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REMARKS UPON THE TREATMENT OF STRICTURE OF THE SIGMOID FLEXURE AND OF THE FIRST PORTION OF THE RECTUM.

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Mr. President and Fellows: My object in offering a few remarks upon stricture of the sigmoid flexure and of the first portion of the rectum this evening is to obtain the views of the Fellows present upon this, which is certainly a very important, subject, and to place upon record a case of stricture of the terminal portion of the sigmoid flexure and of the first portion of the rectum, recently under my care, in which the passage of a flexible rubber bougie (Wales) but one size, French scale, larger than that which had been passed many times before, caused perforation of the rectum below the stricture, resulting in the death of the patient within twenty-four hours thereafter from peritonitis. In order to discuss this subject to the best advantage I may be permitted to refer to one or two points in the anatomy of the first portion of the rectum, also to say a word or two concerning the diagnosis of stricture situated beyond the reach of the finger.

The rectum does not, as is usually described, begin at the brim of the pelvis opposite the sacro-iliac synchondrosis, whence it extends to about the centre of the third piece of the sacrum and descends in front of the sacrum, the coccyx, etc., but commences at the terminal part of the omega loop, to which attention has been called by Treves as being the shape of the sigmoid flexure, and not "S" shaped in answer to the description in the text-books on anatomy. Careful examination by myself of many bodies has confirmed the above statement. All of the omega loop, which includes the first portion of the rectum, occupies the pelvis in the adult. It will thus be understood that the first portion of the rectum makes with the second portion a decided angle; therefore, an instrument of the calibre of the normal bowel, unless it be a flexible one which will pass through the third and the second portions, will not prove anything regarding the calibre of the first portion. Again, from the relation borne between the second and

the first portions of the rectum much may be learned about the latter if it be infiltrated, upon introducing the finger into the second portion, through the walls of which the infiltration may be detected. The best form of flexible rubber bougie is one which is hollow, as is the Wales instrument, to the lower end of which can be attached a fountain or Davidson syringe, and water thrown through this, favoring its passage by drawing out of the way the folds of the mucous membrane which would otherwise form an obstruction to its introduction.

The diagnosis of stricture of the second and third portions of the rectum is readily made by the sense of touch. When the index finger is not long enough to reach beyond the second portion with the patient lying on the back, it may be done with ease if the patient be turned upon the left side and the thighs slightly flexed upon the abdomen and the finger introduced into the anus from behind, as the tissues of the perineum can be carried a little distance in advance of the web of the index and middle finger. Contraction in this part of the bowel can often be diagnosed by the introduction of a short, flexible Wales bougie, but the finger is the more trustworthy instrument. This, too, is the only portion of the bowel where we will all admit that the operation of proctotomy for the relief of a contraction is admissible. The soft, flexible rubber bougie is the only instrument that can be carried safely as well as surely through the upper portion of the rectum and the sigmoid flexure. The use of the non-flexible rectal bougie is not only an unsafe instrument, particularly where the stricture is situated beyond the second portion of the rectum, but one which may mislead the surgeon in making a diagnosis of stricture when it does not exist.

The first portion of the rectum, like the sigmoid flexure, is connected to the back part of the abdominal cavity by a reflection of the peritoneum, the meso-rectum. On account of the bend made by the junction of the first and second portions of the rectum it can be readily seen how the point of a non-flexible bougie is arrested by contact with the wall of the bowel at this point, which offers resistance to its further passage, and a diagnosis of a pathological obstruction made; or it may be that the bowel, owing to the meso-rectum, if preternaturally long, will be carried in advance of the point of the instrument to or beyond the median line in the neighborhood of the pubis, while if the instrument by chance should pass into the sigmoid flexure, the latter, owing to the meso-sigmoid, may be carried to or beyond the median line in the neighborhood of the umbilicus—which, in either event, might give rise to the belief that the bougie had passed into the bowel beyond, if not through, a supposed stricture.

There is a question of doubt in the minds of some as to the

possibility of being able to carry a flexible rubber tube or bougie through and beyond the sigmoid flexure. This has been tried upon the dead body in a number of instances, and, not having proven successful, the deduction has therefore been made that it is impossible to do it in the living subject. While I am aware of the difficulty attendant upon the introduction of an instrument into the descending colon in the dead body, due chiefly to the absence of muscular contractility which facilitates the passage of the instrument, on the one hand, and offers a very decided barrier against its introduction, on the other, also to the absence of the normal moisture in the shape of the mucus, I cannot admit this to be so.

We well know that it is much easier to introduce a bougie through the normal urethra in the living subject than it is in the cadaver, and yet this ought to be more readily accomplished in the case of the urethra, where counter-pressure can be brought to bear to aid in the introduction of the instrument, than in the case of the bowel. I have very satisfactorily demonstrated upon many occasions the possibility of being able to circuit the sigmoid flexure with a soft, flexible tube such as the long flexible rectal bougie and the long flexible colon tube. In certain cases of intestinal obstruction I regard the passage of a soft, flexible tube into the sigmoid flexure, through which water can be thrown and the capacity of the large bowel ascertained, an important aid in the diagnosis between obstruction of the small and obstruction of the large intestine.

With the subjective symptoms of stricture of the large bowel present, namely, constipation, or may be attacks of diarrhœa, the passage of ribbon-shaped stools or of choppy stools covered with mucus and blood, or preceded or followed by the passage of mucus and blood attended by tenesmus, the lower portion of the rectum being intact, as proven by a digital examination, it does not absolutely follow that a stricture is the cause in all instances, as we may see this train of symptoms consequent upon a subacute or chronic catarrhal inflammation of the colon, of the sigmoid alone, or in ulceration of the sigmoid flexure; therefore, before we can get more definitely at the exact condition of affairs it will be necessary to resort to instrumental interference in the introduction of graduated sizes of flexible rubber bougies, when a diagnosis can generally be arrived at with a very fair degree of certainty. This should be done with all due care, and preferably by one experienced in the use of these instruments, as it has been demonstrated, particularly in the case I report to-night, that serious results can accrue from even the passage of a soft instrument, which argues strongly against the use of non- or semi-flexible instruments. From the relation the first portion of the rectum holds to the second, when the former is the seat of extensive thickening or the walls contain

a growth, upon digital examination this can usually be detected. In this class of cases, as in disease of the second and third portions, if in the female, much can be learned by careful digital examination of the vagina. I have on several occasions been able to feel with the finger masses in the first portion of the rectum, as well as the presence of a growth which had assumed some size in the terminal portion of the sigmoid, by carrying the vault of the vagina well in advance of the examining finger, aided, too, by counter-pressure made over the abdominal walls. Further, I believe these examinations are better made without ether, having thus the feelings of the patient to guide us and incurring less risk of injuring the bowel.

Where a mass is suspected in connection with symptoms of stricture, which would suggest malignant disease, there is considerable to be gained, however, by giving the patient ether, under the influence of which the abdomen can be palpated more satisfactorily. Another means of diagnosis, that of dilating the sphincter of the anus and the introduction of the hand into the rectum and the sigmoid, I have never had the courage to use. In cases of great doubt, rather than resort to the last procedure, I deem it more advisable to do an exploratory abdominal section. Exploratory abdominal section, however, done for the purpose of diagnosis in the questionable cases of stricture of the sigmoid and the first portion of the rectum, I am not a strong advocate of, as I think that a diagnosis in the majority of cases should be made without resorting to so complicated a measure. While I am aware of the little risk attending an exploratory abdominal section under strict cleanliness, I think the principal objection to be urged against it is that it lessens the responsibility of the surgeon as a diagnostician. Apart from this, I fear the modern tendency is too much in the direction of exploratory incisions in other regions of the body, as well as the abdominal cavity, for diagnostic purposes.

The operation should be the natural sequence to the diagnosis and not the diagnosis to the operation. Perfecting one's self in diagnostic attainments is certainly more creditable to a surgeon than to feel forced to have to open the belly cavity to determine that which may be done without.

The majority of cases of benign stricture involving the first portion of the rectum are amenable to treatment by either the bougie or colotomy. Stricture of the sigmoid flexure, very rare except when of malignant origin, is not nearly so favorable for gradual dilatation by the bougie. In stricture here located, be it benign or malignant, if the inflammatory process has not advanced too far to permit of resection and anastomosis, or perhaps circular enterorrhaphy, the most that can be hoped for in the majority of instances is the establishment of an artificial anus in the loin.

The choice between iliac and lumbar colotomy must depend

upon the merits of each case; ordinarily I prefer to make the operation through the loin. The only advantage I can see in the anterior (iliac) operation is the opportunity it affords to determine definitely the condition of the bowel, if a resection and anastomosis or enterorrhaphy is possible, and, if nothing short of an artificial anus will suffice, to make it at once.

In a paper I read before the Philadelphia County Medical Society two years ago upon "Lumbar *versus* Iliac Colotomy," I took the ground that the lumbar operation was the preferable one, inasmuch as the diagnosis of the condition rendering the operation of colotomy necessary should, in the majority of the cases, be made without having to open the peritoneal cavity as is done in the iliac operation.

In benign stricture of the sigmoid flexure and of the first portion of the rectum, I recommend gradual dilatation by means of the flexible rubber bougie. When this is not possible, more radical measures must be adopted. In malignant stricture of the above portions of the bowel the bougie can do nothing other than harm; directly, by hastening the diseased process, and indirectly, by misleading the patient in having him believe that an operation will not be required. I believe the earlier radical operative interference in malignant disease of the bowel is instituted the better, and that if this practice was followed in all instances, patients' lives would certainly be very materially prolonged, and in some cases, the disease perhaps be eradicated by removing it while yet local. What holds good in the uterus and elsewhere regarding affections of this character, holds equally good in case of the bowel, the difficulty being that in affections of the latter organ, not exposed to the sense of sight, the diagnosis cannot be made with the same degree of certainty as in like conditions of the uterus, the breast, etc.

The advisability of furnishing the patient with a bougie and instructing him to pass it himself I am inclined to question; I think this is better done by the surgeon. In addition to instrumental and operative treatment, much is to be gained by constitutional treatment, particularly if the case be of specific origin; but unless the history clearly points to this we should be careful not to push the treatment too far for fear of the debilitating effects; by attention to the general health, by the administration of tonics, by advising the proper diet, by giving tonic laxatives to have the bowels moved daily.

In cases where tenesmus is excited by the presence of a collection of mucus it is advisable to introduce a long flexible rubber tube beyond the stricture, through which the bowel can be irrigated with warm water or with mild antiseptic astringents.

The following is the case I have referred to above: F. W. R.,

aged about thirty, consulted me July 27th, stating that he had a stricture of the large bowel, for which he was passing at intervals of from four to five days Nos. 9 and 11 Wales bougies by the advice of his physician. Upon being questioned, he described the symptoms characteristic of stricture of the sigmoid flexure or of the latter and the first portion of the rectum. He further stated that without the aid of medicine taken internally or the use of enemas it was impossible for him to have a passage. Digital examination of the rectum revealed nothing other than a rather capacious organ. Examination with the bougie showed the presence of an unquestionable obstruction nine inches within the anus. I advised continuance of the local treatment, but disapproved of his using the bougie himself. I passed a bougie up to the time of his last visit to me, when, upon introducing one a size larger than the one usually used, namely, No. 12—which I had also passed before with but little difficulty—as the point of the instrument was engaging in the stricture he suddenly lurched forward upon the operating chair, and before I could withdraw the instrument he rebounded, as it were, upon the point of the bougie. This was immediately followed by severe abdominal pain. I feared the bowel had been penetrated on the anal side of the stricture, but was not certain, as the instrument was withdrawn clear of blood; neither was there any blood passed after its withdrawal. I advised that he go to the hospital, where he would have the benefit of absolute rest and at the same time give me the opportunity of having him closely observed. Contrary to my advice he went to his place of business, but came back to my office some time afterward, complaining of the pain being as severe as when he left me earlier in the morning. He now consented to go to the hospital. The pain was so severe as to require large doses of morphine to relieve him. He would not consent to an abdominal section, therefore I was powerless to do other than administer anodynes, counter-irritants, etc. He died the following night. The abdominal walls remained perfectly rigid, with the absence of tympany until four hours before he died, when there was pronounced distention. An autopsy made shortly after death showed the presence of a purulent peritonitis and a linear stricture involving the terminal portion of the sigmoid flexure and the first portion of the rectum. The bowel immediately below the stricture, which was very much dilated, with the wall nearly as thin as tissue paper, showed a perforation. Upon opening the bowel there were present cicatrices which were evidently the result of ulceration. There were present old adhesions in the abdominal cavity in the neighborhood of the descending colon and sigmoid flexure. Upon opening the chest there were present adhesions at the apices of the lungs. No further evidence of organic disease.

A few hours before his death, in a conversation with his mother, I learned, much to my surprise, that he had for some time back been giving himself an enema after each meal; this, to some extent at least, evidently accounted for the very much dilated and thin condition of the wall of the bowel, rendering it susceptible to penetration by the bougie.