THE SURGERY OF GASTRIC ULCERS.[1]

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THE following cases are typical examples of gastric ulcer emergencies that of late have been subjected to surgical interference with a high degree of satisfaction.

The first is properly classified as perforating ulcer, which had given rise to cicatricial contracture of the pylorus and incidentally to extensive dilatation of the stomach.

The second as perforated ulcer with extravasation into the peritoneal cavity.

M. A. J., forty-five years of age. Habits regular. Family history negative. For several years prior to September, 1896, his health had gradually failed. Several times during this period he had entered the Southern Pacific Hospital, at Sacramento, California, complaining of obscure gastric disturbances, such as nausea, vomiting, anorexia and pain. Ordinary medical treatment was without avail.

Re-entered hospital September 22, 1896, looking pale, emaciated and apparently cachectic. He was extremely weak and despondent. There appeared to be a resistant mass over the pylorus, and palpation at this point was attended with great pain. There was entire absence of hydrochloric acid in the stomach contents. The stomach was greatly dilated. No history of hæmorrhage of any importance. A provisional diagnosis of cancer of the pylorus was made, and exploration advised.

Operation September 28, 1896. Median incision. The pylorus was enlarged, the walls being thickened and indurated. Suspecting malignancy, I at once excised the pylorus, removing the lower portion

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of the stomach by a vertical incision and about two inches of the duodenum. There was no hæmorrhage. The stomach incision was carefully closed. It was then found that the free end of the duodenum could be readily attached by the button method to the anterior wall of the stomach near the greater curvature. Recovery was uninterrupted. Rectal feeding was resorted to for one week. The button was passed on the thirteenth day. Patient left the hospital on the thirtieth day. At this time he had a ravenous appetite, could digest a promiscuous menu and had gained flesh rapidly. He was last seen by me more than two years after the operation. At that time there were no gastric or enteric symptoms, and he had been continuously at work.

The specimen removed gave no evidence of malignancy. The inner surface of the pylorus presented two deep, well-defined, active perforating ulcers about the size of a five-cent piece. Another but smaller ulcer was found in the anterior surface of the stomach wall near the pylorus.

S. X. B., forty-two years of age. Salesman. Family history unimportant. Is a sparely built, rather delicate looking person, but well preserved.

He appeared at my office on the afternoon of October 23, 1899, seeking relief from a severe attack of diarrhœa which had overtaken him early that morning. He had spent the forenoon at the store of his employers, but was obliged to lay off at noon.

Upon inquiry I found there was a history of obscure enteric trouble, and accordingly I went over his abdomen carefully. The wall muscles were a trifle rigid. He complained of pain radiating from the umbilicus. Palpation revealed tenderness and pain in epigastrium and at McBurney's point. Temperature and pulse were normal. Having prescribed a palliative remedy he was sent home with instructions to report again the next day. At about one o'clock on the following morning, Dr. Johansen, of this city, was called to see him and at once reported to me by telephone that the patient was then in a state of profound collapse. At this time his temperature was 95.5° F., pulse 40, and he was bathed in cold perspiration. I at once repaired to his bedside. When I arrived he had rallied markedly under the administration of the usual stimulants by Dr. Johansen. At this time the man was suffering pain both at the epigastrium and over the appendix. Pressure elicited the greater protest when applied over the appendix. The abdominal muscles were perfectly rigid. The possibility of perforating gastric ulcer as a cause of

symptoms was considered, but the preponderance of testimony seemed to favor perforation of the appendix.

An operation was agreed upon, but could not be arranged for until 3 P.M., or fourteen hours after the acute attack.

The gridiron incision was made near McBurney's point. On exposing the cæcum and colon deposits of lymph were at once discovered. There were the usual evidences of chronic appendicitis, such as extensive adhesions completely fixing the colon, cæcum and appendix, while the latter organ was enlarged, distended and reddened. There was, however, no evidence of rupture or gangrene of this organ. This point being determined, the appendix was removed and search made for the origin of infection. Following along the surface of the ascending colon the lymph patches were more numerous as we approached the hepatic flexure. The gall-bladder was found to be healthy.

A median incision was then made above the umbilicus, and upon exposure of the stomach wall a round perforation was found in the anterior wall about two inches from the pylorus. The opening would readily admit a large white bean. Its margin was thickened, smooth and glossy. Through it had escaped a small amount of stomach contents and the adjacent tissues were more or less soiled. Having carefully sponged the infected area, the ulcer was infolded and the perforation closed by three layers of Lembert sutures. The abdominal cavity was freely flushed with saline solution, and a Mikuliez bag was inserted through the median incision.

Rectal feeding was maintained exclusively for four days and in part for one week. The drain was removed on the sixth day and the wound was allowed to heal by granulation. Convalescence was satisfactory, though slow, owing to the method of healing of the main wound. He left the hospital at the end of seven weeks. Since that time he has been at work almost constantly. His diet is liberal and promiscuous. Bowels move regularly and he has gained weight. On January 31, 1900, he reports having gained seven pounds in fourteen days.

A culture taken from a deposit of lymph first discovered in the region of the cæcum yielded a negative result. Unfortunately no investigation was made with reference to the extravasated material near the perforation.

Each of these cases illustrates the difficulties which attend the making of an accurate and timely diagnosis.

It is apparent that the chemical findings in the first case were wholly misleading; a fact only to be accounted for by the extreme atony of the organ whereby one of its most important functions was temporarily suspended. The previous history of pain, anorexia, vomiting and emaciation, together with apparent cachexia, were in accord with the theory of cancer, and rendered a correct inference wellnigh impossible.

In the second case there were no preliminary symptoms, either systematic or local, sufficient to engage the attention of the patient, much less to announce the presence of a possibly fatal lesion.

A brief statistical résumé will be of interest in this connection.

Bidwell (*The American Journal of the Medical Sciences*, September, 1899) makes a most favorable showing for operations done for the relief of gastric ulcer and its complications other than perforation and hæmorrhage. He has collected 242 such cases with thirty-two deaths, a mortality of 12.4 per cent. He quotes Cutler's and Elliott's estimate of the mortality following pylorectomy as 35 per cent. The mortality attending pyloroplasty is variously estimated at from 12 to 17 per cent.

Concerning operations for perforated ulcer, the same author refers significantly to Mickulicz's series of 103 cases. Of these, thirty-five cases were encountered previous to 1894, with but one recovery, a mortality of 97.15 per cent., while of the sixty-eight cases operated on since 1894, thirty-two recovered, a mortality of 52.94 per cent. Of fifty-five cases operated within the past three years, thirty-three recovered, a mortality of only 10 per cent. Combining this series with Mickulicz's later cases and we have 123 cases, of which sixty-five recovered, a mortality of 47 per cent.

As regards the most favorable time for operation, Lund's (*Boston Medical and Surgical Journal*, January 11, 1900) statistics are conclusive. In a series of forty-five cases operated upon within twelve hours after perforation, thirty-five recovered, a mortality of 22 per cent. Of seventy cases operated within twenty-four hours, forty-four recovered, a mortality of 37 per

cent. In a later series of forty cases collected by the same author, fourteen were operated within twelve hours, with twelve recoveries, a mortality of 14 per cent., and twenty-six within twenty-four hours, with nineteen recoveries, a mortality of 17 per cent.