Original Articles.

THE OPERATIVE TREATMENT OF GASTROENTEROPTOSIS.

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IN being invited to present a surgeon's solution of a very complex problem before so distinguished a body as the Massachusetts Medical Society, I am conscious of having been signally honored. For this I am sincerely grateful. Whether your program committee exercised wisdom proportionate to its generosity in choosing me to present the surgical aspect of visceroptosis remains to be seen. For in the beginning it is proper to remark that the views to be expressed, while held by a growing number, are at variance with those expressed by the majority of surgeons. They are personal convictions, however, which have come to me and have been made firm as experience has grown riper.

From the report of the combined meeting of the American Obstetrical and the American Surgical Associations in the transactions for 1910 of the latter, and again from that of last year, it will appear that the patient with visceralptosis has been definitely given a passport to the domain of the internist, from which the orthopedist may get him by requisition. Where many men of large experience and great authority in matters surgical hold out against operative interference, it requires conviction born of a series of successes to advocate the use of the knife, when other measures have failed, and this conviction I have. It is to be regretted that ptosis of the abdominal viscera was always considered by Glenard as only a part phenomenon of a very complex condition. Doubtless in many cases this is true, and if the condition is not congenital it develops early in life, is often hereditary and is unmistakable. A young woman, more rarely a male, without any pathologic cause of tissue relaxation, has stooped shoulders, a dry skin, prematurely wrinkled, breasts pendulous, and an abdomen flabby like that of a woman who has given birth to many children. The hernial apertures are relaxed, the uterus retroverted and the stomach often dilated. There is a general tissue insufficiency as often manifested, for example, by a condition which does not seem correlated, namely, a flat foot. The circulation is poor; the muscles even in action are feebly outlined. The patient, while young, is habitually tired, psychically depressed, usually pessimistic, in short a confirmed neurasthenic. Here is a condition which might well be termed panoptosis and in which the surgery, which I have the honor to represent on this occasion, can offer but little.

Since this condition is easily recognized during the growing period of the child the postural combined with the mechanical treatment, if instituted early enough, must certainly be of great

benefit. There is, however, another large class of cases in which the sagging of the abdominal or pelvic organs is associated with remote effects which hardly seem correlated. They are attributed for the main part to the results of intestinal stasis. It is from this center that much of our knowledge of the relation of this condition to rheumatoid affections has emanated. These are, however, minimal in importance to the neurasthenic states, which we are coming to believe are largely a result of chronic auto-intoxication of intestinal origin.

Despite the fact that the latest German authorities have discovered an increase in number of intestinal bacteria proportionate to the frequency of the stools, it seems clinically certain that absorption from the large intestine during stasis is deleterious to the nervous system and if long continued engenders a flood of phenomena vaguely called nervous.

To dwell upon the latter is beyond the purview of this paper. But it is because of their preponderance that the sufferers therefrom are often passed from one specialist to another without obtaining a careful analysis of their cases. It is manifestly impossible to dwell at this time on all the abdominal ptoses without abusing the privilege you have given me. I shall, therefore, limit myself to the consideration of those of the gastro-intestinal tract. But one feature is common to them all, namely, that the nervous habit is as easily acquired and becomes as easily fixed in the visceroptotic as is the universally recognized epileptic habit, in which even after the successful removal of the cause as, for example, from depressed fracture, the symptoms soon recur. It must be made plain that if anything is to be accomplished for the relief of the nervous manifestations of visceroptosis, the measures indicated in the individual case should not be delayed. Fortunately our methods of diagnosis have been so quickly advanced that when the indications are clear a radical treatment need not be long put off.

It is to be regretted that in ptosis of the abdominal viscera the clinical manifestations bear no fixed relation to the form or the degree of sagging. A complete prolapse of the uterus often causes less disturbance than a relatively slight retroversion that is fixed. A movable kidney that can be displaced from the loin to the pelvis may produce no symptoms at all, while one that moves but little beyond the normal limits may by reason, for example, of an anomalous vessel, give rise to painful and often serious obstruction, which nothing but operation will relieve. By way of digression I may here call attention to the conservation which surgeons generally are displaying in regard to fixing movable kidneys. We are all fixing fewer kidneys than formerly, because the operation, as a rule, failed to relieve the nerve symptoms which were erroneously attributed to nephroptosis. Particularly are the displacements of the stom-

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ach and of the various segments of the colon of widely varying importance in the causation of either local symptoms or those that may be termed neurasthenic. Fecal stasis in one individual may not be at all deleterious, whereas in another it produces a toxemia of which we are just beginning to appreciate the protean manifestations. A stomach occupying the upper pelvis may perfectly perform its function, while another much less prolapsed may be delinquent through lack of tone of pyloric angulation.

In seeking the mechanical, including the operative therapy, for visceral sagging it is a priori, necessary to consider where the fault lies in the forces concerned in keeping the viscera in their normal positions, and in stimulating them to function. Of these the equable atmospheric pressure is the only one that never varies. The musculature of the abdominal wall including, of course, the diaphragm and its attachment to the cervical fascia, plays a very important role. The movements of the colon, rather inactive during the sleeping hours, are stimulated to activity by the first muscular exercise incident to rising and dressing. Of course an ample breakfast helps along. Every clinician must cope with the tendency to constipation attending confinement in bed. My excuse for recalling these elementary observations is the fact that in the fixation operations for the acquired types of ptosis which, of course, are in the minority, the relaxed abdominal wall is generally ignored and remains a potential factor in the etiology of recurrence. But the visceroptosis which results from the failure of its muscular support differs essentially from that which is congenital in origin and in that the neurasthenia so common in the latter is far less frequent. It is only necessary to recall the equanimity with which wide diastasis of the recti or ventral hernias amounting almost to evisceration are borne with only local effects. The overshadowing factor in the etiology of this condition is some congenital variation in the embryonic process of parietal fixation of the different parts of the intestinal tube. The more we analyze our cases of visceral ptosis the more we find a history dating back often to childhood with symptoms increasing as age advances.

The variations in the fully developed adult visceroptosis are almost innumerable, but they appear to me secondary to two primary or general conditions which as yet have not gained the recognition they merit.

The first and more important of them I believe is the insufficient fixation of the cecum and of the lower part of the ascending colon. The second is the relatively high fixation of the splenic flexure of the colon with consequent sharp angulation at this point. That a mobile cecum should be a factor in any morbid condition cannot be readily conceded because it is so often found without producing symptoms. Indeed, every fifth child is born with a mesentery for the entire colonic length. The recum-

bent posture of infantile life doubtless prepares the child for the erect posture of later life. It helps to fix the colon and makes of it a retro-peritoneal structure by the time permanent functions of absorption and inspissation of waste products are to be established. In every tenth subject, of 640 cadavers carefully examined, Wandel found the cecum and lower ascending colon completely enclosed and mobile to a degree permitting torsion, kinking or displacement. Twenty-eight of them he found in children, thus bearing out the hypothesis I have just advanced.

It is in the cecum that the fecal current is first arrested after being rushed in a little more than two hours through the many feet of small intestine, and it is here that stasis normally occurs. Without the support given by fixation, cocatony, as Fisher calls it, is likely to ensue and with it all the secondary local and general manifestations incident thereto. In the cecum and the colon adjoining bacterial activity reaches its climax. In the event of inadequate or delayed drainage the symptoms of auto-intoxication become pronounced and finally, as Pileher has recently put it, neurasthenia in some of its many forms crowns the process.

It is a far cry from mobile cecum to neurasthenia, but it is making itself heard. A prolapse of the head of the colon may give no evidence whatever of its presence and be discovered at operation and then often have its causative significations completely overlooked.

Every surgeon has occasionally removed a long freely movable and nearly or quite normal appendix on the diagnosis of chronic appendicitis. They are cases without the history of acute and febrile attacks, but in which the symptoms are evanescent, colicky attacks, ill-defined gas pains and above all constipation with the endless train of nerve symptoms which it so often begets. If the pains recur after operation we lightly ascribe them to adhesions or neurasthenia. We remember these operations as easy ones because the cecum although perhaps at first not readily found because the ascending or transverse colon would get in the way, could when found, be easily drawn into the wound together with a good part of the ascending colon. I have found this condition not only in multipara but quite often in young children and in adolescents of both sexes.

In its symptomatology the condition greatly resembles the pseudo-appendicitis of Nothnagel. What actually occurs is a ptosis of the mobile cecum of a mobile ascending colon or of both. In the very young a pericocolitis with the film-like vascular covering does not occur. But I have seen it now in seven cases of what appeared to be primarily a mobile cecum. The following is the most interesting of the neurasthenic cases of this kind that has come under my observation.

Mrs. T., aged 40, the mother of three children, has for the last eight years suffered from ob-

severe pains in the lower right abdominal quadrant. Has always been the subject of chronic constipation. Headaches were of frequent occurrence and at times, when the constipation was especially prolonged, she had attacks of vomiting. The severe pains were paroxysmal in character and were believed to be due to a loose kidney. The course of the disease was *affebrile*. Relief had been sought by the patient at many hands but without success. She had become *neurasthenic*. The statement was made that during her paroxysmal attacks a painful swelling appeared in the right lower quadrant, which was believed to be the distended prolapsed kidney. Urinalysis negative. Ureteral catheterization with a leaded catheter and radiography revealed a phlebolith one-half inch removed from the ureter. On the right side there could be moved under the examining fingers the distended head of the colon, from which, under pressure, the contents escaped. The operation revealed a normal appendix, the cecum and lower portion of the ascending colon enormously distended and in the lower part distinctly movable. Velamentous injected adhesions covered the surface of the cecum, and one band, distinctively obstructive in its effect, stretched like a wire over its front. With the division of this band and all the lesser ones in reach an ocular and aural demonstration of its obstructive effects was given by the emptying of the colon with a gurgling sound. The operation was completed by the removal of the phlebolith from the pelvis. Constipation, pain and *neurasthenia* have gone together.

Except for the phlebolith found in this case it fairly typifies a condition which should be regarded as a distinct morbid entity. Experiences are rapidly multiplying to show that, although the appendix still occupies by far the most important place in acute affections of the iliocecal region, there are many cases in which it is subordinate in importance. This, notwithstanding the dictum of Kelly that primary typhilitis is among the rarest of diseases, and the remark of Deaver that *stercoral typhilitis* may occur, I do not deny; that it does occur I do not believe. If with a normal or nearly normal appendix conditions such as have been described are found we must look for another cause. I believe it to exist in congenital malformations of this region which, with the tendency to fecal stasis, torsion and infections, short of the suppurative, give rise to very varied anatomic changes. Just as nonperforative affections of the gall-bladder, of the stomach or of the uterine appendages can produce changes in the adjacent peritoneum, so a distended cecum or colon may give rise to adhesions which may assume the form of the thin vascular film-like membrane so well described by Jackson, or to firm white fibrous bands which more or less constrict the bowel lumen. That this is the result of a low grade of infection is made probable by the observations of Hoffmeister, who in ten cases found the trico-

cephalus dispar outside the gut wall. That deformities notably of the appendix and occasional kinking of the ilium should often result is self evident. It follows, of course, that the removal of the appendix alone cannot be curative. For this reason it has long been a question in my mind whether the very short incision now so universally made in the interval appendix operations is the best to use in all or even in most cases. Surely in the cases under consideration more room is desirable both for exploration and for instituting the necessary remedial procedures. A long pararectal incision can be made in the beginning since fortunately a distinct clinical syndrome results from the conditions described, and both by touch and by radiography a diagnosis can be made. I believe that the pericolic adhesions are only the result of an unsuccessful effort of nature to overcome a congenital defect, which surgery alone can successfully correct; and procrastination is here as elsewhere out of place. In *cecopexy* combined with *cecoplication* when *typhlectasia* already exists we have a safe method of overcoming primary cecal stasis, and which if done early enough will do away with the various exclusion operations, which threaten to become the fashion.

This brings us naturally to the typical prolapse of the midcolon with its angulations, its long history of indistinct, ill-defined abdominal symptoms, the necessity for daily cathartics and all the far-reaching consequences of constipation. There are few as yet who follow where Lane has led, but we are indebted to him for a clear, explicit and bold pronouncement of the causes and dire local and general results of fecal stasis. No one else, with the exception of Metschnikoff, has so clearly portrayed the deleterious results of colonic auto-intoxication. More than any other he has clarified our understanding of the progressive nature of a condition in which according to its severity, the operative procedures to be undertaken must be proportionate.

A festooned colon reaching to the pelvis is abnormal. At a right angle it should pass horizontally from right to left and from about the midline gracefully ascend to the splenic flexure where, under a more or less acute angle with consequent almost natural valve formation, it passes into the descending colon. The splenic flexure is the most fixed and the highest point of the colon. Its attachments to the diaphragm are firm and the angle naturally divides the large intestine into two parts, the proximal of which is always more or less filled with feces, whereas the anal portion is practically empty and serves only as a passageway before the final expulsion. The attachments of the hepatic flexure are very much less firm. Overfeeding and inattention to regulating intestinal evacuations are liable to make the first changes in the transverse colon when it is overloaded. The fibrous band, which we so often see at the hepatic flex-

ure looks like a misdirected effort to sustain the lowered arch at this, its proximal end. If the hepatic flexure does not sink, the angulation here in turn produces complex changes in the cecum and in the ascending colon. How large a part antiperistalsis, a physiological factor which we must recognize, plays in the development of the conditions described as a result of ignoring the calls of nature cannot be determined. But retrogression of the fecal current has been often demonstrated by radiography. On account of the lower level of the hepatic flexure and its loose attachment the descending limb of the prolapsed colon readily lies in contact with the distended ascending colon, and when the film-like adhesions occur the well-known double barreled shotgun arrangement of these two segments of the colon is formed. Fortunately the sagging transverse colon is as a rule mobile. When it is fixed it is usually from or associated with some lower abdominal lesion which the x-ray may not have revealed. Surprises sometimes come in this manner.

Several months ago I operated upon a virgin with marked coloptosis. The symptoms of neurasthenia were pronounced. There was nothing to indicate ovarian disease. The operation revealed a sagging transverse colon fixed through the omentum to a tuberculous mass involving the left tube, which was removed. The patient recovered more promptly from the operation than did the surgeon from the chagrin of having relied almost wholly on the x-ray for diagnosis. Nevertheless radiography is entitled to the first place in the diagnosis of the manifold variation of visceroptosis and without it any operation for its relief is made in the dark.

Recently I saw a man of 40 extremely neurotic, constipated for many years, with suffering of indistinct character in the lower left quadrant. His nutrition was excellent. There was no tenderness nor could a tumor mass be felt. Repeated examinations were negative as to occult blood. A half dozen x-ray plates which were taken all showed a V-shaped pendulous transverse colon. Whether the bismuth was introduced from above or below there was one section of the lowest part of the descending colon about two inches long in which the bismuth was never found. It corresponded to the place of which the patient complained. The operation revealed a tight band extending from the outer surface of the gut and nearly shutting off the descending colon from the sigmoid. Its cause could not be elicited. The band was easily lifted on a spatula, divided and excised, whereby the lower segment of the colon was freed. A peritoneal plastic completed the operation. The constipation and the pain have been relieved and with them have gone the general concomitant symptoms.

It is evident that every case of fecal stasis must be studied individually and that the adoption of any routine procedure, except the radial ileo-sigmoidostomy of Lane, must be unsound.

Notwithstanding the brilliant results of its originator, this is an operation to be reserved for extreme cases. The exclusion of the large bowel may have demonstrated that it is an unessential part and that a time may come when total colectomy will be advocated by way of prophylaxis against arteriosclerosis. At any rate Diastaso followed thirty-six of Lane's cases for three or more years, examining the evacuations bacteriologically. The patients remained in good health and gained in weight and activity. But in other cases retroperistalsis forced this operator to excise the colon in whole or in part. Some operators overcome this by draining the colon through a cecostomy, which in my judgment is rather too nasty a wound complication for a condition that in and of itself is rarely dangerous.

Fortunately such radical measures are uncalled for in the common type of ptosis of the transverse colon, the primary case of which is the high attachment of and consequent sharp angulation at the splenic flexure. As Payr has shown it is sometimes possible to bring the splenic flexure to a lower level by dividing the fibrous bands which hold it. When this promises to be difficult the routine operation should be colopexy, by which the arch of the colon can be brought and fixed in relation with the anterior abdominal wall in a plane two inches or more above that of the umbilicus. This operation of Coffey is my routine procedure (in the cases under consideration) to which I add, as the case may demand, reefing of the mesocolon or, where the gut is particularly redundant, a coloplication. To make the operation effective the suspension must be made, as far as possible, on both sides of the median incision. The lesson learned, that peritoneal adhesions are readily stretched and may even disappear when peritoneum is sutured to peritoneum as in ventral fixation of the uterus, has a practical bearing on the fixation of the colon. For this reason I divide the peritoneum of the anterior abdominal wall along the line of proposed fixation and exposed the fascia from within. Into these denuded spaces the omentum is fixed by a continuous suture. This procedure is analogous to that proposed by Nogarth for cirrhosis of the liver. In properly selected cases this operation is safer than an anastomosis operation and serves every purpose, but is not entirely devoid of danger. In one of my cases of cirrhosis death followed the operation on the fifth day from thrombosis of the gastric veins. The signal advantage of colopexy thus performed is that it restores the natural, though always weak shelf-like arrangement of the transverse mesocolon above which the stomach, which is so often prolapsed, is restored to its place. By none of the anastomosis operations is this accomplished. Regarding the latter there have been many variations by which the cecum has been joined to the descending loop of the transverse colon. Hoffmeister, for example, performed this ceco-

transversotomy in twenty-three cases with uniform success. Where the primary angulation is at the splenic flexure if an anastomosis operation is to be done it is preferably made between the sigmoid flexure and the ascending limb of the prolapsed colon.

The more one sees of ptosis of the colon the more evident it becomes that no one operation is applicable to all cases. A careful study of the radiograph and then of the actual conditions as seen through a large incision will determine the operator on the proper method of procedure. Fixation operations of the cecum, of the transverse colon or of the sigmoid, according to the indications, have in my experience sufficed and if performed sufficiently early will, I think, make unnecessary the decidedly more dangerous exclusion operations.

GASTROPTOSIS.

The intensive cultivation now practiced in the field of coloptosis has caused us of late to overlook the prolapsed stomach. Whereas it is true that in most instances the prolapse of the colon entails a sagging of the stomach, the cases are far from rare in which the prolapse of the stomach is either primary or the only malposition present. Nor must it be forgotten that where the combination exists very many of the symptoms are gastric in character and these cannot, in my judgment, be relieved by any operation except the fixation of the colon and incidentally of the stomach. No exclusion operation can effect this. The stomach, of course, has supports that are independent of the colon, although in a normal condition it may be said to rest on the left half of the colonic arch on a shelf formed by the transverse mesocolon supported by the loop of small intestine. Furthermore, the attachment of the pylorus to the diaphragm and of the duodenum to the liver and of the fundus to the spleen and splenic flexure assure the stomach an independent support. I would insist upon the fact that good results were obtained by stomach fixation before operations on the colon became generalized. A few days ago a young woman of 31 reported to me upon whom, five years before, I had performed a gastropexy with gastroplication. Before that she had run the gauntlet of specialists without avail. Postprandial distress, eructations of gas, occasional vomiting, persistent constipation and so on had been complained of for fully eight years. Her weight was very much reduced and her suffering had played havoc with what I was told was naturally a sweet disposition. Marriage and the birth of a child did not mend matters nor make them worse. When she entered the hospital she weighed 96 pounds. An x-ray revealed the fundus of the stomach resting on the iliac pan and extending across the pubic arch to the right side. The upper border of the bismuth shadow was a level line. It looked like the flabby cheese bag of long ago. The picture taken two hours later showed the contents

scarcely changed and fully two-thirds of the ingested milk of bismuth were still in the stomach twelve hours later. The gastric atony was most marked. The stomach held two quarts of fluid comfortably and without revolting. A gastropexy or rather an omentopexy with gastroplication was performed. X-ray pictures taken a week later showed astonishing results. The stomach was in the best vertical position with the pylorus low. Within five minutes of the ingestion of the milk bismuth the motile function was in action. The wall of the stomach fitted to its contents like the skin to the sausage. This woman has continued well, does all her own housework and is unconscious of having either a stomach or nerves. Incidentally her normal weight is between 115 and 120 pounds.

There is hardly a branch in medicine in which radiography is as helpful as in the one under consideration. The old classical anatomical illustrations, so familiar to us all, of the transverse or oblique stomach do not correctly represent the viscus in vivo and at work, nor do the internists fairly show its everyday working capacity when they analyze what it can do with a test meal, a piece of toast, a small piece of steak and a glass of water. A stomach may be able to dispose of this and secrete the conventional two per cent. of hydrochloric acid, and still be totally inadequate to the ordinary demands made on it in the every day mode of eating and drinking. The merit is the radiologist's, who has shown us the wide variations in the position of the stomach in the normal individual and the speed with which it all but shoots its contents through the relaxing pylorus.

Deficiency of gastric secretion, while doubtless important, is less so than motor insufficiency since the ingested food stuffs are subjected to other chemical influences in the small intestine, whereas motor insufficiency cannot be compensated for and must if long continued lead to gastrectasia, the symptoms of which need not be here enumerated. I cannot refrain, however, from alluding to the frequency with which the symptoms of gastric ulcer come in young women in whom a gastroptosis is either overlooked and perhaps not recognized as the initial cause.

There is a tendency among clinicians to divide gastroptoses according to the degree of sagging, the extreme cases being those in which the fundus and even the pylorus may be in the pelvis. Any attempt at classification as a basis for operation is, in my judgment, ill advised, because very many stomachs are markedly prolapsed without disturbing digestion. More important far than the position of the stomach is its tone, as shown by the x-ray and particularly the presence of what is akin to an antral sphincter showing as a constriction some inches from the pylorus. In considering gastroptosis from x-ray findings we are justified in dividing them into two classes. The first in which the stomach retains its vertical position and the pylorus, although prolapsed, still occupies a low point. In

the second class the stomach occupies a transverse or oblique position in which the greater curvature and fundus are greatly depressed, the pylorus remaining on a higher level. It is in this class of cases, even if the prolapse is of moderate degree, that the functional disturbances are very much more pronounced, because of the angulation which occurs at the gastroduodenal junction and because the chyme mass must be lifted uphill.

The relation of gastropptosis to mobile cecum and prolapse of the colon has been made particularly clear by Klose. Quite recently MacLaren called attention to a number of neurasthenic cases in which the appendix had been removed without more than temporary benefit. In a number of them a sagging stomach was found, and great relief was afforded by placing the patient in the recumbent posture after every meal. Internists and orthopedists have also recommended this postural treatment. Gastropexy aims to do this in a definite and permanent manner.

The all important question of the relationship of so-called nervous conditions and of gastric disorders to each other can only here be touched upon. Suffice it to say that the influence of the nervous system on the digestive functions beginning with the salivary secretion and ending at the anal sphincters has been recognized from time immemorial. To make this influence responsible for the chronic inactivities of the stomach and colon is not warranted by this physiologic relationship. On the other hand, the baneful effects of visceral sagging on the nervous system have been removed sufficiently often and permanently by operation to warrant, in my judgment, the assertion that the ptosis is the cause in very many cases of the neurasthenia.

There is a German adage which is applicable to the treatment of visceral ptosis. It is, "where there is no plaintiff there can be no judge." In other words, extreme intestinal sagging accidentally discovered should be let alone, like similar nephropptosis. When, however, it gives rise to functional disturbances, which may appear slight when compared with the manifestations on the part of the nervous system and which make for invalidism after reasonable efforts at conservatism have failed, it is my judgment from experience of some thirty operative cases that operation should be resorted to with at least a fair prospect of permanent relief.

An operation for visceroptosis should not be a haphazard one. Since the stomach and colon often sag together, the one should not be lifted without the other. It is not my purpose to go into technical details, but I may be permitted to say that the median incision should be rather long than otherwise. Particularly when the abdominal wall is greatly relaxed such an incision permits a plastic operation whereby the replaced viscera are held in the upper abdomen, where they normally belong. This repair of the ab-

dominal wall is as important as that of breeches of the pelvic floor. It makes a living abdominal support to take the place of the ingenious mechanical device of the orthopedist. This matter is so important that Rovsing makes a distinction between ptotic women who have borne children and those who have a virginal, strong abdominal wall.

In visceroptosis operations should not be multiplied. It has been the history of many of these cases that one operation after another has had to be performed. Coffey has very well insisted on the necessity of doing all the suspension work necessary at one sitting. The following case is one of the number which I should cite by way of illustration:

P. W., aged 40, was admitted to the Jewish Hospital on the 20th of March, 1910. For many years he had been suffering from abdominal distress, notably after eating. There never was any sharp pain. Only at times were they cutting in character. The nature of the food did not influence them. There was always a sense of bloating with gas eructation. The latter disturbed him very much and at times became uncontrollable. At infrequent intervals he vomits and headaches are of frequent occurrence. Constipation is habitual, no movement occurring without the use of cathartics or enemata. He is frequently unable to follow his business pursuits, has difficulty in breathing at times and suffers from sleeplessness.

Present condition: Anemic, fragile-looking adult; weight 103 pounds. Is prematurely gray. There is a slight subicteric tinge of the skin. Heart and lungs normal. Urinalysis negative; stool examined for blood, examination negative. On pressure, there is some tenderness in the epigastric region. The liver appears somewhat mobile and the dilated gall bladder can be readily mapped out. The stomach analyses, which had frequently been made by a number of specialists, showed an atonic stomach without any evidences of ulceration. The x-rays taken by Dr. Lange showed a gastropptosis with the fundus reaching to near the iliac crest and the pylorus on a higher level opposite about the fourth lumbar vertebra. The axis of the stomach was nearly transverse. The transverse colon was in the pelvis and angulated. The operation in the median line permitted the fixation of the stomach and colon by omentopexy, gastroplication and the drainage of the distended gall bladder. Although it would have been easy to duplicate and shorten the suspensory ligament of the liver, as has been done by a number of German operators, I believed this step unnecessary. This patient made an uneventful recovery.

He weighs 130 pounds, eats whatever pleases him and the stock of cathartics which he had on hand has not been diminished since the operation was performed.

There is no better judge of the nervous and mental state of a man than his wife. In answer

to my inquiry as to his condition his wife said, "You have made a new man of him."

Although gastroplication has, by very high authorities, been condemned I still practice it, and I believe with good advantage. I am convinced that it adds to the rapidity with which after fixation the stomach regains its tone. The distension of any hollow organ for a long time, whether it be the stomach, the heart or the bladder, weakens its musculature. A hyperdistended bladder from obstruction may never regain its tone after the primary cause has been removed. By reducing the size of the stomach, even moderately, its motor function is facilitated and its work actually reduced in proportion to the reduced capacity of the stomach.

The procedures for fixing the stomach vary. The shortening of the gastrohepatic omentum, the operation of Beyea, has never impressed me favorably, since the function of this omentum as a suspensory ligament is negligible except so far as its right and left borders are concerned. It is only fair to state, however, that with many this is the operation of choice, and Beyea two years ago reported on 26 cases, with only two failures. Gastroenterostomy has also been performed for the relief of the dilatation, but has little to recommend it. Indeed, many of the failures of this operation can, I think, be attributed to its having been performed where ulcer was suspected, when the primary condition was a sagging of the stomach. In my judgment, then, the proper procedure for lifting the stomach, and with it in most cases the colon, is omentopexy with the details of technic to which I have already alluded. While I do not believe that the stomach should ever be directly fixed to the abdominal wall, I would consider this paper incomplete without alluding to the very large experience of Rovsing, who three years ago in *Volksman's Sammlungen* and again before the International Surgical Congress reported on over 75 cases with most remarkable results. In a recent conversation with me Rovsing stated that he had performed this operation over 150 times and that he had collected nearly 100 operations by his colleagues in Denmark. His operation consists of passing three sutures through nearly the entire thickness of the wall of the stomach, and passing them through the entire thickness of the abdominal wall.

In conclusion I beg to submit the following theses summarizing my views on the operative treatment of gastroenteroptosis.

(1) Every case of visceral sagging should be studied individually, and should not be treated in a routine way, whether conservatively or by operation.

(2) If after the removal of the normal or nearly normal appendix the patient continues to suffer, he should not be lightly classed among the hopeless neurotics. It is probable that the surgeon has overlooked some visceral displacements or adhesions which are the cause of the suffering.

(3) A small incision in abdominal work of the kind under consideration has signal disadvantages.

(4) The conclusion of the internists based on laboratory findings as, for example, after ingestion of a test meal, cannot be made the basis of the functional capacity of the stomach under everyday conditions.

(5) In many seemingly hopeless cases of gastroenteroptosis with marked neurasthenic symptoms operation promises relief. If this is the result of suggestion it is none the less valuable if the relief is permanent.

(6) While, of course, internal treatment, abdominal supports and postural treatment should be tried, operative interference should not be unnecessarily delayed lest the habitus nervosus becomes too deep-rooted to be eradicated.

(7) No gastropototic patient should be operated on unless some actual functional disturbance can be demonstrated. To relieve this must be the aim of the operation.

(8) Given a visceroptosis in which we can demonstrate distinct functional incompetence or deviations the existence of nervous phenomena does not militate against operation but may be the chief reason for performing it.

MEDICAL ASPECT OF INTESTINAL ADHESION AND PTOSSES.*

BY JAMES MARSH JACKSON, M.D., BOSTON.

In discussing the subject of adhesions, so far as they affect the intestinal tract, I can mention in the short time at my disposal only the most important points as they have presented themselves to me after a long and careful study of the subject both clinically and surgically; and one cannot discuss adhesions without also mentioning ptoses of the colon, for the one rarely occurs without the other.

In regard to the cause of the adhesions, most of my cases have been due to old appendicitis and peritonitis. In many of these cases there was no knowledge on the part of the patient of ever having had peritonitis, and yet at operation it was definitely shown that the original source of trouble was without doubt the appendix. In one case the peritonitis occurred at 13 years of age, but no symptoms of any trouble from adhesions appeared until after 60. This long lapse of time between cause and result is a very important point and has obtained in a considerable number of my cases.

Adhesions may be in the form of a membrane cementing, or rather binding, the coils of intestine together and to other organs or to the abdominal wall, or they may occur as bands, which may in time (possibly many years) cause kinks, as described by Lane, or partial or total obstruction.

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