ABDOMINAL NEURASTHENIA *

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Among the large number of so-called neurasthenics, there is a group in whom symptoms relating to the digestive apparatus largely dominate the clinical picture. This group has been classified by a number of writers as "abdominal neurasthenics" and the digestive troubles have been attributed, very properly in most cases, to the loss of tone in the muscular and chemical activities of the digestive apparatus secondary to the neurasthenia. As a result, treatment of the abdominal disturbances has been largely symptomatic, and investigation has usually stopped short after the examination of one or two test meals and stools have revealed nothing of marked significance.

With the aid of stomachics, sedatives, cathartics, irrigations, and other procedures, the digestive tube has been used merely as a machine for forced feeding in the attempt to regain the general strength and, in conjunction with the various other therapeutic measures, to restore the nervous balance.

A small series of cases from this group has been studied with great interest during the last six years and the findings both from investigation and from the results of therapeutic effort indicate a new line of attack which is successful in selected cases.

For brevity's sake a few characteristic case histories will be summarized and permissible deductions drawn from them.

REPORT OF CASES

CASE 1.—History.—Miss Bessie C., 33 years old, was well until 12 years of age. Since that time she had never been robust. She had had various children's diseases. For years she suffered from marked constipation, alternating with cramps and diarrhea. In 1910 she was operated on for "chronic appendicitis." The appendix was not found, but a large lymph gland was removed from the cecal region and was reported to be tuberculous. Since 1913 onward she had had irregular attacks characterized by loss of consciousness, followed by abdominal pain, nausea, vomiting and marked prostration. She became a chronic invalid, spending much of her time in bed. She could assume no regular duties in life, because of headaches, lack of stamina and abdominal disabilities. She was seen by many consultants who labeled her "neurasthenic and hypochondriac." She became progressively worse.

Physical Examination.—In the fall of 1916 she was placed in the care of Dr. Malcolm Goodridge. He found that she was of small size, slender, fairly well nourished and that she had good color. (She had just finished a three months'

* Read at the Forty-Sixth Annual Meeting of the American Neurological Association, New York, June, 1920.

stay at a sanatorium.) Other findings were hemoglobin, 100 per cent.; red cells, 6,187,000; white cells, 10,000; polymorphonuclears, 70 per cent. Head, mouth, lungs, heart and urine were negative. Stomach, 100 c.c. retention 3 hours after 200 c.c. meal; achlorhydria. Stools were negative. The abdomen was somewhat distended with gas, and showed the scar of the appendix operation. There was a fairly marked tenderness over the right iliac region with gurgling of gas on pressure. There was also tenderness in the right hypochondrium near the ninth cartilage and just to the right of the median line in the epigastrium. The stomach was considerably enlarged.

Roentgenograms revealed a large "fish-hook" stomach with the greater curvature below the brim of the true pelvis; the duodenum fixed high up under the liver with sharp angulation between the first and second portions and with distortion of the cap. The cecum was dilated and descended into the true pelvis. The hepatic flexure was fixed high and angulated near the duodenum.

Consideration of the clinical history and the objective findings, especially the enlarged stomach with retention, the high fixation and distortion of the duodenum, the high fixation and kinking of the hepatic flexure with marked dilation of the cecum and stasis in the ileum, led both Dr. Goodridge and myself to feel that the anatomic distortions caused the abdominal symptoms and that the neurasthenia had resulted from the oft repeated pains and continued toxic absorption.

Treatment and Course.—She was operated on Oct. 20, 1916, under ether anesthesia. A transverse right rectus incision was made 4 cm. above the umbilicus. The findings were enlarged stomach, freely movable, reaching well over into the right flank, then turning backward, upward and inward to the place where the summit of the duodenum was held fast to the proximal third of the gallbladder by a double fold of peritoneum which kinked and compressed it. This double fold passed over the duodenum down to the hepatic flexure, which it also held high and kinked. Neither duodenum nor flexure could be displaced downward. This double fold was divided transversely and the duodenum and hepatic flexure mobilized downward so that kinks and compression were relieved. The gallbladder was normal except for attachment of the double fold. Adhesions between the omentum and the scar of the previous operation were separated. A small retrocecal appendix was found and removed. There were no signs of tuberculous infection in the ileocecal region. A Jackson's membrane of moderate size which kinked and compressed the ascending colon was divided and the colon mobilized. The wound was closed and she was returned to bed in good condition.

Recovery was uneventful and comfortable. She remarked that a "dragging sensation" always present in the epigastrium had disappeared. Healing was by primary union and skin sutures were taken out on the sixth day. She took food freely and with relish after the first few days and without her customary pains and flatulence.

Two months after the operation she reported she had had no abdominal disturbance and had gained much in weight and color.

Sixteen months after operation she reported that she never had any discomfort after food unless she was extremely tired; she was troubled with gas only at rare intervals; she could eat all kinds of food and was moderately constipated. During this interval, for several months continuously, when her father and mother were both ill, she managed the household and helped with the nursing, doing far more in the way of continuous physical, mental and emotional effort than she had ever been able to do in the preceding six years.

At the end of two and three-quarters years she reported that her digestion was absolutely normal and her strength and capacity for steady work "decidedly" increased. She had some headaches and occasional constipation. During the last six months of this period she had felt better than at any time in years.

CASE 2.—History.—Mr. W. T. J., Jr., 27 years old, was well until he was 26 years old, when he developed a marked nervous breakdown in the fall of 1916. In January, 1917, he had influenza twice, followed by profound neurasthenia. After two months of quiet outdoor life in the South he improved considerably. He then entered the Plattsburg training camp, but after a month was discharged because of "recurrent neurasthenia." He was then carefully examined by Dr. Walter Niles.

For over a year he had been much troubled with belching and flatulence, which was not accompanied by pain. His appetite was good and his bowels moved daily. Often he had a sensation of weight after eating. His chief complaint was dull headache, loss of memory and initiative, profound lassitude, mental depression and attacks of hysterical weeping. He was incapable of carrying on his work as a lawyer.

Physical Examination.—He was a tall, slender, dark skinned, sallow man. Examination of the head, throat and chest was negative. The blood pressure was 144 mm. The abdomen was normal in contour and mobility and was moderately tympanitic everywhere. The sigmoid was slightly tender. Slightly to the inner side of the right anterior superior spine and about 4 cm. below its level was a localized spot of extreme tenderness, associated with muscular spasm. To the right of the median line in the epigastrium was an area of definite but moderate tenderness.

Roentgenograms demonstrated a fish-hook stomach with the antrum well over to the right of the spine. It showed no deformity in outline and peristalsis was vigorous. The stomach was empty in three hours. The first portion of the duodenum was of average size, with smooth edges and no sign of ulcer. It was fixed high. Eight hours after eating there was slight retention in the ileum. Thirty-six hours after eating 90 per cent. of the meal had been discharged. The cecum was deep in the pelvis, from which it could not be dislodged, and it was tender. The urine was clear, acid, specific gravity 1.029, with a faint trace of albumin and no sugar. Microscopic examination was negative. Findings of the stool were negative; gram-positive bacteria, 25 per cent.; gram-negative, 75 per cent.

Treatment and Course.—He was operated on Nov. 27, 1917, under ether anesthesia. A transverse right rectus incision was made about 5 cm. above the umbilicus. The findings were: Stomach and pylorus free from ulcer or inflammation, duodenum fixed high to the proximal 4 cm. of the gallbladder by a double fold of peritoneum which caused definite kinking of the duodenum at the junction of the first and second portions. The gallbladder was normal except for the fold running to the duodenum. The liver was normal. The ascending colon was compressed by a Jackson's membrane. The cecum was nonadherent, dilated and had attached to it an appendix about 8 cm. long, irregular in caliber and with one considerable enlargement (fecal concretion) at about its middle. The remainder of the abdominal contents were normal.

The procedure was: Division of the duodenal membrane, mobilization of the duodenum downward (5 cm.) with whipstitching of the raw edges; division of Jackson's membrane with release of the ascending colon; appendectomy, with inversion of stump; closure of wound by layer sutures.

Recovery was uneventful, and he rapidly regained his health. He joined a naval cadet camp and went through the hard training without the least trouble. His various neurasthenic and hysterical symptoms disappeared within a month of his operation and have never recurred.

On Jan. 24, 1920, he reported that he had been back at business since his discharge from the navy, that he was full of energy and initiative all the time, was never tired and felt better than ever before and had gained 30 pounds.

CASE 3.—History.—Mrs. T. N., 39 years old, as a child had children's diseases. She had also been subject to attacks of abdominal pain at irregular intervals since childhood, chiefly in the right lower quadrant. These pains were of short duration, but were prolonged by walking. Five years ago these attacks became more severe. The last one occurred in June, 1917. Her periods had always been normal. She had two children, 10 and 8½ years old. Her appetite was fair, food caused no pain, but she had much flatulence, and was only occasionally constipated. She suffered frequently from severe headaches; tired out quickly and completely and was unstable in her nervous system and self control. She had become progressively worse during the last two years.

Physical Examination.—She was a tall, thin, sallow, irritable woman, weighing 110 pounds. Examination of the heart, lungs and urine were negative, as also was bimanual pelvic examination. The abdominal wall was flat, minus subcutaneous fat, and moved normally in respiration. The sigmoid was spastic and moderately tender to pressure. Pressure along the colon upward and to the right caused much gurgling of gas, but no pain until the right ninth costal cartilage was reached, where there was localized tenderness. The cecum was much distended. There was extreme tenderness over an area 2 by 1 cm. about half way from the right anterior superior spine to the umbilicus. As her appendix had to be removed, it seemed unnecessary to subject her to the trouble and expense of a barium series of the gastro-intestinal tract, as complete exploration could be done when the appendix was removed.

The diagnosis was chronic appendicitis; probable Jackson's membrane.

Treatment and Course.—She was operated on Dec. 4, 1917, under ether anesthesia. A transverse incision was made of the right rectus, 2 cm. above the umbilicus. The findings were: The stomach was greatly distended and crowding over into the right flank; there was no ulcer. The duodenum was kinked and held high by a short double fold of peritoneum running from it to the proximal end of the gallbladder and also by firm, thick adhesions running to the undersurface of the right lobe of the liver, 2 cm. to the right of the gallbladder. The liver and gallbladder otherwise were normal. The right kidney was freely movable. The appendix was pathologic, running upward and inward behind the cecum. Jackson's membrane extended from just above the cecum to the hepatic flexure, where there was a thick, short band, kinking and compressing and holding the flexure high. The uterus was normal. The right ovary was quite fibrous and had a firm nodular growth at its hilus. The left ovary was one cyst.

The following procedure was used: Division of membrane and adhesions binding duodenum to gallbladder and liver; mobilization of the duodenum downward 4 cm.; raw edges whipstitched; appendectomy, with inversion of stump; division of Jackson's membrane with mobilization of the colon; double oophorectomy, one ovary being a cyst and the other showing a probable beginning malignancy. The wounds were closed by layer sutures.

Convalescence was uneventful; the wounds healed by primary union and the patient returned home on the nineteenth day. She was given endocrine therapy from the

After five months she reported that she was feeling well and was slowly gaining weight. After eighteen months she was maintaining her improvement in color, weight, digestion, strength and capacity for sustained effort. She has recovered her nervous balance.

CASE 4.—History.—Miss Jean W., 17 years old, was said to have had typhoid when 3 years old and since that time had been subject to bronchitis. In 1910 she was operated on for hernia and had not been well since, suffering from severe headaches, anorexia, constipation, nervous depression, backaches, cold, clammy hands and feet, insomnia and entire lack of stamina. She was troubled with constant flatulence, by a sense of fullness after eating small amounts of food and by pain two hours after eating. Her periods were regular, profuse and painful, necessitating rest in bed.

She was studied by Dr. F. S. Meara, who reported the following results: Blood: hemoglobin, 81 per cent.; color index, 0.8 per cent.; red blood cells, 4,740,000; white blood cells, 6,900; polymorphonuclears, 45 per cent.; lymphocytes, 46 per cent. Urinalysis: The urine was acid; the specific gravity was 1.018; there was a faint trace of albumin and no casts. The stools were negative; gram-positive, 15 per cent.; gram-negative, 85 per cent. Lungs and heart were negative.

She was tall for her age, thin, and fairly nourished. The abdominal wall was thin and retracted, but moved normally with respiration. The stomach was enlarged down to the umbilicus. The sigmoid was spastic and moderately tender. There was distinct tenderness and resistance just to the left of the median line about 3 cm. above the navel; also at a point 6 cm. within and 2 cm. above the level of the right anterior superior spine. Otherwise the findings of the abdominal examination were negative. Her hands and feet were cold.

Roentgenograms showed: Marked gastropnoia, the greater curvature being below the sacral promontory; six hours' retention of barium; no sign of ulcer; retention in the duodenum with signs of obstruction at the duodenojejunal angle. The appendix visualized early, segmented and retained the barium throughout the period of investigation (forty-eight hours). The colon was slow in emptying, the cecum was club-shaped and showed retention. The ileocolic valve was incompetent.

Treatment and Course.—Operation was advised and accepted on the basis of the obvious disturbance of the appendix and duodenojejunal angle. The operation was performed May 30, 1918, under ether anesthesia. A transverse incision of the right rectus was made just above the umbilicus.

The findings were: The stomach was normal except for enlargement and adhesion between the pyloric antrum and the transverse colon. Pylorus and beginning duodenum were normal, except that they were dilated. The duodenojejunal angle was pulled upward and to the left by a strong peritoneal fold which caused marked angulation and obstruction. There were several enlarged lymph glands among the superior mesenteric vessels near the angle. A broad thick Jackson's membrane enveloped the cecum, ascending and beginning transverse colon, causing compression and kinking. The appendix was 10 cm. long, segmented and nonadherent. There was a calcareous gland in the ileocecal angle. The pelvic organs and kidneys were normal.

The following procedure was used: Plastic release of the duodenojejunal angle which came down 5 cm.; removal of the lymph gland for pathology; release of the colon from Jackson's membrane; appendectomy, with inversion of the stump; removal of the calcareous lymph node. The wound was closed by layer sutures.

Recovery was uneventful except for a stitch abscess in the skin. On the twenty-third day she left the hospital feeling better than for months. The lymph nodes were reported as showing simple chronic inflammation. Five months later her physician reported great improvement in every way. Twenty-four months later she reported marked improvement in appetite and capacity to take general diet. She was occasionally troubled with gas and constipation. Her capacity to do things was greatly increased.

SUMMARY AND CONCLUSION

These four cases, briefly summarized, were selected from a larger series to illustrate varying phases of the problem.

The patient in Case 1 had had a prolonged history of abdominal pain and digestive disturbance, on which the neurasthenic condition had been engrafted and finally became the predominating feature in the minds of many of the consultants. The patient in Case 2, who had had little digestive disturbance beyond flatulence and that without constipation, suddenly developed a neurasthenia, apparently idiopathic, which was greatly increased by influenza. For a year he had had various treatments without result. The patient in Case 3 also had few symptoms relating to the digestive tract, except flatulence and occasional constipation. Her neurasthenia came on gradually during several years, was associated with lack of mental balance and probably with disturbance of the endocrine system. The patient in Case 4 had never been robust and developed a profound neurasthenic condition following a simple herniotomy. In her case the neurasthenic and abdominal symptoms developed simultaneously and were about equally prominent over a period of eight years.

All four of these patients had been under the care of competent internists for from one (Case 2) to eight years, and were given repeated rest cures and other treatment, under which they improved only to slide back on attempting to take up their duties in life. Finally a painstaking examination of the digestive apparatus indicated what proved to be, in these cases, the chief underlying cause of the illness. The nerve exhaustion was apparently secondary to the absorption of toxins from the digestive canal, and it is my belief that the formation of these toxins largely resulted from mechanical interference with the normal motility of the digestive canal.

It is worthy of notice that in each case there was a high obstruction and a low obstruction. The high obstruction resulted from kinking and compression of the duodenum by a Harris band from gallbladder to duodenum in Cases 1, 2 and 3, and from kinking of the duodenojejunal angle in Case 4. The low obstruction in each case resulted from constriction and angulation of the ascending colon and hepatic flexure by a Jackson's membrane. In each case the appendix was definitely pathologic.

In this type of case, examination of the gastric contents seldom gives any information of value except as to the presence or absence of retention. Likewise, examination of the stools seldom gives information of value.

The diagnosis depends on the manual examination of the abdomen, showing tenderness over the appendix, ascending colon, hepatic flexure, gallbladder and pylorus or duodenojejunal angle, or showing distention of the cecum, or distention and ptosis of the stomach or dilatation of the duodenum. These may occur in varying combinations.

These findings are verified, amplified or modified by the roentgen series. A series to be of any value must be made by a man skilled in determining the times, attitudes and numbers of plates to be taken, and also in interpreting the plates and the results of fluoroscopy, which is one of the essential elements of a proper roentgen examination.

When an accurate diagnosis is made, a properly planned surgical procedure usually gives a prompt and permanent relief to the digestive disturbances and rapid recovery from the associated neurasthenia.

The obvious deduction from the facts presented is that a complete examination should be made of the digestive tract of every neurasthenic. In a certain proportion of cases surgery would offer a short cut to recovery.