If answered in the affirmative, a second question naturally follows: did the sarcoma begin its development soon after the injury? There are certain things about the history to lead us to infer that such was the case; *e. g.*, almost exactly two years after the accident he had a convulsion which left a paralysis of the left arm for some time. What was the cause of this epileptic paroxysm in a patient otherwise in perfect health and free from neurotic tendency? Was it an extradural (sub-cranial) hemorrhage, or was it an irritation due to the presence of the tumor already developing? We can only surmise as to the proper answer. Slowly growing spindle-celled sarcomata have been reported by a number of observers; Warren in his "Surgical Pathology" (page 718) speaking of sarcoma affecting the parietal bone and its periosteum mentions a sarcoma of the dura which persisted from 1846 to 1866 and says: "Other cases of slow growth of these tumors are recorded; one of twenty years, one of fifteen years, and several of four or five years duration." If we take it for granted that this growth began as late as the time of the first convulsion, May, 1887, a period of more than five years elapsed before it caused death.

The query then arises, Why did it not occasion serious trouble earlier in its history? The reply I have already given, in the assertion that the brain often shows a remarkable tolerance to slowly increasing growths, and that only when a tumor reaches a size sufficient to interfere with vision is its existence suspected. This patient knew there was something "wrong in his head," as he expressed it, for some time, but did not regard it as serious until his eyesight failed. He then sought the oculist, who immediately recognized the fearful seriousness of the case, explained that less than two months of life probably remained and advised removal as the only possible escape; unfortunately it was too late.

A description of other cases of brain tumor upon which I have operated will prove interesting in illustration of some of the statements I have made; this will therefore be given in the next lecture.

(To be continued.)

ORIGINAL ARTICLES

GASTRO-ENTEROSTOMY, PERFORATION OF THE STOMACH, PERFORATION OF THE INTESTINE, INTESTINAL OBSTRUCTION, AND SOME OF THE LESSONS THEY TEACH.

A paper read by special invitation before the Shelby County Medical Society, held at Shelbyville, Ind., April 8, 1895.

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It is only a few years since stenosis of the pylorus, intestinal obstruction and gastric and intestinal perforation were considered fatal diseases. For the surgeon to have even suggested operative interference under the circumstances would have only been to have incurred censure on the part of the medical profession as well as the laity.

During the last decade the advancement of surgical knowledge and the improvement of its technique has enabled the surgeon to invade the abdominal cavity, and handle it with comparatively the same

accuracy and confidence that the mechanic controls or repairs a machine.

When invited by your secretary to read a paper on this occasion, I was at a loss to know what subject I should select that would be of interest, saying nothing of benefit to the members of this active and progressive Association and its guests on this occasion.

At first thought it occurred to me that gastro-enterostomy would, perhaps, be of some interest, but on more mature reflection, I took the liberty of modifying my subject so as to cover two classes of conditions occurring in the abdominal cavity, and will, so far as I am able, illustrate what I may say on these subjects by specimens, and at the same time draw a few comparisons.

GASTRO-ENTEROSTOMY.

Gastro-enterostomy is usually performed where stenosis of the pylorus exists, whether of carcinomatous, cicatricial, fibrous or other origin. It is perhaps more frequently performed for cancer of the pylorus and may be of a radical nature or simply of a temporary character. Having determined by the symptoms which are familiar to you all, that obstruction of the pylorus exists, it is not always possible nor is it necessary for the diagnostician to determine absolutely before submitting his patient to an operation, the exact pathologic condition that is producing stenosis. From the fact that you have an obstruction, it is sufficient evidence to warrant an operation. If during the operation it is satisfactorily determined that the blockade is caused by cicatricial bands or by fibrous contraction of a benign character, it is not usually necessary to make an excision. Under these circumstances it is only necessary to "side-track," so to speak, this portion of the intestinal canal, by performing a gastro-enterostomy and thereby establishing a new opening between the stomach and the bowel.

Experimental research has demonstrated that where this can be done, that portion of the bowel which is thereby "retired from active service" becomes atrophied from disuse, and the digestive function of the gastro-intestinal canal is, as a rule, re-established through the new channel.

If we find by operative interference that we have a malignant growth to contend with, and it is possible to remove it, then it is necessary to perform an enterectomy, and remove all the diseased parts, closing up the stomach as well as the intestine under septic precautions, with a view of giving permanent relief.

If the growth is malignant and has involved the adjacent tissues to such an extent as to prohibit its removal, there is nothing left but to perform a gastro-enterostomy and contribute to the patient's comfort and length of days. As an illustration of this latter condition allow me briefly to report the following case:

Mr. F. B. P., age 52, a widower, was admitted to the medical ward of the Protestant Hospital, Columbus, Ohio, Feb. 5, 1894, for carcinoma of the pylorus. He was very much emaciated, could retain but little or no food, although hungry and anxious to eat, but when given any kind of food he retained it only a short time when it was ejected from the stomach and in consequence the patient continued the slow process of starvation. My attention was called to the case by Dr. Adams, who was then in charge of the med-

ical ward; an examination confirmed the diagnosis of obstruction of the pylorus which was probably due to carcinoma. Assisted by Dr. Means, he was operated on March 19, 1894, when we found a large carcinoma, which not only caused complete stenosis of the pylorus, but involved so many of the surrounding tissues that it was impossible to attempt to remove it. We therefore performed gastro-enterostomy, using the Senn bone plates. The patient rallied fairly well after the operation, notwithstanding his emaciated and debilitated condition. His appetite soon returned and for a short time he was able to eat and assimilate the more easily digested liquid foods, such as milk, beef teas and meat broths, to which were added, by degrees, a more substantial diet, which was not only relished but retained and digested. He was discharged the latter part of May, 1894, very much improved. I followed up the case and found that he was admitted to the Soldiers' and Sailors' Home at Sandusky, on May 29.

Through the courtesy of Dr. E. M. Heard, Assistant Surgeon at that institution, I received the following information relative to this case: After describing his general condition, the Doctor stated that he was nauseated after each meal and unable to take anything but liquids on account of nausea and discomfort. A physical examination revealed a cicatrix in the linea alba, extending from the center of which, was a small tumor of brownish color and firm consistency. Percussion revealed dullness over epigastrium, to right and above incision, about the size of an orange. The patient was put upon supportive treatment but gradually succumbed to the malignant disease and died from inanition on July 14, 1894. An autopsy was held eight hours after death, which revealed adhesions binding the intestines together but the abdominal wall was free. Duodenum firmly adhered to mass at pylorus. Upon opening the stomach, found a loop of black silk engaged in mucous membrane near the pylorus, and an opening admitting a lead pencil from the stomach to the intestines, evidently the result of an operation. At the pylorus was found a tumor broken down at a line corresponding with the junction with the stomach.

We will not take up your time going into further details of this case, except to demonstrate the feasibility of a gastro-enterostomy even in advanced malignant disease, which we believe is justifiable, and in a majority of cases will result in giving temporary relief, prolonging life, and also prevent the patient from dying the horrible death of starvation. Last, but not least, it shows what can be done when the peritoneum is protected from septic infection.

PERFORATION OF THE STOMACH.

On Dec. 24, 1894, I was called in the forenoon in counsel with Dr. Adams to see Mrs. J. M. B., age 32, married, no children, whom I found suffering agonizing pain. I inquired of her history and learned that she had suffered from ulceration of the stomach for over ten years; also had been troubled with uterine and ovarian irritation and irregular menstruation. She was in her usual health and attending to her duties about the house until 8 A. M., when she was taken with excruciating pains in right shoulder, left side and over the left ovary; also complained of tenderness along the spine. There was no fever, increase of pulse or bloating of the abdomen at 11 A. M., when seen by the writer in consultation with

the family physician. I was called again at 3 P. M., and found the pulse 120, temperature 104, when operative interference was seriously considered, for perforation of *some part* of the abdominal viscera. The obscure symptoms and reflex irritation, together with the history of her previous attacks of a similar character from which she recovered, caused us to hesitate. Subsequently, Dr. Baldwin was called in counsel, who agreed with us as to the probability of a perforation, but owing to the acute peritonitis, which had rapidly developed in the last few hours, it was decided that it was inadvisable to operate. The patient rapidly sank and died in twenty-six hours from the time she was first taken with the last attack. A post-mortem was held five hours after death, which revealed a violent general peritonitis the result of septic infection due to a large perforation of the stomach.

In order that you may more fully appreciate the condition which led to the perforation, I have brought the specimen with me and will pass it around for the benefit of those interested. You will observe the marked cicatricial contraction which has taken place about four inches above the pylorus and which has no doubt existed for years, but owing to the low vitality which we always find in cicatricial tissues, necrosis had taken place resulting in perforation and the escape of the contents of the stomach into the abdominal cavity. The practicability of operating on a case of this kind is quite uncertain as you will readily observe by examining the specimen.

You will note there is practically a large and small stomach, which are separated by cicatricial bands, through which the perforation has occurred. It would be quite impracticable to make an excision of this cicatricial portion, unite the lesser with the larger part of the stomach and expect the operation to be successful; and at the same time to attempt to close the opening by a plastic operation, we would have the low vitality which is always present in cicatricial tissue to contend with, which would surely be followed by necrosis and by another perforation.

The only operation which to my mind would present a reasonable chance of recovery in a case of this kind would be to excise the cicatricial band, together with the small portion of the stomach, and then after closing the stomach perform a gastro-enterostomy, and even this would be a difficult and hazardous operation, especially so when the abdominal cavity was so thoroughly infected with the contents of the stomach. It has been my experience that general peritonitis due to perforation is usually fatal in a very short time, no matter what you do.

In this connection I recall a case, which I attended while living in Mansfield, of a young man who had been complaining for several weeks of some stomach difficulty for which he had been treating with a homeopath, who had diagnosed it as indigestion. The young man had been at work all day plowing corn, ate a hearty supper, and a few hours afterward complained of a severe pain in the region of the umbilicus. I was sent for about midnight, found him in collapse with every evidence of general peritonitis; hands and feet cold, thready pulse, rapid respiration, etc. I diagnosed a perforation of the stomach with an unfavorable prognosis.

I did not think it wise to attempt an operation, although it was recognized only a few hours from the

time the perforation had taken place, owing to the escape of the septic material into the peritoneal cavity, and the violent peritonitis which had already set up. The young man died in less than twelve hours from the occurrence of the perforation. A post-mortem revealed a perforation of the stomach in the region of the large curvature, sufficiently large to allow me to pass my thumb through it, while the abdominal cavity was filled up with meat, potatoes, corn and other material which he had eaten for his supper.

PERFORATION OF THE INTESTINE.

Only a few days ago, March 30, I was called in counsel with Dr. Emerick to see Mr. P., aged 23, a sawyer who gave the following brief history: about 5 o'clock P.M., March 29, while working on a rip-saw he was struck with a board some three feet in length, seven inches in width and an inch in thickness which was hurled from the saw very violently, the end of the board striking him in the right iliac fossa. Notwithstanding there was not a mark to be discovered on the abdomen, yet there was all the symptoms of a perforation of the intestine accompanied with the usual prostration and collapse. He was admitted to the Protestant Hospital on March 30, and operated on that afternoon. Assisted by Dr. Means I opened the abdominal cavity and found it filled with fecal matter and enormous quantities of plastic exudation, the result of the most violent septic peritonitis, which had adhered the large and small intestines in one general mass.

An opening was found in the ileum about eight inches above the ileo-cecal valve and was sufficiently large to pass the thumb through with ease. The abdominal cavity was thoroughly washed out with sterilized water. The opening was closed with the Lembert suture, a drainage tube inserted and the abdominal opening closed with interrupted sutures. It is scarcely necessary for me to state that this case died in fifty-three hours after the injury and thirty hours after the operation.

We gave it as our opinion, before the operation as well as after it, that the prognosis was exceedingly grave, yet, at the same time I feel that it is the surgeon's duty, even in these extreme cases, to give the patient the last chance for escape from death. In this case we had some peculiar conditions to which I will now call attention:

There was not a mark of any kind to be seen on the skin. A small rupture could be felt through the abdominal muscle, but the parietal peritoneum was not torn, yet at the same time, the intestinal peritoneum together with the walls of the intestine sustained a large lacerated wound. I have seen several cases of this kind occurring in a similar manner, in which no external violence could be observed, yet the stroke was so severe as to cause a perforation of the intestine, and operation or post-mortem, as the case may have been, revealed a severe lacerated wound of the intestine.

INTESTINAL OBSTRUCTION.

Intestinal obstruction occurs quite frequently and is always a perplexing problem for the general practitioner. He, as a rule, is loth to advise a patient to be operated on, and especially so until he has tried all the remedies at his command from a medical standpoint, to relieve the obstruction. We must all admit that the diagnosis of intestinal obstruction is

quite difficult to make, even to the expert, in its early stages; how much more so must it be to the general practitioner who sees only a few cases in a lifetime. At the same time, I think we must all admit that where intestinal obstruction *does* exist, and where heroic efforts have been made to relieve the obstruction by severe and repeated catharsis and rectal injections, they, as a rule, contribute to the danger of the case by increasing the intestinal peristalsis and peritoneal congestion. At the same time, so long as there is no septic infection of the peritoneal cavity it will withstand a great amount of torture without fatal results.

I recall a case of this kind in which I was called in counsel by Dr. Adams, the attending physician, and found a lady aged 51 who had been suffering for several weeks with pain in the region of the gall bladder, but during the last few days prior to my visit, had every evidence of intestinal obstruction. The attending physician and I agreed in the diagnosis. She was admitted to the Protestant Hospital late on the evening of December 16, was gotten ready for an operation and was operated on the morning of the 17th. On opening the abdominal cavity we found the small intestine injected and dilated to fully double its natural size, while the ascending, transverse and descending colon was contracted until it was not larger than the normal ileum.

This condition of the intestine was a ready guide to the point of obstruction, and in a few moments I found the blockade, which at this time was complete and existed at the ileo-cecal valve. On examination of the cause of obstruction, I found a mass in the small bowel that was movable through the lumen of the intestine, which was filled with liquid matter. After having slipped the lump up to a point about a foot above the ileo-cecal valve, I then prepared to open the intestine and remove it. Dr. Baldwin who was assisting me, very kindly separated, as completely as possible the contents of the intestine from the mass and held the bowel firmly between his fingers on either side of it, at the same time holding the intestine outside of the abdomen to avoid infection.

An incision was made in the ileum large enough to allow the escape of the mass which, when removed, was nearly the size of a guinea egg. The bowel was thoroughly cleansed, the incision closed with the Lembert suture and the abdominal incision closed and dressed in the ordinary manner. The patient made a rapid and uninterrupted recovery and was discharged from the hospital just seventeen days from the time she was admitted. On examining the mass (which has now become very much shriveled from desiccation) it was found to be made up of gall stones, fecal matter and apple parings, which in some manner had become cemented together into a firm ball, assuming the appearance of an enterolith and plugging up the ileo-cecal valve, and which would have caused her death had it not been removed. At this writing I am informed by Dr. Adams, she is enjoying her usual health and is attending to the duties of her household.

We do not propose to go into a general discussion of obstruction of the bowel, but we have another case which we wish to report, with a view of drawing some practical, clinical conclusions from this class of cases:

On the morning of April 3, 1895, I was called in.

counsel by Dr. Beery who reported to me that he had a case of intestinal obstruction, which was admitted to the Protestant Hospital about 8 o'clock the same morning. The patient M. B., age 17, a tinner by occupation, reported that he had been troubled for some three years with constipation which at times was very troublesome, and during all this time he had been compelled to take some laxative in order to obtain a movement of the bowels.

On Sunday morning, March 31, he felt some colicky pains which grew worse, but his attending physician was not called until the next morning. The usual remedies were resorted to for the relief of the obstruction but without avail. An examination satisfied the attending physician, as well myself, that we had an obstruction to contend with and consequently an operation was advised. With the assistance of Dr. Baldwin, the young man was operated on between 9 and 10 o'clock A.M. on April 3. On entering the abdominal cavity, we found the lower portion of the ileum corresponding with a horizontal line across the umbilicus, collapsed and empty, while that portion above the horizontal line was distended. On further examination a firm band about a fourth of an inch wide was found, which extended from the descending colon across the abdomen to the ascending colon on a line with the umbilicus. There were neither parietal nor intestinal adhesions, except at each end of this band. The end extending to the descending colon was firmly adherent to it, while the other end was firmly fastened to a narrow piece of omentum which in turn adhered to the ascending colon. At the juncture of the band with the strip of omentum was found a tumor, which I have the pleasure of presenting to you, about the size of the end of your thumb and which was entirely free from adhesions and had the appearance of an organized hematoma. It was pedunculated and hung down from the band like a plum from a twig. This band was ligated at each end and removed with the tumor. The abdomen was closed and dressed in the usual manner, and the patient is making a rapid and uninterrupted recovery without an abnormal change of temperature or pulse.

Our diagnosis as to the character of the tumor was subsequently confirmed by Dr. Fraker, the pathologist of the hospital.

There are some remarkable features in this case, which have evidently been the result of a hematoma of the omentum setting up a localized inflammation, followed with cell proliferation, building a band in this peculiar manner across the entire abdominal cavity which for years partially obstructed the peristaltic action of the bowels, allowing only the liquid contents to pass, but finally became so firm as to cause a complete obstruction which would undoubtedly have been followed with death had not operative interference been instituted.

CONCLUSIONS.

In studying these cases from a clinical standpoint we find that they divide themselves into two general divisions:

1. Those in which we are warranted in giving a favorable prognosis.
2. Those in which we may expect an unfavorable prognosis.

In the first case, notwithstanding we had a carcinoma of the pylorus and performed a gastro-enter-

ostomy in an aged party, who was almost devitalized from starvation, yet the result of the operation was favorable, because we were enabled to avoid septic infection. In the fourth case we had an obstruction of the intestine, which was occluded by a fecal mass, causing severe enteritis with enormous distension of the bowel, yet by removing the mechanical obstruction aseptically, the patient made an uninterrupted recovery. In the fifth case we had a mechanical obstruction of a different type caused by a band, which was also operated on aseptically with the most favorable results.

In the second class, consisting of perforations, we have in the two cases reported, two perforations of the stomach, both of which died from acute, violent, septic peritonitis within a few hours after its occurrence. In the third case we had a perforation of the bowel, producing the same general results as those produced by the perforation of the stomach, each one setting up an intense septic peritonitis which resulted in death in a few hours, notwithstanding an operation was performed in the third case for its relief.

A study of these cases, leads us to the legitimate conclusion that we are justified in giving a favorable prognosis where there is an obstruction without septic infection but, on the other hand, where there is *perforation* and *septic infection* we are not justified in giving a favorable prognosis; on the contrary, we should look upon such cases with fear and trembling.

In conclusion, allow me to repeat that I believe it is the duty of a surgeon, even in the face of the grave conditions which usually arise in perforation of the stomach or intestine, to operate and to seek to make the operation at the earliest possible moment after the accident. Without an operation we have nothing to hope for. With an operation there is a possible chance of saving a human life.

150 East Broad Street.

TUMORS OF THE EYEBALL.

(EXHIBITION OF SPECIMENS).

Read at the meeting of the Tri-State Medical Society, St. Louis, April 4, 1895.

BY WILLIAM H. WILDER, M.D.

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The study of tumors of the eye is of the greatest importance to the general practitioner, as well as to the specialist, for the reason that not only is the special sense endangered, but the life of the patient frequently depends upon the early recognition and prompt treatment of a neoplasm of this part. Our time will not allow a consideration of the tumors affecting the lids, lacrymal glands and other adnexa of the eye, but it is the purpose of this paper to discuss briefly the most frequent growths that attack the eyeball.

Tumors affecting the cornea primarily are, from the nature of this structure, exceedingly rare. Usually they spring from the edge of it where the conjunctiva passes over into the epithelial layer of the cornea. Of the benign growths may be mentioned dermoid, which is usually situated at the limbus, involving both conjunctiva and cornea. Rarely it is seen on the cornea alone, as was the case with the small microscopic specimen shown here. It appears as a grayish, or yellowish-white, rounded mass varying in size from half a grain of wheat to that of a hazel nut or even larger. It is usually single but it