

adhesions, which did not, however, involve the anterior abdominal wall. An incision was made over the gall bladder and with some difficulty it was drawn up into the incision and fastened there by a row of silk sutures. The gall bladder was then opened and a cloudy whitish yellow fluid was discharged. The finger was passed into the gall bladder, but no stones could be found by a light examination. During the following ten days the patient rapidly improved, and a number of faceted gall stones were discharged. About this time the dressings were suddenly saturated for the first time with bile. A few more stones were then discharged into the dressings and the patient improved, but no more bile showed itself. July 1 the wound had completely closed, the patient was about and feeling well. July 26 the patient was again attacked with the same symptoms which she had suffered in April. I saw her at this time every day. On the third day I determined to reopen the gall bladder in the scar. The patient was as much prostrated as she had been before the first operation, and I determined now to keep the gall bladder open until I was certain that all stones were removed or dislodged. After this operation the gall bladder was drained until November 1, during all of which time there was a discharge of bile whenever the opening from the gall bladder was not plugged. After free drainage for two or three weeks without the removal of any stones, I introduced an olive-shaped urethral sound (about No. 15 American in size) into the gall bladder, and coiled up the silver handle to it so as to make a sort of spring resting against the abdominal wall, thus pulling the blunt side of the olive into the wound to act as a ball valve. This remained in the wound from the last of August until November 1, when it was removed. During all this time there was only a small and not very troublesome discharge of bile. The sound itself on removal was covered with the thinnest possible black film, which cracked, rolled up and fell off as soon as it had dried. I can not account for the obstruction which occurred in July. I was not able to find in the gall bladder, or in the cystic duct, or in the common duct any evidence of stone, although I was able without much difficulty to pass a sound into what I believed to be the intestine. During the past six months the patient has been very well and able to attend to her many duties.

Each of these cases has its own story to tell. In only one case did death result, and then because the warnings of biliary colic without jaundice were unheeded, and perhaps, too, because the necessities of the case almost demanded too great a delay after the last warning given by biliary colic with jaundice.

## A CASE OF TUBERCULOSIS OF SPLEEN, WITH SURGICAL TREATMENT.

BY A. M. HAYDEN, M.D.  
SURGEON TO ST. MARY'S HOSPITAL.  
EVANSVILLE, IND.

A scarcity of literature on the subject of surgery of the spleen has induced me to report the following case, one that has been of unusual interest to me.

About Feb. 20, 1896, Mrs. Wm. F., age 24, first felt pain in the left hypochondriac region, which, slight at first, gradually grew more severe until she came under my observation, April 19, 1896. At that time the pain in the region of spleen was at times quite intense, while at others it was entirely absent. There was no rise of temperature, but her pulse was about 100. Her appetite was good, she had no cough or bowel trouble, and attended to her household duties as usual. I prescribed counter irritants externally and quinia and codein internally. Her condition remained about stationary until May 10, when her temperature was 101 degrees and pulse 120. The pain in the spleen was quite severe and on palpation I found quite an enlargement of that organ. She had no chills preceding the rise of temperature, nor other symptoms of malaria. She was well nourished, had rosy cheeks and weighed 108 pounds, which was her average weight.

Notwithstanding she had no symptoms of malaria, I put her on quinin, Fowler's solution and syrup of the

iodid of iron, with tincture of iodine externally, and kept her on a similar line of treatment for fifteen or twenty days, during which time her condition continued to grow steadily worse. I was still in doubt about my diagnosis and called council. After a thorough examination, which included the history of both her father's and mother's families, with negative results in regard to both tuberculosis and carcinoma, we were still in doubt about the nature of the trouble that was producing the tumor in the spleen, as it had now reached a size that would justify us in calling it a tumor. My council advised a trial of protonuclein, and it was given her for about two weeks. Meanwhile the tumor of the spleen continued to enlarge, forcing its way up under the short ribs and extending down into the left iliac region and over to the median line, reaching to the umbilicus.

An exploratory operation was done June 23, 1896. The incision was made over the most prominent part of the tumor. After reaching the peritoneal cavity we found the tumor free from adhesion to the abdominal walls.

It was softer than normal spleen structure and of a grayish color. I opened the splenic cyst or covering, which is composed of peritoneum and a fibrous coat intimately connected. Inside of the cyst we found a large mass of abnormal growth and broken down splenic tissue. After removing this soft tissue, which I did with my fingers and a spoon curette, I stitched the splenic cyst to the wall of the abdomen, leaving a cavity in the cyst as large as a baby's head, with no cystic wall separating it from the small portion of the splenic structure that was not removed.

I thoroughly packed the cavity with iodoform gauze and dressed the wound open to secure drainage, thinking that suppuration would take place and it would heal by granulations. A microscopic examination of the specimen removed blasted all such hopes, as it revealed pus corpuscles and tubercular bacilli.

The patient rallied well from the operation. Peritonitis developed on the second day, threatening to destroy the patient's life; after a few days she gradually improved.

Her pulse rate was unusually high compared with the temperature. A chart was kept for twenty-two days after the operation, from which I found an average morning pulse of 114.2, the highest rate being 150, which was noticed June 26, and the lowest 85, July 8. There was an average evening pulse of 119½. The highest reached was 144, June 27; the lowest, July 5, 98. During the twenty-two days there was a mean morning temperature of 99.5 degrees; the highest point being reached on the morning of June 26, 103 degrees; and the lowest July 8, 98 degrees. There was a mean evening temperature of 100.2 degrees; the highest on the evening of June 25, at which time it reached 104 degrees. The lowest evening temperature was 98.2 degrees, and occurred on the evening of July 14, 1896. The high pulse rate continued throughout the entire course of the disease. This high pulse rate has been a peculiarity of most cases of disease of both the spleen and pancreas that have come under my observation.

The patient gradually improved in her general condition as indicated by a good appetite, marked gain in flesh, weighing more three weeks prior to death than she had for several years previous. The opening into the spleen continued to discharge a small

quantity of pus. The tubercular growth in the splenic cyst gradually returned until it attained a size much larger than prior to the operation. She began to cough about six weeks before death; the cough became so persistent and severe that it interfered with sleep. The sputum contained traces of blood and tubercle bacilli. A physical examination revealed slight dulness over nearly the entire lung surface, but no marked flatness. Mucous râles were also present. The abnormal growth gradually crowded up into the opening in the abdominal wall until it rendered the operation of dressing very painful and interfered with drainage. In order to re-establish this and make the dressing of the wound less painful, October 14 I scooped out the entire contents of the splenic cyst through the original opening in the abdominal wall. The tubercular mass was very soft and easily broken up. The only instrument required in the operation was my fingers. After controlling the hemorrhage, which was quite profuse, I dried and packed the cavity with iodoform gauze. The patient rallied well from operation, and at the end of a week had recovered sufficiently to leave the hospital and return to her home. At this time her pulse rate varied from 140 to 150. A few days after returning home her condition grew worse and she gradually declined until November 4, when she died.

Autopsy, held November 5, revealed a great many foci of tubercular deposits in the liver. The pancreas was almost a solid mass of tubercular deposits. The splenic cyst was very much enlarged and partly filled with a cheesy substance which contained tubercle bacilli and pus corpuscles. The lungs were not examined.

Under the conditions was the operation justifiable? In my judgment, the operation was not only justifiable, but demanded. In all cases of tumors or other pathologic changes in the abdominal viscera that would in all probability be amenable to treatment by a surgical operation if correctly diagnosed, an exploratory incision should be made, and any other operation that might prove to be necessary should be done at the time of exploration. I am confident that her life was not only prolonged, but made more comfortable. After she recovered from the immediate effect of the operation, pain ceased; her appetite returned, and she gained considerable flesh; she became more cheerful; took an interest in her home surroundings, and was quite happy for a time, in fact, until the growth had returned and developed sufficiently to cause pain during the act of dressing.

Any other method of treatment would not have reduced the tumor, nor relieved the pain, and, therefore, could not have been as efficient. However, she received about the same internal treatment that she would have, had she not been operated upon, and consequently lost nothing from lack of non-operative measures.

I find that tuberculosis of the spleen is by no means of rare occurrence, but that it affects children more frequently than adults. The nodules may be small and gray, or large and yellow. In acute tuberculosis the spleen rapidly enlarges as the tubercles develop. Tuberculosis of the spleen is generally secondary to that of other organs of the body, while, in the case under consideration, the spleen seemed to be the first organ involved or the primary seat of the disease, the liver, lungs and pancreas becoming involved secondarily. Reynolds says, "tuberculosis is sometimes

located in the spleen, but almost, if not always, in connection with tuberculous growths in other organs, and generally in children." Rokitsansky says, "in acute tuberculosis of spleen, the organ is smaller and softened very much like the condition it assumes in the typhoid state." Jenner says that it is often the seat of tubercle in children, but only in exceptional cases in the adult.

The lungs and mesenteric glands are very commonly diseased at the same time.

The tubercles are often distributed throughout the spleen substance with much regularity, and they may be solid and hard, but in the course of time they soften in the center, and assume a curdled appearance, or appear like cheesy substance. The "Reference Handbook" says, "acute splenic tumor, without tubercular deposits, occurs during the progress of acute tuberculosis." Splenic tubercles proper are apparently either always secondary to tuberculous growths in other organs, or appear simultaneously with widely disseminated tuberculous growths during the course of acute miliary tuberculosis. In the former case the tubercles are often not very numerous and are visible to the naked eye, varying in size from that of a millet seed to that of a pea, the largest doubtless being composed of several smaller aggregated tubercles. These growths are sometimes called solitary tubercles. They are at first grayish and translucent, assuming later a yellowish or cheesy appearance.

Tubercles of the spleen are alike devoid of interest for the clinician, the diagnostician and the therapist. Loomis says, "tubercles in the spleen develop in the spleen pulp." The nodules may be gray and small, or large, yellow and cheesy. Tubercular formations are very common in young children. Yellow tubercular masses, varying in size, are frequently formed in the spleen in connection with similar formations in other parts of the body; occasionally they soften and form abscesses. The small splenic vessels are often clogged with lymph and fibrin. Tubercles of the spleen can not be recognized during life.

Wm. Pepper says, "tubercle frequently attacks the spleen, but only as secondary to general tuberculosis."

Wilks and Moxon think the larger nodules of tubercle may be primary, but there seems to be no evidence in support of this opinion. As a symptom of general tuberculosis, splenic enlargement from congestion simply, and quite without any specific deposit, is observed as a form of acute splenic tumor. It is at the later stages of general tuberculosis that distinct deposits of tubercle are formed in the spleen, and these are consequently almost crude. It is usually impossible to diagnose the existence of splenic tubercle during life.

Dr. Orth says, "tubercular changes in the spleen are very common. Primary tuberculosis of the spleen must be very rare, if, indeed it ever occurs, but nowhere is secondary tuberculosis more common than in this organ."

At the time of the first operation the spleen was the only organ in the body that was affected. Would it have been good treatment to have removed it entirely? If so, what would have been the probable results had she survived the operation? If the organ had been removed, and as we believed at the time that was the only point of infection, the patient might have been permanently cured of the tuberculosis. The fact that the patient's health was very much improved after the operation and did not depreciate until other organs

became involved leads me to the above conclusions. Had complete splenectomy been performed, with the result of a complete cure of the tuberculosis, would her life have been prolonged sufficiently to have justified so formidable an operation?

Dr. Wyeth says, "complete splenectomy may be demanded in displacement of the organ followed by interference with the function of other viscera, or for the relief of pain caused by the spleen in an abnormal position." It has been performed in several instances on account of the enlargement of this organ in leucocythemia, but without the success which would encourage a repetition of the operation.

In Ashhurst, "International Encyclopedia of Surgery," Vol. V., p. 1103, I find the following statistics, causes for which the spleen has been excised: From a table published by Mr. Herbert Collier, out of twenty-nine operations performed for diseased conditions since the year 1549, thirteen have been for disease other than leucocythemia, and sixteen for leucocythemia of the gland. Of these sixteen all have been fatal. Of the diseases of the spleen unasociated with leucocythemia in which splenectomy has been performed, in two cases it has been a floating or wandering spleen; one, hypertrophy associated with a floating state of the organ; three, hypertrophy from malaria; three, simple hypertrophy; one, hydatid followed by sanious discharge; one, secondary enlargement after cirrhosis and associated with ascites and anasarca; one, sequestered spleen in peritoneal abscess; and in one hypertrophy, with a unilocular cyst containing three liters of a viscid fluid. Of these thirteen cases, eight have recovered. Of forty-three cases of splenectomy for disease, to which the editor has references, thirty-one are known to have terminated fatally, a proportion almost identical with that shown by Mr. Collier's figures. For injury of the abdomen, implicating the spleen and in several instances attended with protrusion, the results of excision and extirpation have been very encouraging. Nussbaum states that sixteen out of twenty-six operations performed for traumatic causes have been quite successful. (The editor has references to twenty-one cases of splenectomy for traumatic causes, all of which are said to have terminated successfully.)

Statistics are yet not sufficient to enable us to arrive at a satisfactory prognosis in such cases.

### AN INTESTINAL OBSTRUCTION, DUE TO AN ABNORMALLY FORMED APPENDIX, ABNORMALLY LOCATED.

BY ANGUS McLEAN, M.D.

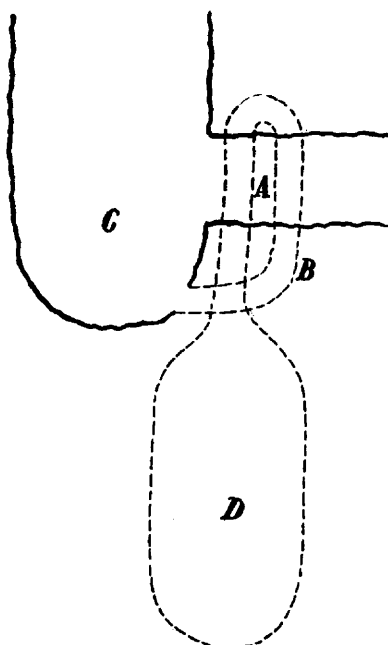
LECTURER AND DEMONSTRATOR OF ANATOMY, DETROIT COLLEGE OF MEDICINE; JUNIOR SURGEON, HARPER HOSPITAL, ETC.  
DETROIT, MICH.

The patient who had this rare and unfortunate anatomic phenomenon was a man aged 40 and by occupation a foreman. He was taken with pain in the right lumbar and epigastric regions while at work; the pain was intermittent and gradually became more severe. He was compelled to quit work and go to his home. He became nauseated in a few hours and sent for his physician, Dr. Charles E. Bleakley. The Doctor examined the abdomen but found nothing of a localized character. He administered cathartics, and a slight anodyne for the pain, but the cathartics were ineffectual, and upon seeing him again he gave large doses of cathartics and had this followed by rectal

enemata, but this also proved ineffectual. The pain had now become so severe as to require occasional hypodermics of morphia. The Doctor grew suspicious of obstruction and had medical counsel called, but nothing definite was decided upon and the patient was continued upon symptomatic treatment.

I saw the patient on the fifth day and found the abdomen very much distended but no marked localized tenderness. He was not suffering from pain at this time, although he had had no anodyne for twenty-four hours, but appeared to be in a toxic condition. His temperature was 101 degrees F. and pulse 96. The attendant stated that this was the first day on which he had had any fever. I advised that a laparotomy be done at once, and the patient was removed to the Detroit Sanitarium and the operation performed.

After the anesthetic was administered and the tension of the abdominal muscles had relaxed, there appeared to be a slight fulness at the right side just above Poupart's ligament. An incision was made along the outer border of the rectus muscle (right side) opposite the umbilicus. The peritoneal cavity



C, cecum; A, ileum, surrounded by appendix and where obstruction took place; B, point of perforation; D, distended portion.

contained a slight amount of blood-stained fluid; the small intestine was distended and congested and of a dull red color, with some exudation and slight adhesions between its loops. The large intestine was normal in appearance. Upon manipulation a blind pouch of distended intestine appeared at the opening (resembling a Meckel's diverticulum). This was followed to its base and found to be attached to the lower portion of the cecum and to encircle the ileum at its junction with the large intestine, and in its swollen condition so encroached upon the ileum as to obstruct its lumen. The appendix was slightly gangrenous and perforated about one-half inch from the cecum in the portion extending from the cecum to the ileum. A small amount of fecal matter had escaped. The appendix was unwound from around the ileum and removed.

The accompanying diagram will show the position of this abnormal appendage, the heavy lines indicating the walls of the intestine and the dotted lines that of the appendix.