THE DIAGNOSIS AND TREATMENT OF INTESTINAL PERFORATION WITH REPORT OF TWO SUCCESSFUL CASES.

By W. WHATLEY BATTEY, JR.,

Assistant Professor Anatomy and Clinical Surgery, Medical Department, University of Georgia.
Augusta, Ga.

Mr. President and Gentlemen—

In discussing "Intestinal Perforation" I wish to confine myself to that variety occurring during the course of typhoid fever and that produced by abdominal contusions (contrecoup) without evidence of external injury of abdominal wall.

The typhoid variety occurs, as a rule, between end of second and fourth week. While distention and hemorrhage favor perforation, it often occurs when such conditions do not exist, and it may occur when least expected. Ambulatory cases, apparently improving, end disastrously in perforation. The most evident symptoms are pain, rigidity, drop in temperature, increased pulse rate and anxious expression. Without a doubt the pain is the most prominent early symptom which should attract our careful consideration. To observe any one or all symptoms of perforation, it is absolutely necessary that we should follow our typhoid cases with the greatest care from the moment of the infection until the patient is discharged as cured. A systematic careful and daily examination of the abdomen should be made in all cases and daily changes noted. Some patients have more pain than others during the disease, but the one attack of cutting, boring pain of sudden onset, followed by other symptoms mentioned, clinches the diagnosis.

In typhoid cases when there is no delirium, when the symptoms of perforation present themselves, we are enabled to elicit much valuable information from the patient; but in cases where there is delirium, our diagnostic ability is taxed to the utmost and the most important symptom—pain—is not to be depended upon.

In this variety of cases we must depend

upon chill, nausea, vomiting and subsequent sudden drop in temperature, increased rate of pulse, loss of liver dullness, shifting dullness and loss of abdominal respiration. These last three symptoms unfortunately are due to peritonitis following perforation, rather than to perforation, thus increasing our operative mortality.

While it seems reasonable to suppose that hemorrhage in cases means possible perforation, perforation does not depend upon hemorrhage, and because our patients do not have hemorrhage we should not be misled in believing that they are not in constant danger of perforation.

The diagnostic sign as proposed by Brown of Rome, N. Y., "the dipping crackle" in trained hands would be a valuable confirmatory sign. The sign is elicited by placing bell of stethoscope over the right iliac fossa and dipping suddenly with it as in dipping palpation, a very fine crackle is to be heard, due to contact of visceral and parietal peritoneum, the inflamed surfaces apparently sticking together momentarily. To appreciate its value it must be tried early, for as intestines become tympanitic it is no longer to be heard.

Another sign which may be of great value is the extension of pain and tenderness upon changing position of patient, thus showing up within ten or fifteen minutes after change.

The other variety of intestinal perforation is that due to contusions of abdomen without evidence of injury of abdominal wall. A factor in the production of this variety would be the condition of intestinal tract in presence or absence of tympany would be more likely followed by rupture of intestines than when the abdomen is more or less collapsed.

While these two conditions, intestinal per-

foration of typhoid and intestinal rupture, due to abdominal injury, are due to unlike causes, the early diagnosis of both is founded upon reliable clinical signs, which if misinterpreted, early in the condition, our efforts to save life are futile.

The treatment of intestinal perforation is operative, and yet I am of the opinion that cases of perforation occasionally recover without operation. The wonderful protective property of the peritoneum in walling off inflammatory conditions holds good in intestinal perforation as will be shown in case report. But of course to advise other than operation is criminal to a degree.

The selection of an anaesthetic is the most important consideration. There is no greater field for employment of local anaesthesia than in intestinal perforation. It combines many advantages. First of all, in typhoid fever the vitality of the patient must be considered, and by administering a general anaesthetic, we are adding fuel to the flame. Local anaesthesia can be employed practically painlessly by method of infiltration, the only appreciable pain being the peritoneum when it is opened. But since there is an element of doubt in some cases and our operation is exploratory, we have harmed the patient only a trifle by operation with local anaesthesia, if the perforation is not present.

Upon opening the peritoneum, if perforation has taken place, there is a sudden escape of gas or fluid which gives the patient a feeling of temporary relief. After the diagnosis is positive, if the perforation is not easy of access and the intestines are very tympanic, the use of a few whiffs of anaesthetic, occasionally, will enable us to work with a greater degree of rapidity.

In typhoid perforation the area of typhoid involvement is usually confined to a limited area, and this is usually quickly found without difficulty. The perforation should be properly closed and other areas suspicious of possible perforation should be reinforced by peritoneal sutures.

In rupture or perforation of second variety the entire intestinal tract should be explored, and discretion used as to the necessity of resection or closure of intestinal hole.

As to irrigation of abdominal cavity much has been said for and against. While Murphy has had remarkable results in peritonitis cases by relying upon position and proctoclysis and discarding irrigation of cavity; in the two cases that I will report I resorted to irrigation of abdominal cavity in both cases, mainly because in case of rupture there were faecal accumulations in abdominal cavity that I wished to cleanse out, and in the perforation case there seemed to be much serum and faecal matter in the abdomen. While I appreciated at the time that I was not acting according to the present accepted method of choice, both cases made uneventful recoveries, the interesting data in both being seen in the following reports:

Mrs. A., age, 38; residence, Savannah Road, Augusta, Ga.

Family History—Negative.

Past History—Negative.

Present History—On February 22, 1909, Mrs. A. was taken sick with fever and some abdominal pain. Constipated. I saw the patient on February 25 at her home, Savannah Road. Physical signs were as follows: Few rales over chest. Abdomen slightly distended and tympanic. Some soreness in right iliac fossa. Vaginal examination, negative. No rose spots. Temperature, 101; pulse, 96; respiration, 24. I advised removing the patient to City Hospital. Advice was taken and patient was removed to hospital the following day. Upon admission, temperature, 100; pulse, 100; respiration, 24. Tenderness in right iliac fossa. Urinary examination negative. Leucocytosis 11,000. Malaria, negative. Patient complained of a great deal of nausea, but did not vomit. From February 26 to March 10 evening temperature did not exceed 102. Morning temperature touched normal several times. On March 10 at 1 p. m. temperature dropped to 97 by mouth. Pulse, 82. Patient

complained of some little abdominal pain, but owing to low pulse rate and good general condition I did not attach any importance to 97 temperature, since it had been 98 the morning before, and I felt that she was probably beginning to convalesce. Vidal examination at this time was positive. Following day temperature ranged from 99 4-5 to 100 2-5. On March 22, twenty-eight days from the beginning of symptoms of typhoid, at 10 a. m., patient complained of pain in the abdomen when coughing. She had at this time a slight liquid bowel movement with particles of faecal matter. At 10:30 a. m. complained of cramping pain in abdomen followed by slight liquid movement. Temperature, 101 2-5; pulse, 100; respiration, 22. At 12:15 complained of severe pain in lower part of abdomen. Rectal tube was inserted with no result. Turpentine stupe applied to abdomen. At 2:45 temperature 104 3-5; pulse, 110; respiration, 22. At 3:40 temperature, 104 2-5; pulse, 112; respiration, 22. At 5:50 temperature, 103 3-5; pulse, 110; respiration, 20. At 7:30 p. m., temperature, 102 3-5; pulse, 124. At 9:20 p. m., temperature, 97 3-5; pulse, 128; respiration, 20. At this time the abdomen was beginning to show distention, somewhat rigid; abdominal pain general; slight nausea and anxious expression. I felt certain that perforation had occurred, and the patient was prepared for operation. Under local anaesthesia, assisted by House Staff, median incision was made. As soon as peritoneum was opened there was a gush of gas and serous fluid. Patient gave a sigh of relief; she became exceedingly nervous, so Dr. Battey, Sr., gave her a little chloroform. Incision was lengthened and intestines inspected. I found an area of typhoid involvement about one foot in length in small bowel, in ileum within six inches of caecum a perforation about the size of a slate pencil communicating with cavity, also an attachment of omentum to bowel three inches above perforation. In an attempt to separate omentum, which was tightly adherent, a former perforation was disclosed, thus showing that per-

foration had occurred at an earlier period of the disease without positive symptoms, except one attack of boring pain lasting about one-half hour during the second week of fever, the wonderful action of nature saving a peritonitis and undoubtedly proving that perforation may happen in many cases without resulting fatally.

The last perforation was closed by Lembert sutures. Abdomen was flushed out with saline solution, owing to the fact that faecal accumulations had escaped through opening in the cavity. Mickulicz drains inserted in pelvis; abdomen closed by layers; patient returned to room; placed in Fowler position with Murphy irrigations and stimulation; drainage tubes were removed by piecemeal daily and completely recovered by twelfth day.

The further history of the case is without interest. Patient left Hospital on April 24 with small granulating wound, which healed completely in two weeks.

I saw patient three weeks ago. She weighs 180 pounds and is in splendid health.

Intestinal Rupture.—

Thos. J. Cato, No. 831 Liberty Street; age, 34 years. Employee of the Augusta Lumber Company.

History of Accident.—

On January 4, 1910, at about 4 p. m., while ripping boards, one piece of board mounted saw, threw same backward, striking operator. At the time of injury the operator had on undershirt, top shirt, drawers, trousers and overalls all covering his abdomen. When the accident occurred the operator felt as though something had knocked a hole into him, to use his expression. He stopped work for a few minutes, then resumed work, feeling somewhat weak. He worked for one-half hour and was then forced to stop because he felt as though he were "burning up inside." He was taken home in a conveyance, reaching there about 5 p. m. I saw him at about 5:30 and found him sitting up in his room. He stated that he felt very well, but was weak. I had him put to bed and catheterized him to

be certain that there was no bladder rupture. An examination of the abdomen revealed slight tenderness one inch below and to the left of umbilicus. No evidence of injury to abdominal wall. Abdomen slightly tympanitic; no dullness. Temperature, 98.4-5; pulse, 88; respiration, 24. I advised patient to take a dose of Magnes Sulph. He told me that he had taken a dose of castor oil in the morning, but without results. I also advised him to call me at once if he had any abdominal pain. At 7:30 p. m. of the same day I was called hurriedly to the patient, receiving a message that he was suffering intensely. I went immediately to his home and found him rolling from side to side in bed with intense pain in the abdomen. The abdomen was of boardlike rigidity and somewhat retracted and very sensitive to pressure. The flanks were dull on percussion. He vomited several times. I believed there was a rupture and decided to operate at once. Patient was taken to the hospital and I operated at 10 p. m., six hours after injury.

Operation.—

Chloroform was administered by Dr. Rattey, Sr.; assistants were House Staff of Hospital. On opening the abdomen there was an escape of brownish fluid of faecal appearance. Examination of the stomach revealed no lesion. The transverse colon and omentum were drawn up, allowing more fluid to escape; no lesion found. The intestines were somewhat injected and covered in spots by plaster lymph.

A systematic examination of the small intestines showed a perforation about the size of a ten cent piece. Perforation closed by Lembert sutures. Abdominal cavity flushed with saline solution. Drainage tube inserted in pelvis. Abdomen closed in layers, leaving room for drainage tubes.

After Treatment.—

Fowler position, Murphey irrigation. Bowels were moved on second day after operation with compound licorice powder. On third day patient was eating regular meals. He was discharged—cured—in two weeks. In British Medical Journal of October 9, 1909, Dr. Radcliffe reports a case of traumatic rupture of small intestine, due to blow in epigastum by sharp end of plank. He was operated upon ten hours after injury. A longitudinal rupture 3-4 inch in length was found in jejunum about two feet from commencement. Rupture was closed with continuous Lembert sutures. A second suprapubic incision was made and drainage inserted in pelvis. Another incision was made through parietes over appendix for performance of appendicostomy. A continuous saline irrigation of normal salt was carried on through the appendix stump for 48 hours. Patient recovered with faecal fistula, which lasted for a week.

I mention this case in order to obtain a discussion as to the value of appendicostomy in such cases, since having gotten such a splendid result with its performance.

CANCER OF THE BREAST.*

By W. A. BRYAN, M.D.,

Professor of Principles of Surgery Vanderbilt University.
Nashville, Tenn.

The tendency is prevalent to standardize surgical procedure and has already often gone so far as to render surgical work a kind of blacksmithing in human tissues; so that if a

given diagnosis is made, sometimes if it is only surmised, then a certain very definite operation is accepted as being clearly and unquestionably indicated—nothing short of it

*Read before the Nashville Academy of Medicine, July 26, 1910.

*Journal A. M. A., Vol. LIV., No. 3.