Clinical Notes, Suggestions, and New Instruments

REPEATED PERFORATIONS OF SMALL INTESTINE DUE TO FOCAL INFECTION

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History.—A woman, aged 40, was first admitted to the hospital, Sept. 17, 1918, because of general abdominal pain, most marked in the region of the right iliac fossa, with abdominal distention, rigidity and vomiting. The family history was negative. The patient had been married eighteen years, but had no children, and there had been no miscarriages. The menses, which began at 12, were of the twenty-eight day type, regular, with slight pain and backache on the first two days, the flow lasting from four to six days; there was no leukorrhea. The patient had always enjoyed good health and had never had any injuries; she had had most of the diseases of childhood. She drank coffee and tea moderately, and did not use alcohol or tobacco. The tonsils had been removed about two years previously, and about eighteen months before, a small cystic tumor had been removed from the right breast under local anesthesia. The pathologic report was that the tumor was benign.

The patient said that she had been perfectly well until the night before admission, except for furunculosis of the external auditory canal about ten days or two weeks prior to her present illness, and that she had not been feeling quite up to her normal standard for a day or two, had done a hard day's work of house cleaning, was very tired when she ate her supper, and had felt some slight abdominal pain. She went to a moving picture show thinking it would rest her; while she was in the theater, the abdominal pain became so severe that she had to leave. After reaching home she drank some hot water and soda, vomited, went to bed, and applied a hot water bag to the abdomen. The pain rapidly grew worse and she called her family physician, who administered a hypodermic injection of morphin. Her physician saw her the next morning. She had had a bad night, with considerable nausea and vomiting, and the pain had increased in severity. Another hypodermic injection of morphin gave no relief, and another physician was called in consultation. These two physicians decided that she had appendicitis and sent her to the hospital for immediate operation. Her face was ashen; the temperature was 100; pulse 120; respirations 36. Examination of the heart and lungs was negative. The abdomen was greatly distended and rigid. Blood count revealed: leukocytes, 17,800; polymorphonuclears, 88 per cent. The urine was clear and acid, with a specific gravity of 1.004, it contained a faint trace of albumin and an occasional pus cell, but no sugar. The preoperative diagnosis was ruptured appendix with peritonitis, and immediate operation was advised.

First Operation.—A long right rectus incision revealed free pus and an appendix normal except for congestion. The uterus, tubes and ovaries were normal except for a small fibroid on the fundus. There was a large quantity of free pus in the pelvis. The abdomen was greatly distended, and small intestine, with fibrinous exudate on the ileum, escaped from the wound. From 12 to 16 inches from the ileocecal valve, a perforation about the size of a match head was found. This perforation was surrounded by an indurated area about the size of a dime. An attempt was made to close the perforation with a purse string suture, but this pulled out. The perforation was then closed with interrupted silk Lembert sutures. A rubber drain was put into the pelvis. The wound was closed in layers, and the skin was closed with figure-of-eight silk-worm-gut sutures.

The postoperative diagnosis was ruptured ulcer of the ileum from 12 to 16 inches from the ileocecal valve, of undetermined origin.

The patient had a rather stormy convalescence. She left the hospital six weeks after the operation, entirely well.

Second Operation.—April 16, 1919, seven months after her first admission, she was readmitted to the hospital on account

of pain in the abdomen. She had been well since the operation for ulcer of the intestine in September, except that she had complained of gas pains and had had occasional attacks of cramps and nausea. Physical examination was practically negative except for some tenderness in the lower abdomen, more marked over the region of the appendix. Blood examination revealed: leukocytes, 12,500; polymorphonuclears, 70 per cent. Examination of the urine was negative. Temperature, pulse and respirations were normal. Roentgenograms of the gastro-intestinal tract revealed that the stomach, small intestine and colon were normal. There was marked tenderness over the appendix, which was club shaped, with somewhat narrowed lumen in the proximal portion. The roentgen-ray diagnosis was chronic appendicitis. On these findings we made a diagnosis of chronic appendicitis with possible adhesions from the previous operation.

Operation by suprapubic midline incision was performed. The appendix, which was bound down with adhesions, was removed. Several little strings of adhesions of fibrous bands about the size of a knitting needle, extending from the parietal peritoneum to different parts of the small intestine, were released. A Lane kink was also released. Careful search of the intestine for the previous perforation was made, but the intestine appeared to be perfectly normal, and the location of the former perforation could not be found. The wound was closed in the usual manner without drainage. A small cyst the size of a guinea egg was removed from the upper and outer quadrant of the left breast.

The postoperative diagnosis was subacute appendicitis, with a few adhesions resulting from the previous operation, and a mammary cyst. Microscopic examination of this cyst revealed that it was a retention cyst of the breast. Seventeen days after admission the patient was dismissed in good condition.

Third Operation.—Oct. 26, 1919, six months after the second operation, and one year and one month after the first perforation was closed, the patient was readmitted to the hospital. The chief complaint was severe abdominal pain which began that morning, with sudden pain in the lower abdomen, nausea, vomiting, prostration and abdominal distention. On admission, the temperature was 98.4, pulse 100, respirations 30. The blood count was: leukocytes, 21,000; polymorphonuclears, 89 per cent. The urine was straw colored, cloudy and acid; the specific gravity was 1.017; there was a trace of albumin; sugar was negative; there were from 18 to 20 pus cells in the field; blood was negative; there were a few bacteria. The preoperative diagnosis was perforation of the small intestine. The patient was operated on a few hours after admission, which was about twelve hours after the beginning of this attack. It was later elicited that about two weeks prior to this attack, the patient had had furuncles in the external auditory canal.

Operation by right rectus incision was performed. When the peritoneal cavity was opened, dense adhesions were found. The small intestine bulged into the wound, and immediately a loop with a perforation appeared. This hole was the size of a pea, with a large indurated area around it the size of a dollar. The intestine was resected well beyond the indurated area. Lateral anastomosis was made, and a split rubber drain passed into Douglas' culdesac. The patient left the operating table in good condition. The drain was removed in three days. The temperature was practically normal at the end of a week, and the patient left the hospital in good condition seven weeks after admission.

The pathologic report was: Piece of intestine resected; tissue from ulcer of intestine, simple inflammatory; small round type of cell predominating; no malignancy.

The blood Wassermann reaction, the Widal test for typhoid, Dryer's test for typhoid, blood culture for typhoid and the tuberculin test were negative.

Fourth Operation.—Jan. 17, 1921, about one year and three months after her last admission and about two years and four months after the first perforation was closed, the patient was readmitted to the hospital. About two weeks prior to admission, she had two or three furuncles in the external auditory canal. About the time this furunculosis was subsiding, she began to have more or less discomfort and abdominal pain with some distention. She came to the hos-

pital for observation and roentgen-ray examination. Physical examination was negative except that there were indefinite soreness and tenderness in the abdomen, slight distention and no rigidity. Blood examination on the morning of the 17th revealed: hemoglobin, 75 per cent.; leukocytes, 7,800; polymorphonuclears, 60 per cent.

The day following admission, roentgen-ray examination was made of the teeth, chest and abdomen. There was a slight area of infection around the roots of the upper right first bicuspid, but none of the other teeth showed any definite areas of infection around the roots. Chest examination was negative. There was no evidence of any lesion of the small or large intestine. The patient was allowed a light lunch. Soon after this she suddenly developed acute pain in the abdomen, nausea and vomiting, distention and marked muscular rigidity. Diagnosis of perforation of the small intestine was made a few hours later. Blood examination shortly after she complained of the first violent abdominal pain revealed: leukocytes, 12,400; polymorphonuclears, 80 per cent. Three hours later another blood count revealed: leukocytes, 12,600; polymorphonuclears, 88 per cent. The urine was negative except for a faint trace of albumin. The blood Wassermann reaction was negative.

Operation by right rectus incision was performed. When the peritoneal cavity was opened, dense adhesions were found as a result of the former operations. The site of the former anastomosis was found. Two perforations were present just outside the previous line of anastomosis. Considerable barium was free in the peritoneal cavity and running freely out of the perforations. This old anastomosis was resected, and another lateral anastomosis was made. Some adhesions were released. The rectus muscles had separated, and no attempt was made to bring them together. A rubber drainage tube with a gauze wick was inserted at the lower angle of the wound. The postoperative diagnosis was: perforation of the intestine, which was the third one within the last three years; the cause of perforation not determined. The patient made rapid and uninterrupted recovery, and left the hospital in nineteen days.

A specimen of the intestine submitted to Dr. A. C. Broders for pathologic study gave no evidence of tuberculosis, malignancy or *Endameba histolytica*. It appeared to be a simple inflammatory ulcer. Dr. Broders believed the condition a straight-out inflammatory process due to a focus of infection.

Two weeks later I accompanied the patient to the Mayo Clinic for observation and advice in order that we might prevent, if possible, any future perforations. She was carefully studied there for about two weeks. Tests for tuberculosis, malignancy, amebas, infective foci and other pathologic conditions were made. Roentgen examination revealed root abscesses of two teeth. These teeth were removed. Otherwise the examinations were negative except that she had a slight ventral hernia resulting from drainage and many operations.

COMMENT

The interesting feature of this case is the cause of the repeated perforations. The family history and previous history of the patient were negative. She had never had any illness of any consequence prior to the first perforation in 1918. Careful and repeated examinations for tuberculosis, syphilis, endamebas and typhoid fever were all negative. It is interesting that from one to two weeks prior to each perforation she had furunculosis of the external auditory canal; that the pathologic reports of the sections of the resected intestine showed it to be inflammatory; that she had root abscesses of two teeth at the time of her examination at the Mayo Clinic, and that she had an infection around the roots of the upper right first bicuspid when a roentgenogram was made on the day of the last perforation.

We can say definitely that these perforations are inflammatory in character and result from a focus of infection somewhere. The two foci of infection that were known to exist were the furuncles of the external auditory canal and the abscessed teeth. I myself am inclined to think that the perforations resulted from the furunculosis. The consensus at the Mayo Clinic was that in all probability the infection came from the teeth.

Phemister¹ says that skin foci are important as a source of hematogenous staphylococcus lesions, and reports nineteen cases, briefly summarized and grouped according to the structures involved, which he has observed, with two exceptions, in connection with various services of the Presbyterian Hospital in the twenty months previous to September, 1921. In all instances the staphylococcus, usually *Staphylococcus aureus*, but the variety was not always stated, was the only organism in cultures from the pus obtained at operation. In a few cases it was obtained in cultures from the skin focus, but usually the skin lesion was healed before the patient entered the hospital. The only definite focus of infection for entrance of the organism was in the skin, and there was no history of a recent focus in another region, except in one case.

It seems, therefore, these nineteen cases of blood-borne infection, reported by Phemister, directly traceable to primary skin infections, lend weight to the very strong probability that the primary focus in the case herein reported was due to an infection transmitted through the blood stream from the furuncles in the external auditory canal.

ACUTE DELIRIUM APPARENTLY DUE TO BROMIDIA POISONING

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History.—Mrs. R. B., aged 32, white, actress, admitted to the service of Dr. M. H. Bochroch in the psychopathic wards of the Philadelphia General Hospital, June 5, 1922, was unconscious, May 30, when her husband arrived home in the evening. In about ten minutes she revived, and talked rationally. That night she became delirious and talked at random, but had no fever. The next day she imagined that she was receiving electric shocks; she heard voices saying bad things about her, and thought that people were persecuting her father, and also trying to kill her with radio. No visual hallucinations were present. The history was unimportant until December, 1920, when the patient developed a pelvic inflammatory condition. At this time a physician prescribed Bromidia for insomnia. The patient took from one-half to 1 ounce daily of her own accord for nervousness, sleeplessness and pain for eighteen months.

On admission, the patient's mental status was that of a delirious reaction. She was confused, disoriented as to time, showed a memory loss for recent events, and her attention could not be fixed. In addition, many schizophrenic phenomena were present; she answered voices, and felt that people spoke about her, calling her bad names. She also spoke of radio causing her to receive electric shocks, and felt that people were trying to kill her father and brother.

Examination.—A complete physical and neurologic examination revealed nothing abnormal except moderate emaciation and pupils sluggish to light and slightly irregular.

Complete laboratory examinations were made. Repeated urinary examinations were negative. The blood picture was that of a moderate secondary anemia, with normal leukocyte and differential count. Blood and spinal fluid Wassermann tests were negative, as were cell counts, and globulin and colloidal gold tests.

Treatment and Course.—The patient was put on a forced high caloric diet with forced liquids. Hydrotherapy, in the form of continuous baths morning and afternoon, was given to allay excitement. Alkaline diuretics were given, and sodium cacodylate intramuscularly, along with ferrous carbonate after meals. The patient was afebrile during her entire stay of four weeks in the hospital. In about ten days her hallucinations disappeared; at times she would be rational, and at other times confused. By July 26, she had improved remarkably; the sensorium was entirely clear, and she showed excellent insight.

During her convalescence, the patient stated that her trouble began with constantly hearing voices; next her surroundings appeared of various colors. She felt as though some one was playing violet rays on her; at times she saw

1. Phemister, D. B.: Hematogenous Staphylococcus Infections Secondary to Foci in the Skin, J. A. M. A. 78: 480 (Feb. 18) 1922.