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Original Articles.

PERFORATING GASTRIC ULCER; POSTERIOR GASTRO-ENTEROSTOMY; FOWLER'S POSITION.

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MEDICAL HISTORY OF THE CASE AND REMARKS BY
DR. MUSSER.

I have reported with Dr. Wharton a case that was in many respects similar to this. In that case operation was done within ten hours after perforation, which accident fortunately took place while the patient was fasting, an incident corresponding to the course of the second case. In the second case the operation was done five and one-half hours after perforation. The first patient had not had solid food for twenty hours, and only a small amount of coffee eight hours before perforation. The second patient had been without solid food, and had taken only albumin water for from forty-eight to sixty hours. No opportunity to make a gastric analysis was given in the first instance, although it is presumed hyperchlorhydria was present, an extreme state of which was found in the second. Doubtless this excess of acid, unneutralized, contributed to the perforation. Accordingly, it may be well to emphasize the importance of neutralizing the acid by appropriate remedies in cases of gastric ulcer, when food that takes up the acid is not permitted. Without doubt the early operations at the time when the stomachs were empty, were important factors in saving the lives of the patients.

Another point of great interest was one of dissimilarity, but the contrast teaches an important lesson. The first patient was a muscular farmer. Rigidity of the abdominal muscles was extreme. In the second case there was great atrophy of the abdominal walls, and in consequence there was no spasm or rigidity. Hence, given the lesions likely to cause spasm under other circumstances, it will be absent with abdominal walls of the character to be described.

I should like to add that the first patient is in excellent health, no gastric symptoms having returned.

I had seen Mrs. M. during November, at the request of her husband, a physician. She was 70 years of age, and had enjoyed excellent health until one year ago. She had been treated at that time by Dr. Boardman Reed for ulcer of the stomach, characterized by pain and hemorrhage. When seen by me she was suffering from pain, the occasional vomiting of large amounts of fluid, the daily regurgitation of a small amount. The pain was spasmodic, referred to the pylorus and relieved by regurgitation. It was not increased by food, except when the stomach was overfull.

On physical examination, the stomach, overdistended, could be well made out, and visible peristalsis was present. The pain often was coincident with the termination of a wave of peristalsis, at the region of the pylorus.

I concluded that the patient had pyloric obstruction due to spasm. No tumor could be made out. A soft tube passed into the stomach resulted in the withdrawal of two quarts of dark, grumous, offensive material. Afterward there was a perfect relief, and for almost three weeks she was without pain or distress. A test meal (Ewald) revealed total acidity 65, free HCl 40, absence of lactic acid, presence of sarcinae and large bacilli. The odor was butyric. Lavage was done most carefully only twice, because of the possible ulcer. It seemed that an ulcer had healed causing constriction at the pylorus, or that an active ulcer was attended by pyloric spasm. The small vomitings were due to the regurgitation—the incontinence of retention. November 17 the patient washed out her stomach herself. November 19 sudden profuse hemorrhage occurred; at least a quart was vomited, followed by collapse. Rectal feedings, sips of water and egg albumin were resorted to.

November 26, at 9:30 a. m., she was seized with sudden pain in the median line or to the right, between the xiphoid and the navel, followed by shock. I saw her within half an hour. There was pain, vomiting of mucus, but no blood, rapid pulse, tenderness, no spasm, cool extremities. She lay on the left side chiefly. The pain was considerable in the back and right shoulder. Liver dullness was present. A perforation had doubtless taken place, and an operation was advised.

Dr. Keen saw the patient at 12 m. Dr. Reed, her former attendant, joined us. Reaction had set in. Temperature, 99; pulse, 85. The patient complained of great pain and favored the left lateral dorsal position. Drs. Keen and Reed concurred in the diagnosis of perforation, and urged with me immediate operation. Dr. Keen operated at 3 p. m., five and a half hours after perforation had taken place.

SURGICAL HISTORY AND REMARKS BY DR. KEEN.

I first saw Mrs. M., a woman a little past 70 years of age, in consultation with Dr. J. H. Musser and Dr. Boardman Reed, Nov. 26, 1903, at noon. I had known the patient for a number of years. I had not seen her for three or four years and was struck with her loss of weight and emaciation. After an examination, I fully concurred in the diagnosis of perforated gastric ulcer, and three hours later the operation was done.

An incision was made to the left of the middle line on account of extensive diastasis of the recti muscles following her single pregnancy about forty-eight years ago. Only a very few muscular fibers were seen. The

muscles were not only widely separated, but greatly atrophied. The entire abdominal wall was not over 1 cm. in thickness. As soon as the abdomen was opened, a little turbid, rather dark colored fluid poured out, and when the stomach was drawn out, a few flakes of lymph were found on it. In a moment the perforation was discovered. It was an aperture slightly oval, very sharply punched out, 5 mm. in its long diameter, situated precisely in the middle of the pylorus anteriorly. The whole pylorus was thickened, but not nodulated. Evidently it had been the seat of an old ulcer involving all the anterior wall. The ulcer was immediately closed by a continuous Lembert suture. The abdominal cavity was then flushed out with a large quantity of salt solution, care being taken to wash out between the diaphragm and the liver, and also down into Douglas' cul-de-sac, where a considerable amount of turbid fluid was found. The diaphragm was but little injected. The transverse colon was then turned up, a hole torn through the mesocolon, and a posterior gastro-enterostomy done by means of a Murphy button. The peritoneal cavity was then again most carefully flushed out till the fluid, as in the first instance, returned clear. A number of adhesions were found between the coils of the intestine and the anterior abdominal wall and the omentum and the abdominal wall in the lower half of the abdomen, but I did not think it wise to prolong the operation by interfering with them. She was placed in bed in Fowler's position (i. e., with head of the bed raised).

She made an uninterrupted recovery, her highest temperature being 100.4 F. On December 1, five days after the operation, her temperature reached normal. In consequence of the thinness of her abdominal wall, I kept her in bed for four weeks. She went home December 31, wearing a belt and able to walk about without trouble.

The recovery from so serious a lesion as a perforating gastric ulcer and so serious an operation as abdominal section and gastro-enterostomy in a woman past 70, is a sufficient reason, it would seem, for recording such a case. Her recovery was due, I have no question, largely, first, to the promptness with which Dr. Musser acted; and, secondly, to the fact that her stomach contained little beside albuminized water. Yet, in spite of this favorable condition of the stomach, there were a few flakes of lymph already present on the stomach. A culture was taken from the abdominal cavity as soon as it was opened, and this proved, after eight days, to be sterile. I do not know that Fowler's position influenced the recovery in this case very much, in view of the facts just stated, but it certainly, at least, did no harm.

I debated for a few moments whether I should do Finney's gastroduodenostomy by means of a horse-shoe-shaped incision extending from the duodenum into the stomach. I, however, finally decided against it on account of the great thickening of the whole anterior pylorus, and because I believed it would take longer than a gastro-enterostomy by the Murphy button. For the last reason also I decided against a gastro-enterostomy with simple suture.

Up to the present time, over two months after the operation, the button has not passed, but it has not produced any trouble.

To irrigate wounds or large cavities employ solutions at or slightly above body temperature, as cold interferes with repair.
—*Internat. Jour. of Surg.*

BOVINE AND HUMAN TUBERCULOSIS.*

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In the last two reports presented by this committee considerable space was devoted to the subject of tuberculosis, and particularly to that phase of it which relates to the transmission of the disease from animals to man. It was shown from a review of the facts obtained by different methods of inquiry that the clinical evidence, the evidence of statistics, and the evidence from experimental researches all favored the conclusion that animal tuberculosis was a factor in the causation of human tuberculosis, and it was held that sanitarians should advocate and enforce measures to prevent the transmission of the disease from animals to man. This question is so important and so much uncertainty has been caused by the paper presented at the British Congress on Tuberculosis by Koch, and by his subsequent address at the International Conference on Tuberculosis at Berlin, that it is deemed advisable to continue the discussion in the present report.

The fact that tubercular material from human subjects often failed to produce serious disease in cattle was observed by a number of the earlier investigators who experimented with such virus. It was the experiments and comparative studies of Theobald Smith, however, which attracted special attention to the difference in virulence shown by tubercle bacilli from human and bovine sources when inoculated on cattle. Smith also mentioned certain morphologic and cultural differences in bacilli from these two sources, and in the location and histology of the lesions in cattle produced by such bacilli. He did not conclude, however, that bovine bacilli could not produce disease in the human subject, but said: "It seems to me that, accepting the clinical evidence on hand, bovine tuberculosis may be transmitted to children when the body is overpowered by large numbers of bacilli, as in udder tuberculosis, or when certain unknown favorable conditions exist."

Koch, however, in his address at the British Congress on Tuberculosis, went far beyond this and maintained that "human tuberculosis differs from bovine, and can not be transmitted to cattle." As to the susceptibility of man to bovine tuberculosis, he said it was not yet absolutely decided, but one was "nevertheless already at liberty to say that, if such a susceptibility really exists, the infection of human beings is but a very rare occurrence." He emphasized this view in the following language: "I should estimate the extent of infection by the milk and flesh of tubercular cattle, and the butter made of their milk, as hardly greater than that of hereditary transmission, and I therefore do not deem it advisable to take any measures against it."

This conclusion was so radically different from the views of most experimenters, and so out of harmony with facts which had apparently been demonstrated by others, that it at once aroused opposition in the congress, followed by the adoption of dissenting resolutions, and led to numerous investigations in various countries. Koch's conclusions were based on his failure to produce tuberculosis in cattle and other animals by inoculating them with tubercular material of human origin, and his success in causing progressive and fatal tuberculosis in the same kinds of animals when inoculated with tubercular material of bovine origin. With such positiveness did

* Report of the Committee on Animal Diseases and Animal Food, presented by the chairman at the meeting of the American Public Health Association, at Washington, D. C., Oct. 27, 1903.