

Fecal fistulae following laparotomy [sic] : or, some accidents which have attended the progress of gynecology during the past ten years / by A. Palmer Dudley.

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FECAL FISTULÆ FOLLOWING LAPARATOMY;

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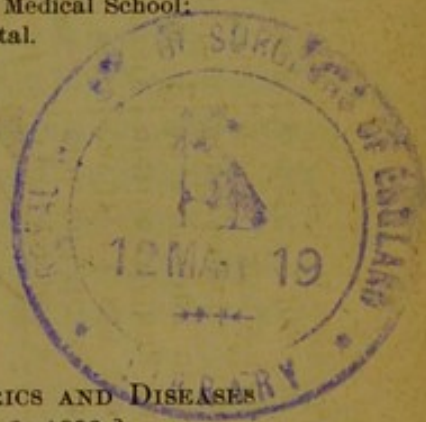
OR,

SOME ACCIDENTS WHICH HAVE ATTENDED
THE PROGRESS OF GYNECOLOGY DURING
THE PAST TEN YEARS.

BY

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1892.

THE HISTORY OF THE
REPUBLIC OF THE UNITED STATES

FROM THE
FUNDAMENTALS OF
THE CONSTITUTION

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MR. PRESIDENT AND GENTLEMEN, *Fellows of the New York State Medical Association*:

When asked by your committee to read a paper upon some gynecological subject at this the eighth annual meeting of our Association, it was with the utmost reluctance that I accepted the task, feeling that the honor could have been better bestowed upon some more experienced and worthy member—one who could entertain the Society with fact, fancy, and anecdote gleaned from a field of personal observation, and not, as I should be obliged to do, attempt to interest you with the old-fashioned, prosaic summing-up of what other men had done to advance the science of our specialty during the past decade, and of which you are all probably well aware.

The saying has often been repeated that in no branch of our profession has more advancement been made of late years than in that devoted to the treatment of diseases peculiar to women. It may also be truthfully said, about no branch has more been written. The enthusiastic statistic-hunter has raked over the musty works of ancient times, and, were it possible, would have long since supplied a statistical average with which to bridge the dark ages and bring an unbroken chain of evidence, from the ancient to the modern times, to show the steady advance in the science and art of

¹ Address upon Gynecology before the New York State Medical Association, October 30th, 1891.

gynecology and the gradually diminishing death rate at the hands of him who is learned in that art. At the same time the conservative writer has been equally zealous in his efforts to show, by a long chain of evidence finely drawn out, that he who wields the knife in gynecology is little short of a murderer. Each has worked his good and each has found his level in the profession. It is not my purpose to tire you with a repetition of either side of the story, but to call your attention to some of the accidents that have attended their progress during the past ten years; it is only necessary for my purpose to go back so far.

At that time displacements of the uterus were being treated with pessaries; the knowledge of peri-uterine diseases was very imperfect, and they were being treated mainly by local applications per vaginam; uterine fibromata had only occasionally received the mysterious influence of electricity; procidentia had not been relieved by utilizing the normal supports of the uterus from within the abdominal cavity; the primary laparotomy for extra-uterine pregnancy was not even in embryo; improvements in Cesarean work were dormant, and, in fact, intra-abdominal gynecological surgery was yet in its infancy. During this time intravaginal work has been but little improved. The master and teacher, Dr. Emmet, has brought the work to such a state of perfection that little is left to be done. Sims, our country's favorite, laid the foundation of modern gynecology and built well during his time; but, with all that emanated from his brilliant mind and also that of McDowell, another shining light in our profession while he lived, it remained for a foreigner to point out the pathway over which progress in the treatment of diseases of women would be made in the future. It is not every one that believes in prophecy, but time proves all things, and no truer prophecy was ever made than that by our honored Fellow, Dr. T. G. Thomas, in his address upon gynecology at the first meeting of this Association, eight years ago, when he fearlessly predicted that an enlightened and conservative surgery would be the pivot around which would revolve the gynecology of the future.

Let us see how this prediction has been fulfilled. What is the evidence? Have the changes that have taken place in our

methods of treatment been due to the discovery of a panacea, to be given t. i. d. in some palatable menstruum, accompanied by the usual directions for vaginal douches, etc., and for which the credit should be placed at the door of him who has labored so earnestly, under the title of conservatism, to cover up his lack of mechanical ingenuity and ignorance of anatomical relations and surgical skill, while he belittled everything that tended towards advancement in the direction of a better knowledge of the pathological conditions within the pelvis which could not be ascertained by vaginal touch; or have they followed in the wake of him who fearlessly sought the seat of disease, which, if beyond the reach of his bimanual touch, was not beyond the reach of the knife?

Upon which side of the question lies the bulk of evidence? Surely with the enlightened surgeon, and, as a result, pessaries for displacements have given way to the various methods of fixation of the uterus by utilizing its own supports; cellulitis is no longer the stumbling block of the physician; electricity for extra-uterine pregnancy has been superseded by the primary laparotomy for its removal, and the long-continued vaginal applications for vague forms of disease behind and beside the uterus are now no longer the pinnacle of hope upon which the woman hangs her future prospects of health and happiness. By the aid of the knife, in the hands of earnest and skilful men, many of these doubts have been cleared and a correct diagnosis of the different forms of intrapelvic disease placed upon record for the benefit of suffering humanity and to aid those who shall enter the profession in the future.

Let me ask, has this great advance been secured without some loss? I think not; but when the profit and loss to suffering humanity as a result of work in gynecology during the past ten years shall have been properly and honestly summed up, it will readily be seen that the balance rests far on the side of profit, and the death rate attending such work will (as it has in the past) continue to diminish as our ability to make a correct diagnosis and our skill in operative manipulation shall increase with time and experience.

Thus far I have dwelt upon the two extremes—success and failure—to cure by improved methods in surgery, and indulged a belief that failures were due largely to errors in

diagnosis and unskilful surgery. I do not mean to say that all failures should be attributed to these sources alone, for accidents will many times attend the most careful work, and failure be the outcome of what would otherwise have been a complete success. It is to such results, following operation, that I particularly wish to call your attention, but the time allotted to this paper will only allow me to place upon record some experience with one form of accident.

For a number of years I have carefully watched the published records of cases of laparatomy, and occasionally I would find that, although an operation was recorded as a success, it would be noted that fecal fistula followed the operation. My experience with such cases leads me to believe that, could those patients have told their own stories, the successes would have been recorded as dismal failures and many of them would have acknowledged themselves to be in a worse condition than before the operation was performed.

These accidents can be avoided if proper care is exercised, at the time of operation, in breaking up peri-uterine adhesions and freeing the diseased appendages for removal, and the accident is such a distressing one to the patient that every precaution should be taken to avoid its occurrence. I have had it occur twice in my practice, in one hundred consecutive laparatomies. A third case, and the last, came to me from another surgeon. It contained so much of interest, and, with my assistance, terminated so disastrously, that I determined to report it in full, and at the same time collect and report as many cases of a similar nature as possible. I acknowledge I have succeeded far beyond my expectations. A thorough search of the medical journals reveals the fact that but very few cases have been reported where secondary laparatomy for cure of the fistula has been resorted to.

The following report of an unsuccessful effort to cure a fecal fistula following laparatomy, by secondary operation after medication had failed, will serve as an introduction to this chapter of accidents which I desire to record.

Mrs. R., age 43, married twenty-three years, had never been pregnant. Her general health had been good and menstrual history normal, except that her flow had been scanty rather than profuse. Her illness dated back two years and a

half, and commenced with pain in the abdomen, which came on suddenly and at irregular intervals, lasting sometimes only a minute, then relaxing and coming on again at an interval of from one to fifteen minutes. These attacks lasted twenty-four hours, more or less, then she would have immunity from pain for perhaps a week or month.

For two months previous to entering the California Woman's Hospital (from whence this portion of the history was obtained) the pain had been exceedingly severe, and especially marked in the right inguinal region. After a paroxysm of such pain a loud, gurgling sound could be heard. She had never, to her knowledge, had a discharge of pus from the rectum, but had passed blood in considerable quantity at stool. She had lost much in weight and suffered from frequent chills, followed by elevation of temperature occasionally reaching 103° F. The history of her case differed so materially from the general run of pelvic cases, and the difficulty of making a correct diagnosis by digital touch was so great, that exploratory laparotomy was decided upon, and on May 13th, 1890, Dr. McMonagle, surgeon-in-chief to the hospital, made the abdominal section. The uterus and its appendages were found to be in a normal condition. A large mass was found in the right inguinal region, which proved upon examination to be the appendix vermiformis and folds of cecum massed together by inflammatory exudation. The adhesions were with great difficulty separated, and inside of this mass was found about a teaspoonful of pus. In breaking up the adhesions a hole was made in the intestine, which was closed with catgut. The opening in the cecum which was caused by the removal of the appendix was also closed with catgut, and the abdominal cavity washed out with boiled water and closed with silk. She made an uninterrupted recovery from this operation; the abdominal wound healed by first intention, but one month later an inflamed condition of the wound was noticed, and she complained of great pain in that region. An incision was made in the line of the former one, and considerable pus and fecal matter escaped. This wound was washed out three times daily and packed with iodoform gauze for a period of two months. It closed to a very great extent, but continued from time to time during the following year

to discharge fecal matter. The patient had in the meantime grown fleshy and enjoyed considerable comfort.

All methods of treatment by irrigation and medication had failed to insure closure of the fistula. She came East and placed herself under my care in February last. At that time the fistula was discharging freely of fecal matter—in fact, almost the entire contents of the bowel were discharged through the fistula, the external opening of the latter being at the upper angle of the scar, just beneath the navel. A probe entering the fistula passed three and a half inches into the abdominal cavity and took a direction towards the lower portion of the cecum. Having such a history before me as I have just read, I labored under the impression that, the stump of the amputated appendix having been sewed up with catgut, the latter had absorbed before good union had taken place and the fistula had made its way from that point. The history contained no evidence that would lead to any other conclusion. All efforts to close it by medication having failed, when appealed to for relief by another operation I readily consented to try. Two good consultants, Drs. Lee and Hanks, kindly saw the case with me and coincided with my opinion.

On March 11th, 1891, I attempted the work, assisted by Drs. Goffe and Offenbach. An incision was made by the side of the old scar; the intestines were found to be somewhat adherent to the peritoneum; the track to the intestinal opening was about the size of one's little finger and formed by the abdominal peritoneum on one side and by the mesentery on the other. Great difficulty was experienced in bringing the cecum into view, owing to the thickness of the abdominal walls and adhesions about the intestines in the neighborhood of the fistula. After much difficulty the intestine was exposed, and it was found that, instead of a fistula existing where the appendix had been amputated, the appendix was still intact and normal in size, but up the anterior side of the cecum, at its junction with the ileum, there were five openings, each as large as a lead pencil, and all discharging into the one canal that opened through the skin. It at once became evident that a mistake in diagnosis had been made at the first operation, as well as by myself before making the second.

The fistulæ were in close apposition to each other, all within the diameter of an inch and a half, and two of them opening directly into the ileo-cecal valve. You can readily see that the location of these fistulæ was a most disadvantageous one. The infiltration and inflammatory exudation about the parts had thickened the coats of both the large and small intestines to such an extent that the calibre of the canal was much diminished, but to just what extent I could not tell at the time. Beyond the parts involved both the small and large intestines had become much dilated and thinned.

I acknowledge I was in a quandary as to what I should do or how I should handle the case. The mesentery was an inch thick with fat, making the operation of exsection a most difficult and dangerous one, setting aside the fact that to exsect and unite the small intestine to the cecum, with any prospect of securing perfect union, would have been next to impossible. I abandoned the idea. The effort was then made to bring the small and large intestines together and make anastomosis above the fistulæ, at the same time covering the latter in by uniting broad surfaces of the intestines. This method was found to be impractical, as it would allow of pocketing of fecal matter in the dependent portion of the cecum. As a last resort I determined to close each opening with fine silk and then cover the openings with the peritoneum of the mesentery. This was done, and at the time looked sufficiently strong to hold until union had taken place. The only drawback to this method of treating the case was the small calibre of the canal through which the fecal contents must make their way. The fistulous track was removed and the peritoneum brought together.

The patient rallied well and appeared to progress favorably till thirty-four hours after the operation. During this time small doses of saline cathartics had been given to keep the contents of the bowel in a liquid state. Thirty-five hours after the operation the bowels moved well, with much relief to the patient. Two hours later a second movement occurred; with it the patient experienced a sharp pain in the right inguinal region, and cried out that something had given way. She suffered a profound shock and sank rapidly, dying in two hours. I felt sure that accident had occurred with the

second stool, and a half-hour after death I reopened the abdominal cavity and found my suspicions confirmed—the larger of the five openings had given way and the contents of the bowel had escaped into the general peritoneal cavity. I removed the diseased portion of intestine, and the pathological condition which it presents is certainly an interesting one. It will be seen that the disease was not within the appendix, but far above it and in such a locality that any form of surgical relief was most difficult to obtain. In fact, I should not have attempted the operation, and I presume this remark can be borne out by the experience of many of those present; but my experience with such cases, coupled with the misleading history which I had received of the first operation, put me in a position to be unprepared to find such a condition and unequal to the emergency. However, the performance of laparotomy upon woman for intra-abdominal and pelvic disease has now become such an ordinary, every-day surgical procedure that the writer who cannot periodically report his series of successful cases frequently feels it incumbent upon himself to apologize for his lack of experience. But the mere report of a successful result, meaning that the patient did not die, does not tell the tale of many of them, or half the woes which the patient would have escaped had she not been the heroine in the drama. Human nature, after all, is frail, and it is not every man that wants to publish his failures to the world, and the misery that sometimes follows his handiwork within the peritoneum is never known; but many times I feel that more is learned, in our profession, from the careful analysis and publication of cases in which we fail than by a long series of successes.

At the meeting of the American Gynecological Society in Boston, three years ago, Dr. Coe read a valuable paper upon accidents following laparotomy. One of my objects at the present time will be to add another to the list, record some personal experience with the accident, and place before this Society, for consideration, a series of cases that I have gleaned from the practice of other men engaged in abdominal surgery. That fecal fistula following laparotomy is by no means an infrequent accident will be shown by the number of cases I have collected in a short period of time. I am well aware

that the history of many of them will be imperfect in detail, but, by a careful consideration of each, I hope to be able to point out some of the causes of the accident. That the accident (for such I shall term it), when it does occur, is a serious one no one can dispute; and if the history of these cases points to the fact that fistulæ followed most frequently on those cases where there were extensive adhesions, then the old saying that "an ounce of prevention is worth a pound of cure" is one well worth remembering while working within the abdominal cavity.

Some Methods of Prevention.—In cases of disease of the appendages complicated by extensive adhesions, I consider it unwise for any operator to work against time, or calmly attempt to show an attentive audience how rapidly he can complete such an operation. I think many times the mistake is made of attempting to work in the pelvis through too small an abdominal incision. If we have a case complicated by extensive adhesions, we should without delay make an incision sufficiently large to readily admit of visual inspection of the pelvic contents. We are then able to locate the adhesions readily, and many times escape the dangers of injury to the intestines which, by blind manipulation with our fingers, we could not prevent. Frequently in our experience we meet with cases where the adhesions are so strong that they cannot be broken up or released except by the aid of instruments. Under such circumstances it becomes an easy matter to do injury to the peritoneal covering of the gut while carelessly dragging upon adhesions attached to it, and have the injury escape notice until it makes itself manifest by leakage and fistula, which, in the majority of these cases (forty-one of the seventy-four), it did in about one week after the operation.

When closing the abdominal cavity, if drainage must be used, the greatest care should be taken to employ that form which will answer the purpose with the least inconvenience or injury to the patient. From my own personal experience I am satisfied that the use of iodoform or bichloride gauze as a means of drainage from within the abdominal cavity, serves a better purpose and is less dangerous than the glass tube, owing to the fact that the latter, if subjected to pressure from

above, is liable to produce sloughing of the bowel when resting against it within the pelvis.

It would appear, from the records of the cases I have collected, that in the vast majority (sixty out of seventy-four) the prime cause of the accident was extensive adhesions in the pelvis, in the breaking up of which some injury was done to the coats of the intestine, and the injury had been overlooked at the time of the operation. It is a well-known fact that injury to the intestine, unless very extensive, if properly repaired at once will usually heal without resulting fistula. I am well aware that some of the older operators yet adhere to the idea that it is best to work in the pelvis through as small an incision as possible and with the utmost speed—deeming both to be great factors in preventing shock to the patient. My own experience has taught me the contrary, while it has demonstrated to my satisfaction how easy it is to injure the coats of the intestines in blindly breaking up firm adhesions within the pelvis.

Following direct injury, I consider the next most frequent cause of fistula to be the indiscreet or improper use of the drainage tube, for I claim that many times it is used when there is not the slightest indication for it. I cannot claim it as the cause in my own cases, for I have only used the drainage tube twice in my laparatomy work, and in both the patient died before fecal fistula could develop. Of the seventy-four cases reported, in only thirteen was the drainage tube not used, and in twenty-six of the cases the accident was attributed directly to the use of the tube by the operator, while no answer was given to the question in thirty of the cases. In only eighteen was the claim made that the tube did not influence the formation of the fistula.

A third cause, which I deem an element of danger to be well considered and guarded against, is the use of catgut in intestinal surgery. I have long since learned better than to trust an injury of the intestine to catgut suture, and believe we should never use the latter in such work. To insure perfect coaptation of the coats of the intestine until perfect union had been secured would require the use of catgut much too large to be used in such tissue, while the influences peculiar

to the intestines themselves, acting upon catgut, in my judgment make it a very unsafe form of suture for such work.

Of the various forms of pelvic disease for which laparotomy was resorted to, and in which fistula afterwards developed, diseases for which Tait's operation was performed head the list, numbering thirty-three of the seventy-four, while tubercular peritonitis and parovarian cyst occupy second and third place in point of occurrence.

One of the most difficult questions to answer, by those who so kindly favored me with reports of their cases, was the one relative to the exact location of the fistula through the bowel. A positive answer could not be vouchsafed for twenty of the cases. In thirty it was thought to be the sigmoid flexure of the colon or rectum; in seventeen, through the small intestine; two through the ascending and one through the descending colon. It is to be regretted that so little positive information could be obtained concerning this point, for upon our ability to correctly locate the seat of injury to the gut must largely depend our methods of treatment for its relief and our prognosis of future immunity from trouble.

Methods of Treatment.—The hardest part of my task approaches when I attempt to formulate any concise method of treatment, either medical or surgical, for the cure of fecal fistula following abdominal section. I have already expressed the opinion that for this form of accident the treatment should be eminently a preventive one, and, unless the case be one of pyo-salpinx, or some sort of suppurating disease within the pelvis in which the injury to the bowel has already taken place, in ninety-nine cases out of a hundred this accident can be prevented by exercising the care and attention to detail, when making the primary laparotomy, which I have drawn attention to. My chief object in choosing this subject for my paper was the hope that, in collecting cases, I should be able to gather from the combined methods of treatment adopted in the cases reported some form of treatment which, if properly carried out, would secure a good result in all cases. But when I find that only thirty-nine of the seventy-four cases reported yielded to any form of medical treatment, and that in those cases which resulted in cure the operator did not report the successful method employed, I am thrown upon

my own resources and my own experience for the methods of treatment which I shall recommend for such accidents.

I believe that in the majority of cases, if proper medical treatment is at once instituted, a closure of the fistula will be secured; but, as I have already stated, the result will depend largely upon the location of the fistula, and in those cases where success has been attained by methods non-surgical the injury to the intestine has occurred low in the pelvis, where there is slight vermicular action of the bowel.

Absolute rest in bed is an essential feature of the treatment, and the patient must be kept upon a diet that is as little gas-producing as possible; the purpose of this being to prevent distention of the bowel and to allow the rent to lie as much in apposition as possible. The object to be attained in securing success is a firm closure of the fistula from its starting point in the bowel, and when it has manifested itself no time should be lost in stimulating granulations about the site of the injury. In the two cases which occurred in my practice, one started in the sigmoid flexure of the colon twenty days after laparotomy was made, and the other made its way through the cecum two months after the operation. As soon as I was informed that leakage had taken place I located the direction of the sinus, and, after washing it out thoroughly with a bi-chloride solution (1 : 1,000), I carried through the sinus and directly into the bowel a tampon of marine lint saturated with balsam of Peru. This dressing should be repeated daily and the tent kept in the bowel until the opening has become quite small; then the bowel should be thoroughly cleaned out with some form of cathartic, and afterwards kept at rest for a week, or until the resulting granulations have closed the opening in the bowel, which should be evidenced by the cessation of the escape of gases through the sinus; when first moved again, it should be by enema. Even after closure of the fistulous opening in the bowel has been secured, the sinus ought to be kept packed with the marine lint until granulations gradually force it out and close the sinus. In both of my cases this method of treatment was successful; I cannot say that it would have been had the fistula been in the small intestine, but I see no reason why it should not.

To be sure, the method I have spoken of is not the only

one that has been successfully adopted. Medical treatment of this condition must necessarily be with remedies which will stimulate a closure of the track by granulations; but the secret of success is the proper management of the bowel as a whole—to keep it well emptied, free from gas, and, above all, well irrigated. In a case that occurred in the service of Dr. Lee at the Woman's Hospital, Dr. Bird, the house surgeon at that time, succeeded in closing a large fecal fistula, after other methods had failed, by keeping the parts irrigated by a constant double current of warm water.

Should all attempts to close the fistula by such methods as I have mentioned fail, then the question of treating it by surgical means arises. Here again the method of treatment to be adopted will depend entirely upon the location of the fistula and the pathological conditions which surround it. A radical closure of the rent in the bowel means another laparotomy upon the patient, with all the attending dangers; and still there are many cases that have been neglected in the early stages of their formation, and have resisted all forms of medical treatment afterwards, that would readily and kindly yield to treatment by suture if the surgeon have the courage to try the second time and the patient would consent to undergo the ordeal. It is a much easier task to close fistulæ of the small intestine than of the large, owing to the difference in the thickness of the coats of the former and the fact that when the fistula occurs in the large intestine it is usually so low in the pelvis as to make it very difficult to introduce sutures, owing to the inability to get a good view of the parts. However, this difficulty can be readily overcome by illuminating the pelvic cavity with reflected light and placing the patient in the Trendelenburg position, with the hips elevated so that the abdominal contents shall gravitate away from the parts we wish to work upon.

Some two years ago I reported a case of secondary laparotomy for the purpose of finding a suppurating ligature and closing the sinus. After entering the abdominal cavity I found that the sinus not only led outward through the skin, but also into the rectum through its upper portion. In this case the opening in the bowel was so low in the pelvis, and the adhesions about it so firm, that I could not bring it to view; but by illuminating the pelvic cavity by reflected light

I was able to locate the fistula and close it successfully by stitching the rectum to the posterior wall of the uterus.

Although I am a strong advocate of the use of catgut suture within the abdominal cavity, whenever it can be done, in all cases of intestinal surgery I should abstain from using it and employ in its stead fine silk that had been properly prepared for the purpose. I invariably use the continuous stitch in this work in preference to the interrupted, for I deem it a safer form to employ.

If the fistula has occurred in the small intestine and is of such magnitude that it cannot be closed by refreshing the edges and properly uniting the cut surfaces, then the question of exsection of the bowel arises. It is being successfully done, and, had it been possible, I should have performed that operation in the case I have reported. Had I to deal with such a case again, I would treat it very differently, and, even though I sacrificed the ileo-cecal valve, I would cut the stricture and attempt a union of the intestine after the manner described for the relief of pyloric stricture.

It is not my purpose to enter into a discussion of the different forms of treatment adapted to injury of the intestines in this paper, but to record the fact that certain accidents have followed in the wake of improvement in gynecology and to attribute those accidents largely to carelessness. Although I have been looked upon as one who might be deemed radical in my ideas respecting abdominal surgery, I most emphatically declare that conservatism is always my motto; but I do not interpret conservatism to be idly sitting by and using palliative methods of treatment for cases which I do not understand, at the same time reading of work performed by others and condemning it because I cannot do it myself, but rather I consider conservatism to mean faithful, careful, intelligent study of one's cases until we can make a diagnosis based upon a perfect knowledge of the pathological conditions existing in each of the patients studied, and in that way know from positive knowledge whether operative interference is demanded or not. When that point has been determined, then operate, with the object in view always of having our patient recover without being obliged to record such an accident as I have narrated.

CASES OF FECAL FISTULA FOLLOWING LAPARATOMY.

Name of surgeon reporting case.	Number of cases.	Time of appearance.	Portion of intestine involved.	Form of disease operated for.	Influence of drainage tube in its cause.	Character of adhesions encountered.	Success or failure to cure by medical treatment.	Was secondary laparotomy made?	Remarks.
Dr. Ashby, Baltimore.	2	1 during first week, 1 during second week.	Sigmoid flexure of colon.	1 for pus tubes, 1 for extra-uterine pregnancy.	Tube used in both cases, but had no influence.	Extensive intestinal adhesions about the appendages.	Both closed spontaneously; first in three weeks, second in nine weeks.	No	Both made a most satisfactory recovery.
Dr. Baer, Philadelphia.	3	First, second, and third week.	Sigmoid flexure of colon.	2 for large ovarian cysts, 1 for pyo-salpinx	Tube exciting cause in 2 cases.	Extensive in 2 cases where tube was used.	Two closed spontaneously.	Yes; in 2 cases fistula was found.	Will not attempt second laparotomy again; considers the best treatment non-surgical.
Dr. Bernays, St. Louis.	5	1 in first week, 2 in second week, 1 in third week, 1 in fifth week.	Ileum in 3 cases, sigmoid flexure in 2.	Pyo-salpinx in 4 cases.	Cannot answer; cases operated upon first by other surgeons.	Extensive in all the cases.	No success with medical treatment.	Yes; in 2 cases successful.	Three still under observation when reported.
Dr. Byford, Chicago.	1	During first week.	Sigmoid flexure of colon.	Ovarian tumor.	No tube used; gauze drainage.	No adhesions, but ureter cut and stitched into wound.	None	No	Patient died at end of week from exhaustion.
Dr. Boldt, New York.	1	Third week.	Ileum	Ovarian tumor.	No tube used	Adhesions moderate.	None	Yes; successful.	Cause of fistula, mural abscess rupturing into bowel.

CASES OF FECAL FISTULA FOLLOWING LAPARATOMY.

Name of surgeon reporting case.	Number of cases.	Time of appearance.	Portion of intestine involved.	Form of disease operated for.	Influence of drainage tube in its cause.	Character of adhesions encountered.	Success or failure to cure by medical treatment.	Was secondary laparotomy made?	Remarks.
Dr. Bellamy, Memphis, Tenn.	1	Second week	Pneum.....	Parovarian cyst.	Tube used; don't know its influence	Adhesions about tumor, but not intestinal.	No success with medical treatment.	No.....	Cyst could not be enucleated, and was drained without being stitched to the wound
Dr. Coe, New York.	3 (not in his own practice).	First, second, and third week.	Small intestine.	2 for ovarian cyst, 1 for pyosalpinx	Caused in 2 cases by tube pressure.	Adhesions in cul-de-sac.	No success with medical treatment.	No.....	Has witnessed one case of secondary laparotomy which terminated fatally.
Dr. Currier, New York.	1	1 month after second laparotomy.	Pneum.....	Papilloma of both ovaries.	Mural abscess in track of tube.	Adhesions extensive.	Closed in three weeks spontaneously.	No.....	This fistula was subsequently opened by accident.
Dr. Cushing, Boston.	5	All during first week.	Not stated..	2 for tubercular peritonitis, 3 for disease of appendages. Ovarian tumor.	No influence attached to drainage tube.	Adhesions extensive.	Three healed spontaneously.	No. . . .	All were severe cases.
Dr. Dudley, Chicago.	1	During first week.	Don't know.	Ovarian tumor.	Tube used; don't know what influence it had.	Adhesions extensive.	No success with medical treatment.	No.....	Patient died several months later from Bright's disease.
Dr. Dudley, New York.	3	First 20 days, second 60 days, third 30 days after operation.	First sigmoid flexure, second and third through cecum.	2 for pyosalpinx, 1 for pericecal disease.	No tube used	Extensive adhesions in all.	Two closed spontaneously; third fatal.	Yes, in third case.	Died in thirty-nine hours from reopening of intestine. See case reported.

Dr. Etheridge, Chicago.	2	Both during first week.	Small intestine.	Removal of tubes and ovaries.	Tube used in both; thought to be injurious.	No adhesions.	No success by treatment.	Both refused operation.	Both died. Time of death not stated.
Dr. Goodell, Philadelphia.	4	All in the first week.	All through the rectum.	2 for pyosalpinx, 2 for parovarian cysts.	Tube was in fluent in causing all.	Extensive adhesions in all.	Three healed kindly; fourth still open at end of a year.	No.....	Am disposed to attribute the formation of the fistulae to the pressure of the tube.
Dr. Goffe, New York.	1 (not his own case).	6 weeks.....	Not known..	Ovarian tumor.	Tube used; influence not known.	Extensive adhesions.	Medical treatment unsuccessful.	No....	Patient died of peritonitis.
Dr. Gordon, Portland, Me.	1	Third month	Unknown..	Removal of appendages.	No tube used	Extensive adhesions.	Healed spontaneously.	No.....	The cautery was used in treating this case.
Dr. Jackson, Chicago.	1	10 days.....	Small intestine.	Ovarian tumor.	Tube used, but had no influence.	Extensive adhesions.	Medical treatment failed.	Yes.....	Secondary laparotomy by another operator. Patient died in twenty-four hours.
Dr. Jaggard, Chicago.	1	7 days.....	Small intestine.	Hernia of umbilical cord in infant.	No influence from tube.	No adhesions	Medical treatment successful in 2 weeks.	No.....	Fistula caused by pressure of harelip pins used in closing wound.
Dr. Jos. Taber Johnson, Washington	2	First in 10 days, second in 2 weeks.	Could not say.	Pelvic peritonitis.	Tube used, and directly influential.	Adhesions extensive in 1 case only.	Both healed spontaneously.	No....	
Dr. H. Kelly, Baltimore.	12	All in first week.	Sigmoid flexure of colon.	Pyosalpinx and ovarian abscess.	Tube had no influence.	Extensive adhesions in all cases.	All but one healed kindly.	No.....	In these cases the fistula was caused by injury to the outer coats of the bowel.

CASES OF FECAL FISTULA FOLLOWING LAPARATOMY.

Name of surgeon reporting case.	Number of cases.	Time of appearance.	Portion of intestine involved.	Form of disease operated for.	Influence of drainage tube in its cause.	Character of adhesions encountered.	Success or failure to cure by medical treatment.	Was second laparotomy made?	Remarks.
Dr. C. C. Lee, New York.	3	2 in first week, 1 in 10 days.	2 through rectum, 1 through descending colon.	For extensive disease of appendages.	Tube the cause in 2; not used in third.	Extensive adhesions in all.	Medical treatment successful.	No	Constant irrigation was used in these cases, with the best success.
Dr. T. H. Manley, New York	3	From 1 month to 4.	Not known positively.		Cannot say as to influence of tube	Extensive adhesions in 2 cases.	One healed kindly; result in others not known.	No	
Dr. McLaren, St. Paul.	2 (not his own).	7 and 10 days.	Small intestine; sigmoid flexure.	Pyo-salpinx and Tait's operation.	Tube was influential in 1 case.	No adhesions	No result with medical treatment.	Yes; in first, twice without success.	Second case operated upon since report was sent. Result not known to writer.
Dr. Mann, Buffalo.	1	Third week.	Large intestine.	For intestinal anastomosis.	Tube had no influence.	No adhesions	Closed spontaneously.	No	
Dr. Moseley, Baltimore.	1	10 days	Small intestine.	Double pyo-salpinx.	Cannot say ..	Extensive adhesions.	Closed spontaneously.	No	
Dr. Palmer, Cincinnati.	1	Second week	Small intestine.	Ovarian tumor.	No tube used	Extensive adhesions.	Closed spontaneously.	No	
Dr. Parish, Philadelphia.	2	3 and 6 weeks.	Sigmoid flexure and rectum.	Hematoma and double tubal abscess.	Soft tube used; no influence.	Extensive adhesions in both cases.	First closed by medical treatment; second failed after making vaginal examination	No	The second case was caused by patient walking about on third day with drainage tube in wound.

Dr. Reamy, Cincinnati.	4	6 weeks, 5 weeks, 2 weeks, 2 weeks.	2 through ileum, 1 rec- tum, 1 he- patic flexure of colon.	2 tubercular peritonitis, 1 ectopic gestation, 1 removal of right kid- ney.	Tube instru- mental in all the cases.	Extensive adhesions in all.	First two died; third healed spon- taneously; fourth nev- er healed.	No.....	Third case, ectopic gestation, reported in Cincinnati Aca- demy of Medicine Transactions.
Dr. Reeves, Dayton, Ohio.	1	First week..	Cannot say..	General peri- tonitis.	Tube had some influ- ence.	Extensive adhesions.	No success with medi- cal treat- ment.	No.....	
Dr. Sims, New York.	2	First week..	Small intes- tine.	Fibroid tu- mor and ovarian cyst	Tube used in first; no in- fluence.	Extensive adhesions.	Healed spon- taneously.	No.	Second case died from facial erysipelas.
Dr. Sutton, Pittsburg.	1	Second week	Small intes- tine.	Tubercular peritonitis.	No tube used	Extensive adhesions.	Healed spon- taneously.	No.....	
Dr. Thomas, New York.	2	1 in first week; sec- ond not known.	First small intestine, not second known.	Double ova- riectomy.	Tube used; influence not known.	Adhesions very exten- sive.	Both cases healed spon- taneously.	No.....	Second case reported by Dr. Sutton, of Pittsburg.
Dr. Wilson, Baltimore.	1	First week..	Small intes- tine.	Ovarian tu- mor.	Tube instru- mental in causing fis- tula.	Adhesions very exten- sive.	Fistula never healed.	No....	Dr. Wilson holds the opinion that the tube is largely in- strumental in caus- ing fecal fistula.

NOTE.—A glance over the above table of cases will readily show that by far the greatest number of successful results were secured with medical treatment, and also that the results obtained by secondary laparotomy were certainly not encouraging. In the seventy-four cases reported, secondary operation for cure was made *eight* times; three proved successful, *three* were failures (the fistula not being found), and two died from the operation.

While in London last summer Mr. Skene Keith kindly gave me the notes of four cases that had occurred in the practice of his father. All had occurred in cases where extensive adhesions complicated the laparotomy, and all healed kindly with medical treatment. Mr. Keith inclines to the opinion that secondary laparotomy is seldom needed if the fistula is properly treated in its early stages

