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ORIGINAL ARTICLES.

INTESTINAL OBSTRUCTION IN ITS SURGICAL ASPECT.

*Read in the Section on Surgery at the Thirty-ninth Annual Meeting
of the American Medical Association, Cincinnati, Ohio,
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In the study of "intestinal obstruction," we shall endeavor to confine ourselves, as far as possible, to the consideration of two general conditions.

1. Pseudo-obstruction.
2. Veracious obstruction.

By pseudo-obstruction of the intestinal tract, we mean a paralytic condition, presenting the symptoms of a real obstruction without any such obstruction existing, either ante-mortem or post-mortem.

By veracious obstruction, we mean a literal obstruction of the intestinal canal capable of verification, either ante-mortem or post-mortem.

To prove that these two general conditions do exist, both *ante-mortem* and *post-mortem*, will be the aim of the author, in this paper, by the collection of a few cases, and so far as possible demonstrating the above propositions by actual specimens.

PSEUDO-OBSTRUCTION.

In November, 1883, I was called to see Mr. M., a strong, muscular, contractor, who had reached about middle age, but had always been, and was at the time he was taken sick, an unusually robust, active fellow. After arriving at his bedside, I learned that three days previous, he was taken suddenly ill with a "severe pain in the right side" as they called it, but which in reality, was in the iliac fossa. I also learned that he had had a physician who diagnosed some "liver trouble."

When I reached him, which was only two or three hours prior to his death, I found him complaining of excruciating pain in the right iliac fossa. Extremities were cold; abdomen very much distended, and tender over the whole lower and right side; stercoraceous vomiting and extreme constipation; bowels had not moved at all

subsequent to his illness, notwithstanding repeated efforts with drugs and by enemata.

A careful examination failed to discover any localized enlargement, which, had it existed, would have been difficult of detection, owing to the great distention of the abdomen, and the pain and tenderness.

I did not feel clear in my diagnosis, but ventured to tell the friends that in my opinion the whole difficulty was located at some point in the intestinal tract, near the right iliac fossa, but owing to his rapidly increasing collapse (at the time of my first and only visit), all efforts at relief were certainly useless.

A post-mortem examination was made eight hours after death, in the presence of a number of physicians, of Mansfield, O., which revealed an acute typhlitis with perforation, peritonitis, and death. I also found a very high degree of acute congestion of both lungs, which were almost one mass of blood.

There was no real obstruction of any kind in the intestinal tract, the lumen of the entire bowel being free from one end to the other, notwithstanding he had had all the ordinary symptoms of acute obstruction, followed with perforation and peritonitis of a violent type.

In April, 1885, I was called in counsel on a case, which I reported to this Association at its thirty-seventh annual meeting, under the title of "Some of the Complications of Strangulated Hernia," which aids us in demonstrating the fact that we do occasionally have pseudo-obstruction, with all the symptoms of true obstruction of the intestinal tract. With your forbearance I will briefly mention this interesting case in that connection.

The case occurred in a young man of 30 years, with a vigorous constitution, and a fully developed muscular system, who had not only had a hydrocele, but also a complete inguinal hernia on the right side; the former I tapped, and the latter was reduced with little or no difficulty. I found, however, that the symptoms of intestinal obstruction continued, with all the horrors of stercoraceous vomiting and complete constipation, which after repeated consultations, led to the opinion that some form of intestinal obstruction existed, and must be relieved by surgical interference, or death would surely result.

My friend, Dr. J. W. Craig, who had been called in council on the case, performed the laparotomy, assisted by myself, his son, Drs. J. H. Craig and George P. Sattler, which revealed the fact that the "ascending colon had been dragged down farther than usual, until the lower end of the vermiform appendix had escaped through the femoral ring and became strangulated at a point where it passed Gimbernat's ligament. When released it was found to be swollen to the size of a man's thumb, and very much discolored."

No obstruction whatever was found to exist in the intestinal tract proper, notwithstanding the persistent vomiting of fecal matter for four days prior to the operation, and our inability to get a motion from the bowels by either copious enemata or legitimate medication.

The intestines were cleansed with a 1 to 3,000 bichloride solution and returned, and the abdominal wound closed; the patient recovering without a single bad symptom, and has been well as usual ever since, the author having seen him only a few weeks ago. In April, 1887, I was called in council with Dr. Jeffries, of Greenwich, Ohio, in the case of a vigorous young man of 17 years, who was suddenly taken ill about four days before with vomiting and a severe pain in the stomach, with no history of a chill. The attending physician, Dr. Jeffries, reported a pulse of 70, not associated with any fever; patient was given a dose of oil, without any results; said he complained of severe pain in the ileo-cæcal region, with tenderness on pressure, which extended more or less over the entire abdomen; could not lie on his left side; persistent constipation, notwithstanding he was given copious injections of warm water; pulse becoming weak and thready, and pain increasing with abdominal distention. The diagnosis of typhilitis was made, and owing to the alarming symptoms Dr. Sykes and son, of Plymouth, were sent for, who, after examination, confirmed the above diagnosis.

On the afternoon of the fourth day of his illness, the author was sent for, arriving there in the evening, and found the patient vomiting fecal matter, and in a state of apparent collapse, with all the symptoms of acute intestinal obstruction, with perforation, and peritonitis. After receiving the above brief history, and making a careful physical examination, I formed the opinion that he had an obstruction in the region of the ileo-cæcal valve, and suggested the advisability of an operation for his relief, had the case been seen in time; but that owing to his collapsed condition, I did not think an attempt at surgical relief advisable at the present time, as I thought he could not certainly survive over a few hours at most.

To our surprise, however, he lived through the the night, and the following morning had rallied considerably; pulse was stronger and extremities

warmer. He begged piteously for an operation, as did his friends, saying that he couldn't *more* than die, and if it gave him the only chance for recovery, he wanted that chance even if he should die in the attempt.

With no small degree of hesitancy, I prepared for the operation, which I feared would be not only useless under the circumstances, but in all probability fatal. Dr. Jeffries gave him the anæsthetic which he took with little or no trouble. The abdomen was carefully cleansed with a 1:3,000 solution of the bichloride of mercury.

An incision was made in the median line, midway between the umbilicus and the pubes, carefully directing up with a grooved director the various layers until we reached the peritoneum.

During this period I observed the pulse at times becoming irregular, and the breathing spasmodic, notwithstanding he had been given stimulants and digitalis by hypodermic injections prior to the operation; yet I determined to go on, as I was still firmly of the belief that what I had commenced as an operation would end as a post-mortem. No sooner had I opened the peritoneum, than he collapsed, a few gasps, a slight tremor of the pulse, and the post-mortem was at hand.

Having already arranged for that with his friends, I proceeded at once with the autopsy, which revealed extensive peritonitis with immense exudations of lymph, which had glued the bowels together almost their entire length, and at the same time, pasted them firmly to the peritoneum. A diligent search and careful examination failed to discover the least obstruction to the intestinal tract, the lumen of the bowel being free and open from one end to the other.

In the vermiform appendix, however, was found a calculus about the size of a hazel-nut, in which was a nucleus which I am inclined to believe is a small gall-stone, around which the calcareous laminæ have gathered until the concretion became so large, and produced so much irritation as to ulcerate through the appendix, and allow extravasation into the peritoneal cavity with all its fatal results.

You will observe by examining the specimen, which I shall pass around, that there is a distinct nucleus, and from the laminated character of the calculus we are inclined to the opinion that it was of slow formation. By examining the vermiform appendix and the lower end of the cæcum, which I will also pass around for examination, you will observe the appendix is enlarged to more than ten times its normal size. The bulged appearance just below the end of the cæcum is where I found the calculus imbedded, while a little lower down, you will observe the small opening into the peritoneal cavity. The cæcum, ileo-cæcal valve, colon, and small intestines, were all normal with the exception of the inflammatory products above referred to.

REMARKS.—In each of the above cases we had all the ordinary symptoms of intestinal obstruction, such as a sudden attack with localized pain, constipation with a desire to go to stool, which was followed with no results; stercoraceous vomiting, tympanitis, and in the two cases which were not relieved by surgical interference, collapse, and death, and yet in not a single case was there any real obstruction existing in the intestinal tract proper.

Morris, in Vol. V of the "International Encyclopædia of Surgery," page 993, refers to a few cases of foreign bodies in the appendix vermiformis, and speaks of the symptoms "simulating hernia" and "being suggestive of intestinal obstruction," which, to a certain extent, confirms the proposition we have taken, that we do have pseudo-intestinal obstruction, or, rather we have affections of the vermiform appendix, giving rise to a series of symptoms so clearly allied to those of true obstruction of the intestines, that it is with great difficulty, if at all, we are able to diagnose during life, without an exploratory incision into the abdominal cavity, between the true and false obstruction occurring along the intestinal tract.

In this class of cases we undoubtedly have a localized paralysis of the muscular walls of the intestine arresting the peristaltic action of the bowel, and thus forming "a block" as it were, to the free movement of its contents, which for the time being, acts as an obstruction even in cases in which the intestine is only partially filled with faecal matter, the walls of which lose their elasticity and collapse, and thus we can account for the stercoraceous vomiting occurring in these cases, as well as the extreme constipation.

The difficulty of diagnosing between these cases, and those of complete veracious obstruction is at once apparent. In both there are localized pain and tenderness; in both, stercoraceous vomiting; in both, extreme constipation; in both you may have peritonitis with collapse and death.

In pseudo-obstruction, however, we usually find the symptoms of inflammation preceding those of obstruction, while in veracious obstruction you usually have the symptoms of obstruction preceding those of inflammation.

In pseudo obstruction, we usually find localized pain without any distinct tumor, whilst in veracious obstruction, we usually find a distinct tumor in addition to the localized pain.

If the intestine is inflated by hydrogen gas as devised by Prof. Senn,¹ of Milwaukee, in the pseudo form of obstruction, there will be no difficulty in obtaining a free passage through the entire bowel, and obtain the gas from the stomach by means of a stomach tube; whilst in complete

veracious obstruction this will not only be impossible, but the intestine will be found to inflate to the point of obstruction and no farther. If, on the other hand, we have pseudo-obstruction, the result of a peritonitis from perforation, this most admirable method of gaseous inflation, devised by Prof. Senn, will at once enable us to diagnose this fact.

By the use of the hydrogen gas *per rectum*, it will be found that by puncturing the abdominal walls with an exploring trocar, being exceedingly careful not to puncture the bowel, that if there is a perforation of the bowel, the gas will escape through the trocar, and be easily ignited, which would not be the case if there is no perforation.¹

VERACIOUS OBSTRUCTION.

The frequency of true obstruction of the intestinal tract, and the dangers it subjects its victims to, are of such grave importance as to demand of the surgeon the most careful study of this vitally important question. That these obstructions, of whatever class, are of a mechanical nature is without question, and that they can be relieved by proper surgical assistance in a large majority of cases if taken in time, is also just as true.

It is to be lamented that we still have physicians of unquestioned skill who advocate the old opium and purgative plan of expectant treatment of these obstructions, and discourage the use of the knife except as the last resort, when the patient is exhausted by days of excruciating pain, or on the verge of fatal collapse from purulent peritonitis, or dying from the shock and inflammation incident to a perforation of the bowel, and then they condemn operative interference as useless and barbarous because it fails to save the life of one who is practically moribund before the surgeon is allowed to operate. It is true they have a case now and then when there is complete intestinal obstruction in which nature has stepped in and did the surgery for them and saved their patient.

In this connection I desire to report a case that not only shows what nature *will* do, but which at the same time demonstrates the principles we shall advocate for the prompt repair of intestinal obstruction, with possibly a few modifications on nature's original plan.

About the middle of May, 1886, the author was called in council with Dr. George P. Sattler, of Pavia, Ohio, in the case of Mrs. H., who had been suffering from intestinal obstruction for six days prior to my visit. From the Doctor and the family I learned that on the night of the 12th of May she was seized with "pain in the epigastric and umbilical regions," which was of a paroxysmal character, which steadily increased in severity, and was soon followed with vomiting, without any motion of the bowels.

The patient informed me she had been engaged the day before putting up an ash-leach, and had

¹The particulars as to this method of diagnosis have been kindly given me by Prof. Senn, of Milwaukee, who will furnish this Association all the details of his method of diagnosis in perforation of the bowel in a paper already prepared for this Section.

been lifting bucketfuls of ashes nearly as high as her head, but felt no inconvenience from it, excepting when she was in the act of lifting one bucketfull she felt a little pain in her side, as she expressed it, and supposed she had wrenched herself, but paid no further attention to it and went on with her work.

Dr. Sattler informed me that "there was at no time any localized tenderness, pain, or swelling," but that on the fourth day "general peritonitis" had set in, which "was accompanied by stercoraceous vomiting and occlusion of the bowels," which he located "somewhere in the lower half of the ileum."

After a careful examination of the case I advised an operation; although at my visit I found so much tenderness and tympanites that I could not locate the point of obstruction, yet I felt morally certain it existed, and considered an operation the right thing to do. There being some hesitancy on the part of the friends, as well as the Doctor, as to an operation, we left with the understanding that they would make another effort at moving the bowels and if that failed they would consider the advisability of an operation.

After diligent efforts at removing the obstruction for three days more without success, they called Dr. J. W. Craig, of Mansfield, O., to see her in consultation with the family physician, who advised making "another effort to overcome the obstruction by medication, and if that did not have the desired effect to operate within twenty-four hours."

A few hours later, however, some fecal matter was passed, *per rectum*, "during a violent fit of vomiting," and "from that time forward her condition gradually improved." "On the 20th day of her illness, while in the act of defecation, she passed a section of the ileum about 6 or 8 inches in length," which "when first seen was still telescoped."

I am indebted to Dr. Sattler for this specimen, which I have the pleasure of showing you to-day, as well as the general history and report of this interesting case. You will observe that a portion of the mesentery was passed with the intestine, which is attached to the latter in numerous places by bands of adhesions, while the ends of the intestine are oblique and present a ragged and tattered appearance.

The patient gradually improved and is still living, but never regained her usual degree of health.

In June, of the same year, Dr. Sattler had a similar case of intestinal obstruction in a male, aged 65 years, who, after twenty days of intense suffering with stercoraceous vomiting and constipation, was relieved by passing a portion of the bowel, which came away in shreds, one of which the Doctor procured and has kindly given me for exhibition at this meeting, but which has become so contracted from being in alcohol, which finally

evaporated and allowed the specimen to dry up in the manner you see it at present.

In these two cases of veracious obstruction of the intestinal tract we have an example of what nature will occasionally do when not relieved by art, and at the same time we have a practical demonstration of the principles of Prof. Senn's method of uniting the ends of an intestine by the rubber-ring method.

In these cases the intussusceptum undoubtedly acted the part of the rubber ring to the intussusciens by becoming swollen, and in this way holding the two serous surfaces together until union took place, when the lower portion of the intussusceptum became gangrenous and sloughed off and was passed just as the rubber ring is—*per rectum*.

It is true there should be a liberal degree of conservatism practiced in all these cases before laparotomy is resorted to, and all possible complications carefully studied and their importance duly considered. I was forcibly impressed with this idea of conservatism a few days ago while assisting in a post-mortem examination on an old man who had died of carcinoma of the liver, which during his lifetime had had marked symptoms of obstruction of the bowel.

His attending physician, Dr. J. S. Stewart, of Ontario, O., informed me he had diagnosticated obstruction located on the right side at the juncture of the ascending and transverse colon, some months prior to his death which he was inclined to think came from impaction of the feces, and which, after a few days, was relieved, although he frequently complained of pain in that region.

The post-mortem examination revealed a cancerous liver, which had become so enlarged as to reach almost to the iliac fossa on the right side, and more than half way to the iliac fossa on the left side, pushing before it the transverse colon, producing an U-shaped condition of the colon, with an acute angle on the right side and a sub-acute angle on the left side. On the right side that portion of the transverse colon which was pushed down parallel to the ascending colon was completely adherent to the latter for about 8 inches, making in all 16 inches. It was at the acute angle where the temporary obstruction was lodged, no doubt producing the inflammation and adhesion found at the autopsy.

I recognize in this case, which at the time of the obstruction was not suspected of having a cancerous liver, a mechanical condition producing obstruction in which little benefit could occur from operative interference, as it would have required the switching off of at least 16 to 18 inches of the colon by Prof. Senn's decalcified bone plate operation, which in a patient of over 70 years of age, with more or less of a devitalized condition, would have certainly proved fatal, saying nothing of the enlargement of the liver.

On the other hand I have a specimen I obtained at a post-mortem examination I held on Mr. E. P., age 72 years, in which I was assisted by Dr. J. Harvey Craig, of Mansfield, O., which you will observe is an old, irreducible inguinal hernia, in which the sac has become enormously thickened and attached in many places to the loop of intestine, which is so constructed at the neck of the sac as to have materially impaired the circulation of the contents of the intestine, which at different times threatened obstruction, but which happily passed off without any serious results.

Here is a case in which the ordinary operation for the radical cure of hernia would have been attended with great danger if it had not proved a complete failure altogether, owing to the numerous adhesions; yet it would have been a suitable case for the Senn decalcified bone-plate operation, and thus have sidetracked the loop of intestine contained in the hernial sac, and allowed it to have undergone physiological atrophy. Permit me to say, that the subject from which this specimen was taken died from a disease in no way connected with this old hernia.

CONCLUSIONS.

From a study of these few cases that have come under my personal observation, in their relation to intestinal obstruction, I have come to the following conclusions:

A.—1. That we do have pseudo-obstruction of the intestinal tract in which all the symptoms of true intestinal obstruction exist, without any real obstruction being present.

2. That all these cases will result fatally if not relieved.

3. That surgical interference is not only the rational, but the safest and surest means of relief.

B.—1. That in veracious obstruction of the intestinal tract we may have spontaneous recovery in rare instances, attended with painful, prolonged, and dangerous illness.

2. That there are occasionally circumstances occurring where there is mechanical obstruction with certain complications in which operative interference would be useless, and not only hazard the life of the patient, but undoubtedly shorten his days.

3. That there are mechanical obstructions of the intestinal tract that cannot be relieved except by surgical interference.

The author would recommend an operation at the earliest possible moment after the diagnosis of intestinal obstruction is made, in the firm belief that delays are not only dangerous, but hazardous, in the majority of cases.

As to the methods of operation, I would recommend the rubber ring, modification of Jobart's method, devised by Prof Senn, of Milwaukee, as the safest where it is necessary to make a resection or excision of a portion of the intestinal tract.

And where an excision is not necessary (and under certain conditions where excision is necessary) the decalcified bone-plate method as devised by Prof. Senn, is advised, by which a portion of the intestine can be "switched off," as it were, by opening a new channel between the upper and lower portion of the bowel and thus allow the "sidetracked" portion of the intestine to atrophy from disuse, while the contents of the bowel proceeds on its way through the artificial opening.

In purulent peritonitis, with pseudo-obstruction of the bowel, the opening and washing out of the abdominal cavity is unquestionably the proper thing to do, while in the same condition from veracious obstruction it is imperative in connection with the removal of the obstruction proper.

In all operations in the abdominal cavity we would recommend the strictest antiseptic precautions, which combined with the earliest operative interference possible in cases of intestinal obstruction, and the improved methods of operating, as devised by Prof. Senn, we are of the firm conviction that the mortality in this class of cases can be very decidedly diminished.

May 3, 1888.

THE NERVOUS RECTUM.

Read in the Section on Obstetrics and Gynecology at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May 8, 1888.

BY WILLIAM GOODELL, A.M., M.D.,

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Hysteria is closely allied to insanity, and as the latter frequently manifests itself by a single delusion, while the mind remains clear on all other subjects; so hysteria often exhibits itself chiefly by some localized disorder. It then explodes externally and billets itself on certain muscles or on certain sets of muscles, forming, as it were, a sort of muscular insanity. The mind is sane, the organic body is sound, the individual, as a whole, is above reproach, and yet these muscles will behave as if they were bereft of reason. Few muscles are exempt from the attacks of hysteria, and thus are formed hysterical paresis and anæsthesia, hysterical aches and jerks, and those hysterical grimaces of expression or of locomotion with which all of us are familiar.

The muscles most liable to become hysterical are, perhaps, the circular ones, viz., the sphincters of outlets or inlets, and while the insanity, so to speak, is more localized, the sufferings are perhaps greater. Thus by a lack of nerve coördination in single muscles of this kind come irritable bladder, painful coition, asthma or dyspnoea, loss of voice, vomiting or regurgitation of food, difficulty in swallowing, dysmenorrhœa and palpitations of the heart. Much might be said on all these subjects, for the field is a wide one; but I