

The relatively rapid formation of the tumor in the sequence of symptoms suggestive of gall-stones may serve in certain instances to differentiate this condition from malignant neoplasms. The discovery of characteristic calculi in the feces has made clear in a few instances the source of discomforting or severe symptoms without tumor in the region of the pancreas, and exploratory laparotomies have confirmed or suggested the diagnosis of neoplasms of this organ.

The various possibilities of a more accurate study of the symptomatology and diagnosis of diseases of the pancreas suggest an early advance in our knowledge of the subject. With the increase of clinical laboratories in our general hospitals and with the more frequent addition of biological chemists to the force of pathologists, the errors of the past are likely to be avoided and new lines of research are sure to be planned.

SMALL CONTRIBUTIONS TO THE SURGERY OF THE INTESTINAL TRACT.¹

(1) CARDIOSPASM AND ITS TREATMENT. — (2) PEPTIC ULCER OF THE JEJUNUM. — (3) OPERATIVE TREATMENT OF SEVERE FORMS OF INVAGINATION OF THE INTESTINE. — (4) OPERATION ON MALIGNANT GROWTHS OF THE LARGE INTESTINE.

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WHEN your President requested me to address your society on the subject of abdominal surgery I had originally intended to give the address a larger scope, as befitting your society. Unfortunately, I was unable to write up such a subject, owing to numerous demands made upon my time. Suffice it, therefore, to speak on some minor topics of intestinal surgery, and to apologize to you for the trivial character of the communications. Moreover, I cannot refer to the literature on the matter, nor — as I ought to — mention the authorities who have treated these lesions successfully.

(1) ON CARDIOSPASM AND ITS TREATMENT.

The first subject on which I shall speak is the so-called "cardiospasm." You are all well acquainted with a certain affection of the esophagus which consists mainly of a sacculated, or fusiform, dilatation of the organ, most pronounced in the lowest portion of the esophagus. Zenker, who first has accurately described such cases, considered the lesion an idiopathic dilatation of the esophagus. This disease occurs mainly during middle life, but has also been found in old age. It is characterized by a difficulty in swallowing either liquid or solid food, until in the advanced stage of the affection only very small amounts of food can reach the stomach. The cause of this difficulty lies in the fact that the esophagus retains a portion of the ingesta instead of being completely emptied during each act of swallowing, as is normal. In advanced stages this residue amounts to a quarter or even half a liter, and the patient finally dies of inanition.

Since I first began to examine the esophagus with the esophagoscope, I have observed about

twenty cases of this affection — during the last seven years alone I have taken careful notes on fourteen cases. Twenty years ago, when I made the first esophagoscopical examinations, I showed that in all these cases there exists an abnormal occlusion of the cardiac orifice of the stomach which I consider due to a muscular spasm. I have therefore designated and described this affection under the name of "cardiospasm." While under normal conditions during the act of swallowing the cardiac orifice opens automatically, and easily admits the food into the stomach, it remains closed in case of cardiospasm, and this spasm must be overcome by the contraction of the muscular wall of the esophagus. This leads to an excentric hypertrophy of the esophageal wall, and the organ becomes more and more dilated as the free passage of the food is interfered with. Another consequence of this impeded passage of the food is a chronic esophagitis, caused by the decomposition of the contents.

This affection can be definitely diagnosed in the living subject only by means of the esophagoscope: without the esophagoscopical examination the nature of the disease can only be surmised; in many cases carcinoma of the cardiac orifice of the stomach will be suspected. Also Röntgen-rays can be of great value for the diagnosis of this affection. I should like to show you some photographs to prove this (demonstration). The affection which I have described is a primary cardiospasm, if no other lesions are demonstrable. There is, however, a secondary cardiospasm which I have occasionally observed in cases of carcinoma of the cardiac end of the stomach. This secondary cardiospasm is originally entirely different from the secondary dilatation of the esophagus, in consequence of actual esophageal carcinoma.

Two of the fourteen cases of primary cardiospasm were peculiar, in that they were followed by secondary carcinomata. In each case the carcinomatous growth was found in the first thoracic portion of the esophagus, above the dilatation. One case was diagnosed by esophagoscopical examination, the second at the autopsy. I wish to show you an illustration of the esophagus in the latter case.

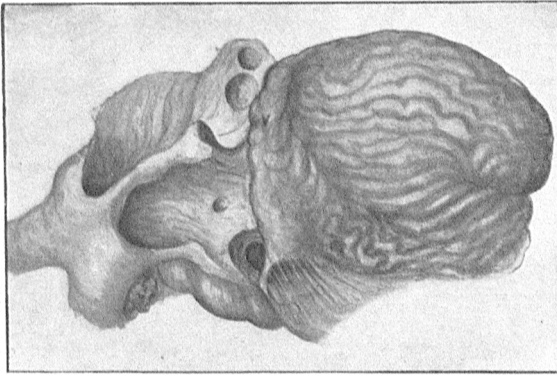
I refrain from discussing the etiology and the pathogenesis of the cardiospasm, because we are only able to surmise at present. I am convinced that we have to deal with an abnormal muscular contraction of the cardiac orifice. In regard to therapy we were until recently able to do very little; regular washings of the esophagus, and removal of the decomposing residue, can relieve only the secondary esophagitis. In severe cases the patients must be fed with the tube; with very little practice the patient learns to pass the tube into the stomach. If this method is unsuccessful, we must resort to a gastric fistula.

I have repeatedly attempted to dilate the contracted cardiac orifice, partly by passing fairly thick bougies, partly by inserting into the cardia a permanent canula supplied with a valve which allows liquids to pass into the stomach but prevents a backward flow.

Neither of these methods has proved particularly successful. I decided, therefore, to resort to heroic measures in the case of a female patient of twenty-

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ULCER OF THE JEJUNUM,—MIRULICZ.



ULCER OF THE JEJUNUM FOLLOWING GASTRO-ENTEROSTOMY
BECAUSE OF CONGENITAL PYLORUS STENOSIS.

three years who was suffering intensely from the affection. The stomach was exposed by laparotomy, and an incision was made into the anterior wall wide enough to allow the entire left hand to pass into the stomach. Under the guidance of my fingers, which I pushed forward toward the cardiac end, I introduced an instrument resembling a glove stretcher into the cardiac orifice; the dilatation was gradually affected to such an extent that the blades of the instrument were about 7 cm. apart. Thus I caused a blunt dilatation of the cardia similar to the dilatation of the sphincter ani in case of anal fissure. Then I closed the wounds in the stomach and in the parietal walls. It was a complete success; a fortnight after the operation the patient partook of solid food. During a period of observation extending over three months the patient was able to swallow every kind of food without any difficulty. She claimed never to have been in as good physical condition; her weight increased, and her general appearance was much improved; and the esophago-scopical examination has shown that the cardiac orifice is no longer tightly contracted, but opens normally during retching and swallowing.

The period of observation in this case is too short to draw a definite conclusion about the value of the operation which I have described to you — I performed the operation about four months ago. Considering the insufficiency of all therapeutic measures for this affection, I do not hesitate, even now, to advise the performance of this operation. Personally I should not again make as large an incision into the wall of the stomach, but should prefer to introduce the dilator through a small gastric fistula; or one might construct an instrument which could be introduced into the cardia through the mouth, and act as a dilator.

(2) ON PEPTIC ULCER OF THE JEJUNUM.

The second subject of which I shall briefly speak is the so-called peptic ulcer of the jejunum, an affection which, as you know, has only recently been observed by surgeons, and only as a sequel to gastro-enterostomy. As far as I can gather from the accounts published by our German colleagues, about fifteen cases of this disease have been met with by Steinthal, Kocher, Heidenhain, Goepel, Kroenlein, Hahn and myself — I have seen five cases of it. I do not know whether more cases of this disease have been observed in America, and I should be very much interested to hear what were the experiences of my American colleagues in the matter. In our experience, peptic ulcer of the jejunum occurs only after gastro-enterostomy performed for benign affections of the stomach, such as gastric ulcer or pyloric stenosis. Moreover, it appears only after anterior gastro-enterostomy according to Woelfer's method — but it does not after v. Hacker's posterior gastro-enterostomy. It develops either during the first weeks after the operation, or it may delay for several months. The general picture of the disease closely resembles that of gastric ulcer; hence most cases were formerly regarded as a recurrence of the original trouble. Pain is a prominent symptom; it is very severe, and is increased by the ingestion of food. The ulcer lies either at the point of junction

between the stomach and the jejunum, that is, at the artificial anastomosis, or it may be situated some centimeters — sometimes 10 cm. — away from the anastomosis. Since the wall of the jejunum is considerably thinner and less resistant than that of the stomach, serious complications are more apt to follow after jejunal ulcer than after gastric ulcer. These complications are: Perforation into the abdominal cavity and death from subsequent peritonitis, or more frequently a gradual perforation through the anterior abdominal wall, usually at the site of the left rectus abdominalis, that is, a penetrating ulcer with inflammatory infiltration of the anterior abdominal wall; we have then the well-known pseudo-tumor, which sometimes occurs with gastric ulcer, and which results from this inflammatory infiltration of the abdominal parietes. If the affection is recognized early, excision of the gut and suture may effect a cure; and this has been done in a few cases. However, there is a strong tendency to recurrence; in one of my own cases resection of the gut was followed by a new ulcer 10 cm. from the site of the first.

In most of these cases of jejunal ulcer there has been a marked hyperacidity of the gastric juice, but there are exceptions; thus Kocher found in one case a diminished amount of hydrochloric acid and even a trace of lactic acid in the gastric juice. In this direction I have made an especially interesting observation in the case of an infant of three months. The patient suffered from congenital stenosis of the pylorus, accompanied by an immense hypertrophy of the pyloric muscle, as is usual in such cases. Two months after the operation there appeared multiple jejunal ulcers, which caused the death of the child through profuse intestinal hemorrhage and peritonitis. I show you here a picture of this last case. Since the stomach during infancy contains only a small amount of hydrochloric acid, and an examination of the contents of the stomach has proved this in my case, hyperacidity of the gastric juice could not be the cause of jejunal ulcer in this patient.

Nevertheless, we are pretty certain about the etiology of peptic ulcer of the jejunum; it can be explained only by the prolonged presence of gastric juice, which reaches the jejunum without having been normally diluted and neutralized by bile and by the pancreatic secretion. On a recent visit to the Johns Hopkins Hospital in Baltimore, I had an opportunity of seeing a preparation which showed the formation of peptic ulcers in the jejunum of a dog after gastro-enterostomy. This occurred during the course of some experiments made by Dr. Stephen Watts, second assistant surgeon at that institution. An anterior or rather a ventral gastro-enterostomy was performed by suture without mechanical appliances. The dog died after three months. At the autopsy two ulcers were found in the jejunum opposite to the opening in the stomach. One of these had perforated, and caused the death of the animal.

This shows the possibility of the formation of such ulcers in animals as well as in man.

All these observations — I believe — are very important in deciding upon the best and safest

method of operating for gastric ulcer or pyloric stenosis. After these observations we are not entitled, in my opinion, to perform anterior gastro-enterostomy any longer—at least, not for benign affections of the stomach. For carcinomatous stenosis of the pylorus it may be considered, being technically the more simple operation. For the benign affections of the stomach we must choose an operation which does not expose the jejunum to the immediate action of the gastric juice, that is, an operation which restores as far as possible normal physiological conditions. The most rational method is the pyloroplasty operation, especially with Finney's modification. If this is not feasible we have to choose between gastro-duodenostomy—which recently has been advocated by Kocher—and v. Hacker's posterior gastro-enterostomy.

(3) ON OPERATIVE TREATMENT OF SEVERE FORMS OF INVAGINATION OF THE INTESTINE.

My third subject concerns the treatment of the severe forms of invagination of the intestine when disinvagination is impossible. In such cases resection of the invaginated portion of the gut offers the only possibility of saving the patient. However, this method, as usually practiced, is extremely dangerous, so that even the operation rarely restores the patient. Especially great is the danger of peritonitis. I have treated two cases in the following manner, which, in my opinion, offers the best chances for the patient's life; and indeed both cases made an uncomplicated recovery. The first case was that of a woman of twenty-seven years, the wife of a Polish merchant, who was admitted to the surgical clinic of Breslau in March, 1902, presenting the symptoms of intussusception. The patient had been sick for five weeks, presenting the characteristic symptoms of invagination, which had increased in severity up to the day of admission. Besides general meteorism, vomiting, and all other signs of intestinal obstruction, there had frequently been bloody stools. Inspection and palpation of the abdomen revealed a painful cylindrical tumor, about as thick as a man's arm, which began at about the middle of the transverse colon and ran toward the left side, corresponding in general to the direction of the descending colon, and went down into the pelvis. Examination of the anal region revealed a dark reddish-brown tumor of about the size of a fist, covered with intestinal mucosa, and protruding from the widely dilated anal orifice. Digital examination showed that this tumor was nothing but the lower end of the intussusceptum, extending into the rectum, and therefore connected with the tumor palpated through the abdominal wall. Further examination showed the prolapsed portion of intestine to be the cecum with the ileo-cecal valve, the lowest portion of which was already partly gangrenous. Thus we had here a case of ileocolic intussusception, the oral end of the large intestine being invaginated into the aboral portion down to the rectum, having dragged with it a portion of the ileum as an intussusceptum.

In view of the prolonged existence and the great extent of the invagination, as well as of the fact

that part of the intussusceptum had become gangrenous, there could be no thought of reduction by manipulation. Resection alone could be considered. However, the ordinary operation of resection seemed too heroic a measure, considering the poor state of the patient (pulse 140). She seemed unable to withstand the risk of a peritoneal affection which is incurred with the ordinary method of intestinal resection. I therefore proceeded in the following manner, which almost completely excluded the danger of a post-operative peritonitis:

An incision 20 cm. long was made along the border of the left rectus abdominis. When the abdominal cavity was opened a small amount of a brownish-red, turbid exudation was found and evacuated; the descending colon, much stretched, congested, and presenting an edematous infiltration, appeared in the opening. It was distended and showed numerous irregular transverse folds resulting from an axial dragging of the mesentery which was invaginated along with the gut. The colon was drawn up into the wound, so as to expose freely a strip of its anterior wall, about 5 to 6 cm. wide. In this position it was stitched to the abdominal wall by a series of sutures through the serous covering, and thus the parietal layer of the peritoneum was united to the visceral layer; this completely excluded the exposed portion of the colon from the peritoneal cavity. In a few places where the sutures did not seem to be quite efficient to connect the two layers owing to the transverse folds of the colon wall, small tampons of iodoform gauze were used to fill any remaining gaps.

The anterior wall of the colon, thus excluded from the peritoneal cavity, was opened by a longitudinal incision about 12 cm. in length. This incision exposed the intussusceptum, which at this point had not undergone any severe disturbances of circulation, but showed in many places ulcerations due to the pressure of the intussusceptions. The intussusceptum thus exposed consisted of two tubes of intestine, one contained within the other, the outer being colon, the inner ileum. These tubes of intestine were in contact with each other on their serous surfaces.

Hence, if the invaginated gut was to be resected at this point, it became necessary to open also the peritoneal sac, which had been dragged into the intussusceptum. In order to avoid all danger of infection in this direction I resected the invaginated gut in exact accordance with the method which I had advised for the resection of simple prolapse of the rectum, that is, the outer and inner layers of the intussusceptum were cut away step by step, and a deep catgut suture was immediately put in to close the peritoneal pocket as soon as it was opened. The site of the operation was, meanwhile, continually flushed with a normal salt solution. Thus the gut was cut and sutured at once along its entire circumference, until the mesenteric attachment was reached. In separating the mesentery we resorted to multiple ligation. Here a small strip of iodoform gauze was inserted in order to drain the mesenteric pocket into the gut. After complete resection we had to extract the resected portion which extended to the rectum. Attempts

to do this from the rectum were unsuccessful, because the intussusceptum was too tightly held by the rectum and the sigmoid flexure. By slow and careful traction we succeeded in removing it through the abdominal wound. The intussusceptum was about 45 cm. long; it consisted of a double tube, the outer being colon, the inner ileum. So the length of the entire excised portion of intestine was about a meter.

The further procedure, as well as the course of the disease, presented nothing remarkable. The main cause for congratulation was the total absence of any peritonitis, so that recovery was uninterrupted. A large artificial anus had been made by the operation, through which all fecal matter was discharged. This artificial anus was closed about eight weeks later. The patient left the clinic cured.

The same method was used with equal success in the case of a second woman of thirty-five years.

(4) ON OPERATION ON MALIGNANT GROWTHS OF THE LARGE INTESTINE.

In regard to the fourth topic I shall be brief, since I can refer to the paper which I read before the Congress of German Surgeons at Berlin a year ago. It deals with the operation for the removal of malignant tumors of the large intestine. Statistics collected until now show that the prevalent method of excision of the tumor and immediate suture of the intestine gives very bad results; the mortality varying between 30 and 50%; and most patients succumbing to peritonitis. The cause of this phenomenon is found, I believe, mainly in the secondary changes which take place in the intestinal walls under the influence of carcinomatous stenosis. The gut is dilated, its nutrition impaired and its muscular wall is insufficient; consequently after the operation we are apt to have complete atony of the intestine,—the contents are arrested at the site of the suture, the suture yields, and peritonitis results. For this reason Bloch as early as 1892 advocated operating in selected cases in two sittings. Allingham and W. Edmunds also have divided the operation in special cases. For a number of years I have, invariably, performed the operation in two sittings, and have found that the results were infinitely better than formerly. Of twenty-four cases operated on, only four died after the operation; but in none of these cases can the method of procedure be held responsible for the fatal termination. One patient died eleven days after the operation of embolism of the lung; another after a week of pneumonia; a third six weeks after the operation of general carcinomatosis, and the fourth within two days of peritonitis, caused by rupture of the carcinomatous gut during the enucleation of the tumor, so that a large amount of infective intestinal contents reached the peritoneal cavity during the operation.

As regards the technique of the two operations performed by myself, I should like to say the following. The primary incision, the enucleation of the tumor, the removal of the lymphatic glands, in short, the entire operation is performed exactly as

when one operation only is done. If now the tumor has been freed and completely enucleated, it is drawn out of the wound, the loop of gut is stitched to the parietal peritoneum with sutures including only the serous coat, and the abdominal wound is closed, leaving only room enough for the loop of the gut. Now only after the abdominal cavity is completely closed, the tumor is excised, and an artificial anus is established which is closed in two to four weeks, according to the usual methods. The disadvantage of this process is that the patient is afflicted for a few weeks with an artificial anus; but I believe that this is fully balanced by the advantage of greater safety.

In closing, I should like to say that in my experience the permanent results after operation for malignant tumor of the large intestine are very favorable, at least more so than is generally supposed. I think we should strongly point out this fact to the physicians who are still very sceptical about this operation. In compiling the joint statistics of my clinic and that of Koerte, I find that among twenty-four cases which were under observation more than four years we have nine cases without any recurrence. Among these nine are several that have been under observation much more than four years. I operated on my first case seventeen years ago, while I still conducted the clinic at Krakow.

THE SURGERY OF THE SIMPLE DISEASES OF THE STOMACH.¹

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MR. PRESIDENT AND FELLOWS: May I be permitted at the outset of my paper to express my most cordial thanks to the fellows of the American Surgical Association for the signal honor which has been conferred upon me in asking me to present a paper to this meeting? There are few incidents so grateful to a surgeon, there can be none more encouraging, than a recognition from those best qualified to judge of the work which he is striving to do. My earnest hope is that my contribution to your proceedings may in some small measure repay you for the great courtesy which you have shown to me today.

I propose to deal in my paper with the surgery of the simple, that is, the non-malignant, diseases of the stomach. The subject, I am well aware, is one that has been debated at previous meetings of this association, but you will, I think, agree that there is still much that has to be learnt, there is still much that may engage us in profitable discussion, and I do not think, therefore, that any apology is needed for this choice of a subject.

The great majority of the simple diseases of the stomach which can be successfully treated by surgical measures are due to ulceration or to its complications and results. These various conditions can be dealt with in the following order: (1) perforation of gastric or duodenal ulcers; (2) hemorrhage from gastric or duodenal ulcers; (3) chronic ulcer, its various clinical types; (4) hour-glass stomach.

¹ Read before the American Surgical Association, May 13, 1903.