urine was dark and frothy. On three occasions he had had black stools with an occasional streaking of bright blood which he had been told were due to hemorrhoids. The last occasion of melena occurred in June, 1948, while he was being treated for "gallbladder disease" by his family physician.

rigidity. Liver was not enlarged. Large external hemorrhoids were present. Prostate was slightly enlarged but normal in consistency and not tender. The remainder of the physical examination was normal.

Laboratory findings on admission were: hemoglobin 13 Gm. per 100 cc.; WBC 16,950/mm.^{3} with 75 per cent polys, 23 lymphocytes, and 2 monocytes; serum bilirubin was less than .25 mg.

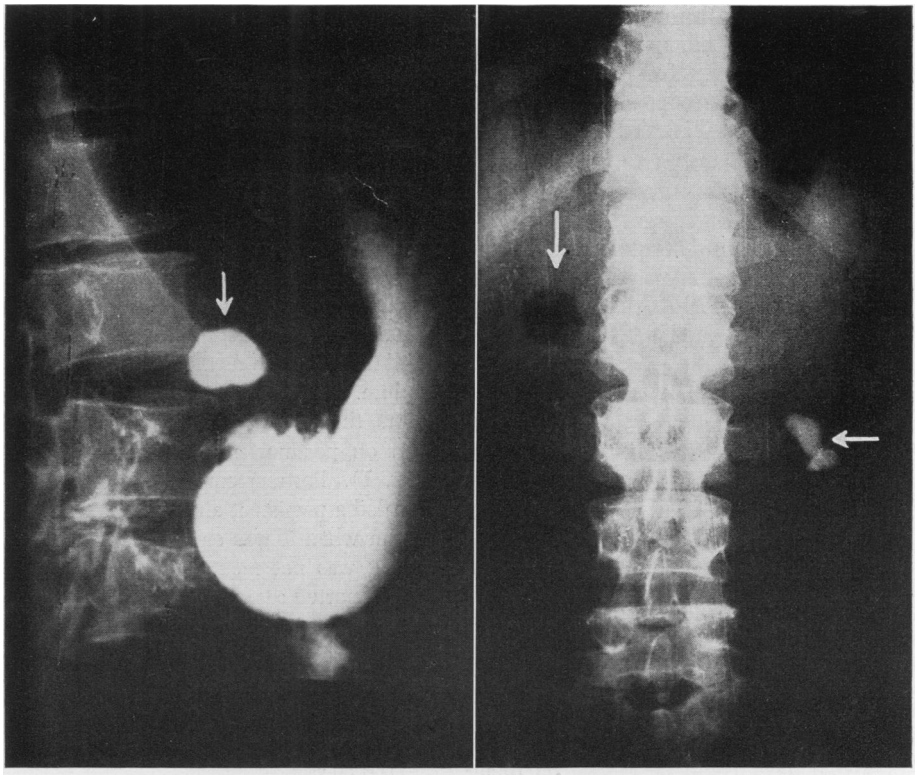

FIG. 1 FIG. 2

FIG. 1.—Upper G.I. series showing apparently normal duodenal bulb which is in reality the site of the giant ulcer crater.
FIG. 2.—Scout film showing air bubble at site of ulcer crater and stone in left kidney.

Physical examination revealed a sallow, poorly nourished white male who belched frequently and held his right side during the interview. Blood pressure was 120/86. Head, neck and E.N.T. findings were normal. Heart and lungs were normal. Abdomen was not distended and showed well-healed right inguinal herniorrhaphy scar. There was generalized right upper quadrant tenderness with no rebound tenderness or

Kahn was negative. Urinalysis showed no albumin or sugar but there were numerous WBC and a few RBC per high power field. Roentgenogram of the chest was normal, but a second film of the abdomen showed multiple large calculi in the left kidney. EKG was normal. Cholecystography was then done and when it showed a normally functioning gallbladder, a G.I. series was done. This was reported as showing no evidence of organic patho-

logic change and no gastric residue at the end of 5 hours. Colon was reported as normal at 24 hours.

The patient continued to complain of severe pain, but instead of being in the right upper quadrant it was now generalized over the thoracolumbar region of the back. On supportive therapy he showed little improvement. Since studies of the gallbladder and upper G.I. tract were negative, G.U. studies were next done to investigate the condition of the left kidney. A cystoscopy with retrograde pyelography showed a mild cystitis and a stricture of the left ureter which prevented ureteral catheterization. Intravenous pyelography showed a normal right kidney and a very poorly functioning left kidney with multiple calculi and hydronephrosis. Urine cultures were positive for *E. coli* and aerobacter aerogenes. NPN was 32 mg. per 100 cc. A repeat RBC showed 4,650,000 and WBC 14,950 with 85 per cent polys, 13 per cent lymphocytes, and 2 per cent monocytes.

When the patient continued to complain of severe back pain and no other abnormality was apparent, it was decided to do a nephrectomy, so he was transferred to the Urological Service. Bleeding and clotting times were checked and found to be normal. On September 30 under G.O.E. anesthesia a left nephrectomy was done. A large staghorn calculus filled the kidney pelvis and calyces. Two congenital cysts of the lower pole, an infected hydronephrosis, and chronic focal pyelonephritis were also reported by the pathologist. He received 500 cc. of blood preoperatively and 500 cc. at the time of operation. His immediate postoperative condition was good. At 8:00 P.M. on the night of operation he suddenly went into shock, with blood pressure falling to 70/40 and pulse rising to 120 per minute. His bowels moved and the movement consisted of a small amount of dark liquid stool. Under treatment he recovered and had no further bloody stools. A transfusion of 500 cc. of blood was administered and he gradually improved for the next 3 days. Then on October 4 he again expelled a large amount of dark bloody liquid stool and went into shock. Again he rallied after transfusion of 1000 cc. of blood, 500 cc. of plasma, and other measures. However, on the following day he had a black bloody liquid stool and copious dark bloody emesis. At this time his wife revealed that he had been a heavy drinker for years. In the light of the apparently negative G.I. series, it was thought that his hemorrhage was due to ruptured esophageal varices rather than to ulcer. Bleeding was so profuse that his RBC went down to 1,110,000. In spite of rapid transfusion of 1500 cc. of blood, the patient died shortly after another emesis of 1000 cc. of dark blood.

Autopsy revealed a giant ulcer crater 6 x 5 cm. in size (Fig. 3) involving the entire posterior wall of the duodenum and plastered over the porta hepatis. Adhesions were found between the indurated duodenum and the overlying liver at the neck of the gallbladder which may have given rise to his "gallbladder" symptoms. Protruding from the floor of the ulcer was an artery 3 mm.

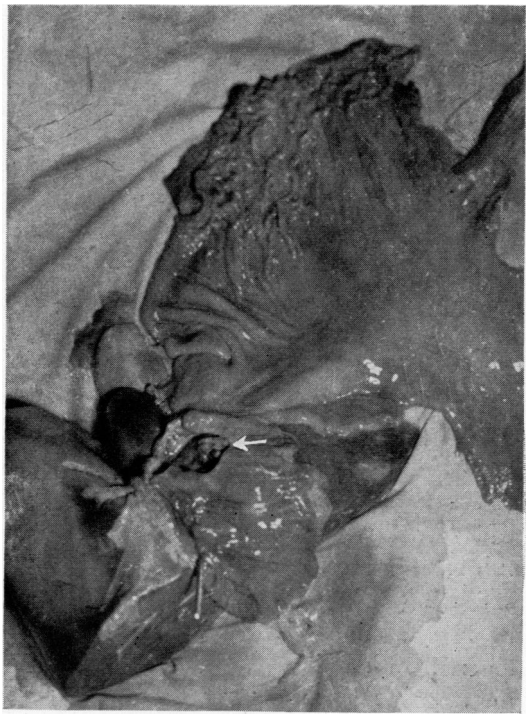

FIG. 3.—Autopsy specimen showing giant ulcer crater. Compare size to common household match sticking in Ampulla of Vater. Note end of eroded artery in base of ulcer.

in diameter which was obviously eroded and covered by a soft thrombus. Beyond the site of ulceration the duodenum was normal. The operative site showed no abnormality and there were no other contributory findings. Microscopic examination of sections taken from the specimen showed the usual findings of a chronic peptic ulcer. Nothing distinctive was found which would explain why the ulcer attained its huge size.

SUMMARY AND CONCLUSIONS

1. The twelfth case of a rare clinical entity, giant benign ulcer of the duodenum is presented.

2. Since all cases in which the diagnosis was missed died of hemorrhage, it is important that the entity be kept in mind, especially in those cases which present G.I. symptoms and have an apparently normal duodenal bulb on roentgen ray examination.

3. Roentgenographic characteristics are presented which may aid in making the diagnosis of giant benign ulcer of the duodenum.

BIBLIOGRAPHY

[1] Brdiczka, J. G.: Der Grosse Ulcus Duodeni in Rontgenbild. Fortschr a.d. Geb. d. Röntgenstrahlen, **44**: 177, 1931.

[2] Knutsson, F.: Die Nischendiagnostik Bei Sehr Grossen Duodenalgeschwüren. Acta radiol., **13**: 34, 1932.

[3] Freedman, E., and H. D. Goehring: Diagnostic errors in Ulcerative Lesions of the Stomach and Duodenum. Am. J. Roentgenol., **44**: 45, 1940.

[4] Elkin, P. W.: Diagnostic Problems in Cases of Large or Giant Duodenal Ulcer. Radiology, **37**: 748, 1941.

[5] Kahlstrom, S. C.: Giant Ulcer of the Duodenum. Medical Bulletin of the Veterans Administration, **20**: 451, 1944.