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LONDON
J. & A. CHURCHILL
11 NEW BURLINGTON STREET
1888

ON

THE PASSAGE OF AIR AND FÆCAL MATTER WITH THE URINE.

On two recent occasions I have had to deal with cases in which the most prominent symptom consisted in the passage of air and fæcal matter with the urine. Having had no previous experience of this terrible complication, I did not at first clearly comprehend its significance, and was unable to express a correct opinion as to the cause of the fistula or the course that the disease would run. I must confess to have been strongly under the impression that such communications were generally the result of malignant disease. In this, however, I now acknowledge to have been mistaken. The result of further research into the subject shows indisputably that entero-vesical fistulæ are far more commonly the result of inflammatory mischief than due to perforation from cancerous growth. The prognosis and hope of benefit by treatment is thus more favourable than could have been anticipated.

The condition is an uncommon one, and it is probably on this account that so little is known concerning it. It is proposed in this paper, by collecting

isolated records of the disease distributed through medical literature, to see what further light can be thrown on its nature and treatment.

The cases collected in the Appendix are sixty-three in number. Of course it is not professed that they represent all that have been recorded. Nevertheless, I believe they include the majority of those sprinkled through the English and American literature. In utilizing these cases, one cannot but feel a debt of gratitude to those who have taken the trouble so carefully to record their experience. These records extend over nearly two centuries, from the time when old Anthony Fothergill thought "the disease might be cured by a course of Bristol water and ass's milk," to the cases successfully treated by colotomy, published by Mr. Bryant.

A list of references is also given to cases published in journals, &c., inaccessible in London, which may be useful to those who care to carry their researches further at some future date.

PATHOLOGY.—When air and fæcal matter escape together from the urinary passage, there can be no doubt that a communication exists somewhere between the bladder and intestine. If air alone escapes, the question may arise as to whether it entered the bladder through some fistulous communication with the bowel; or, if it might possibly be due to some morbid condition of the urine.

In answer to this, so far as I am aware there is no case on record in which gas has arisen from decomposition of the urine in the bladder. It therefore may be safely assumed that the passage of air with the urine is positive evidence of a communication

existing, either directly or indirectly, between the bladder and the bowel. The causes of such entero-vesical fistulæ arrange themselves under three headings :—1. Traumatism ; 2. Cancer ; 3. Inflammation.

Of the sixty-three cases collected, the following table shows the relative proportion due to each cause :—

Traumatic . . .	2	Inflammatory . .	45
Cancerous . . .	9	Unascertained . .	7

Traumatism.—There are only two cases in the table which can be attributed to injury. In one of these an immense slough formed after a severe labour lasting four days, with the result of an extensive communication being established between the rectum, vagina, and bladder. In the second case, the patient was impaled on a stake, causing a wound of the bladder through the rectum, resulting in a permanent fistula. These two cases require no comment, the nature of the lesion being sufficiently obvious.

Cancer.—In nine cases only could the communication be traced to this cause, and in four of these the specimens were museum ones, so that in all probability the relative number of cases due to cancer given in the table is higher than it should be ; for, owing to cancer being necessarily fatal, a larger proportion of such specimens find their way into museums than is the case when the cause is inflammation.

I must confess to considerable surprise that such a small number of cases proved to be of cancerous origin, since by the light of my own experience alone, before investigating the subject, I anticipated that the majority of such fistulæ would prove to be

malignant, for two out of the only three cases of the disorder coming under my observation were so.

Considering how common is malignant disease of the rectum in the neighbourhood of the bladder, it is a matter of some wonder that it so seldom terminates in perforation. It appears that cancer, although causing destruction of the old tissue, rapidly produces fungoid granulations which have a tendency to block up any cavity formed by slough or ulceration. Even in cases where cancer has been the primary mischief, the actual perforation of the bladder seems to have resulted just as often from the bursting of a secondary abscess as from the direct extension of the growth itself.

Inflammation.—Forty-five cases, or over seventy per cent., originated in some form of inflammatory mischief, including simple ulceration. In two of these cases, stone in the bladder was supposed to have been the cause of the fistula; but this appears to be very doubtful, the more likely explanation being that the stone was the effect rather than the cause. For in other cases of stone it was conclusively shown that the calculus was merely a phosphatic deposit round an inspissated fæcal mass.

Cases of inflammatory origin arrange themselves for analysis as follows:—

Abscess . . .	15	Ulcer	4
Stricture . . .	8	Stone	2

Exact nature not described, 16.

Abscess.—In fifteen cases, either from evidence in life or from post-mortem examination, absolute proof was obtained that the fistulæ were the direct

result of an abscess bursting both into the bladder and into the bowel ; while, in many of the unclassified cases, there is a strong suspicion that the trouble arose in this way.

It is rather foreign to the purpose of this monograph to discuss the cause of these abscesses. Some of them appear to have followed after confinements, and were no doubt originally formed in the pelvic tissue ; but probably the majority of them resulted from inflammation set up by accidental perforation of the bowel by fragments of bone or other foreign bodies. Some of these abscesses appear to have existed for a considerable time before bursting. It is worthy of remark that they may extend, and burst into the bowel at a considerable distance from their site of formation. Thus, in three cases the abscesses were secondary to a stricture in the lower part of the rectum, but, instead of bursting back into the rectum, they had extended upwards, and opened both into the ileum and cæcum. Abscesses originating higher up are limited in their extent by a localized peritonitis, so that the walls of the cavity may be bounded by the bladder on one side and coils of matted intestine on the other, the abscess being circumscribed and shut off from the general peritoneal cavity by firm adhesions. Occasionally these abscesses burst into the bowel in more than one place, and thus the double communication of the bladder both with the large and small intestine is accounted for.

Stricture. — In eight cases the fistula was secondary to fibrous stricture. In some of these

the strictured portion of the bowel was firmly adherent to the bladder, and the communication was found to lie between the interior of the strictured portion of the bowel and the bladder. In other instances the intestine above the narrowed part was much dilated, and the fistula appeared as if the result of an ulceration commencing in the dilated pouch and perforating into the bladder, the viscera having previously become adherent.

Ulceration.—In three cases only is the communication described as caused by a simple ulcer. In each of these the bowel was adherent to the fundus of the bladder at a single spot, through which the perforation had occurred. It is not clear as to whether the ulceration of the intestine was the primary condition, the base of the ulcer first becoming adherent to, and subsequently perforating, the bladder; or, whether there might have been an old adhesion between the viscera which had subsequently ulcerated. In one* case the ulceration seems to have resulted from an abscess originating in a diverticulum of the bladder. It is certain, however, in the great majority of instances, that the initial lesion is rather intestinal than vesical.

SYMPTOMS.—By careful inquiry it is often found that for some time prior to the actual appearance of air and fæces in the urine, the patient has been suffering from bowel trouble. There is often a history that, for many months past, alternating constipation and diarrhœa has been complained of, the latter gradually becoming the more prominent, so that from three or four to a dozen or more stools

* Case 44.

a day occur. It is not true fæcal matter that is passed on these occasions, the discharge sometimes being a glairy mucus; but more commonly it is dark, somewhat resembling coffee-grounds, being a mixture of fæcal débris, pus, mucus, and blood. There is often tenesmus, and a fixed pain in the lower part of the back. Such symptoms almost certainly point to a stricture, either malignant or of a fibrous nature.

In other cases the premonitory symptoms may have been of a different nature. They may have commenced by severe abdominal pain, possibly accompanied by a rigor, while a quick pulse and raised temperature suggest an inflammatory disturbance. At first general peritonitis might be suspected, but after a time the pain becomes localized, a particular part of the abdomen or pelvis being hard and tender on pressure. Sudden relief from pain may follow a discharge of pus from the rectum or bladder. With such symptoms there will be no difficulty in diagnosing an abdominal or pelvic abscess, which has burst both into the bladder and intestine. In other cases, again, the premonitory symptoms have been very obscure, but nevertheless suggesting some form of intestinal disorder. For some time prior to actual perforation, symptoms referable to irritation of the bladder develop. These, for some weeks or months, are often very slight, the patient merely complaining of an increased desire to micturate. It is at this time that the symptoms somewhat resemble, and may be mistaken for, stone in the bladder. Soudell, in reporting one of these cases more than a century ago, says that "the physician in attendance said he was as well

assured that there was a stone in the bladder as if he saw it in his hand." The post-mortem, however, showed the physician in error, for there was no calculus.

A time comes, generally somewhat suddenly, when the urinary symptoms become greatly aggravated; micturition is very frequent, the water scalds, and there is much spasmodic pain, suggesting the onset of an acute cystitis. About this time the patient is often horrified by finding that air is passed through the urethra, and escapes, with either a bubbling or explosive sound, on passing water. Sometimes the air is intimately mixed with the urine, making it frothy—a condition graphically described, by a writer in the last century, "like liquor from a cock when the cask is almost empty." Then follows, in a few days or weeks, the appearance of fæcal matter in the urine. At first this is but small in quantity, forming a fine sediment, easily mistaken for the deposit of simple cystitis; but the amount is soon increased, the urine becoming stained, and having a thick muddy appearance. As time advances, not only is the water thick, but solid, or semi-solid, fæcal material passes with it, blocking the urethra. The patient's condition is now a terrible one, and the downward progress becomes rapid. "The form and figure of manhood depart, the demeanour is no longer erect, and the dejected behaviour of the visage betrays the latent disquietude within. Each day is a task of painful and sickening discipline, existence being a burden." *

With few exceptions, the pain is intense; indeed,

* Dr. Hingeston. Case 10.

in one of my cases the patient had unendurable agony from the time the fæcal material appeared in any quantity till relieved by operation. I do not know that I have ever witnessed more acute suffering than was endured by this patient. That his case was not exceptional in this respect is shown by the records of similar miseries in many of the cases appended. Indeed, one poor fellow, a medical man, could endure his sufferings no longer, terminating his own life. It is possible, in rare cases, that pain may be absent.* Retention of urine, owing to the constant blocking of the urethra by fæcal matter, is common, and in one case † ended in a fatal extravasation. The frequent use of a catheter from this cause is often required, but its passage soon becomes extremely painful from ulceration of the urethra.

It is a curious feature that often, although fæcal matter will pass freely from the rectum to the bladder, the urine does not generally pass into the bowel. This must be due to the opening being valvular. Occasionally, after a while the bladder appears to become more tolerant, and the pain less.‡ The pain sometimes is aggravated by special articles of diet. In one of my own cases the patient was most intolerant of any form of alcohol, a tablespoonful of brandy or half a glass of wine being invariably followed by intense spasmodic pain in the bladder. It may be observed that a similar susceptibility in this respect is noted in another case.

The coma and delirium which frequently accompany the closing scene of the malady appears not unlikely to be of toxic origin, and may be due to the

* Case 20. † Case 21. ‡ Case 30.

absorption of decomposing urine passed into the intestine. Although it is true, as already mentioned, that in some cases no urine escapes into the bowel, in others it certainly does so to a large extent. Healthy urine is known to produce little inconvenience when passed directly from the bladder into the rectum, but the conditions must be very different when putrid urine finds its way in any quantity into the colon or small intestine.

PROGNOSIS.—The prognosis is most unfavourable. In such cases as are due to cancer a fatal termination is inevitable, but it seems clear that death is greatly accelerated by the perforation into the bladder.

In the cases due to inflammation, if untreated by operation the mortality is very high. Of thirty cases in which the life-history is given, and in which there was no surgical interference, twenty-two died, giving a fatality of seventy-three per cent. In the majority of instances the patients only lived a year or two after the occurrence of the fistula, but in many the period was only to be reckoned by months. In one or two cases, however, life was prolonged for several years.

McWhinnie's patient, a medical man, was a remarkable instance in point. But here, for the first nine years gas only escaped, and that at long intervals. The urine remained clear of sediment, and there were no signs of cystitis, so that it may be safely assumed that the aperture was so small and in such a position as not to admit of the passage of fæces. During this time the patient suffered but little inconvenience. When the nature of the opening subsequently changed and fæcal material passed into the bladder, the symptoms became far graver. From some cause the

opening seemed again to have contracted, so that air alone passed, and the patient remained in comparative comfort for years.

In a small percentage of cases a spontaneous cure has been effected. In these fortunate instances the symptoms of perforation have been of short duration, and the condition is probably the result of abscess. In these circumstances, it is quite possible that the contraction of the abscess cavity with the consolidation of the surrounding parts may lead to closure of the communication; but unless this closure takes place within a few weeks the opening is almost certainly permanent.

DIAGNOSIS.—The passage of air from the urethra generally for some time precedes that of fæcal matter. At first, the air is often so slight in quantity, and being only occasionally passed, the patient himself has some doubt as to its occurrence. The best means of ascertaining the fact is to allow the patient to pass water while sitting in a hip-bath. By this means, if air passes it can be demonstrated beyond the possibility of doubt.

When fæcal matter comes away in any quantity, there is no difficulty in recognizing it; but when small in amount, and perhaps mixed with the products of cystitis, it is not so easily identified. In these circumstances the microscope becomes a valuable aid. If the urine be allowed to settle in a corked bottle turned upside down, and a little of the deposit from the cork examined on a glass slide under a low power, minute particles of excremental material can be readily seen. In one of my cases, although to the naked eye the urine was only slightly cloudy, with the

microscope starch granules, minute portions of fibrous tissue, and bits of vegetable hyaline membrane, were readily observed.

When the fact of communication has been established, two important questions arise for solution: firstly, as to the cause of the perforation, whether arising from malignant disease or inflammation; secondly, as to the portion of the bowel implicated.

The question of whether the fistula is the result of inflammation or of cancer, is a matter of vital moment in considering the prognosis. In some cases it is doubtless impossible to determine this with certainty. Nevertheless, by careful inquiry into the history and consideration of the general sequence of events, together with close attention to objective symptoms, an accurate diagnosis will be generally possible.

When the communication has resulted from abscess, there is often a history pointing so clearly to that cause as to admit of no doubt. Take, for instance, the two following cases :—

A patient,* aged fifty years, after walking for some time, had constant pain in the right iliac region. One day, after a long walk, she had a great desire to urinate, and noticed for the first time that her water had an unnatural colour and an unpleasant odour. This condition continued for a few days, when there occurred a sudden gush from the bladder of a very offensive mixture of pus and urine, accompanied by great pain and straining. After this free discharge, the old pain in the iliac region ceased and never recurred, but fæces appeared in the urine.

* Case 45.

A young healthy married lady* was suddenly attacked with symptoms resembling acute peritonitis, there being persistent vomiting, constipation, and high fever. When the more severe symptoms subsided, she was seized with irritation of the bladder. This occurred at the end of the third week of the symptoms. At this time an abscess burst into the bowel, as indicated by a large quantity of pus at stool, with sudden relief of the abdominal pain. Four days later fæces appeared in the urine.

If the trouble be situated in the lower part of the rectum, the nature of the disorder can be ascertained by digital examination. Occasionally, in difficult cases, some light might be thrown by careful observation of the material passed both by the rectum and the urethra. Broken portions of malignant growth may be thus detected. The value of such an examination was very clearly proved in one of my own cases.† Here we were in grave doubt as to the nature of the disorder. An examination under an anæsthetic failed to throw further light on the subject, but on the following day the nurse observed in the fæcal material passed by the rectum two fleshy masses, which had doubtlessly been broken off at the previous examination. One of these was the size of a pea, the other as large as the end of the finger. On examining these under the microscope, they proved to be portions of typical adenoid cancer.

If cancer of the bowel has so far advanced as to produce perforation of the bladder, it is likely that there will be general symptoms suggestive of the

* Case 23. † Case 53.

disorder. The gradual loss of strength and flesh for some time previously, and the insidious onset of the symptoms without the patient remembering any definite attack of pain and trouble suggestive of inflammation, is suspicious. Then, again, the nature of the motions may be of some assistance in forming an opinion. Although frequent actions described as chronic diarrhœa are a feature in stricture of the bowel, whether arising from fibroid inflammatory thickening or malignant disease, their character differs somewhat in the two disorders. In cancer, the muco-purulent discharge is often dark and coffee-coloured from blood-staining, which is not generally the case in fibrous stricture. Again, in malignant disease it is not uncommon to have considerable lumps of dark coagulated blood discharged from the bowel, a feature rarely observed in simple stricture.

Lastly, it must be remembered that, in the absence of any definite symptoms pointing to cancer on the one hand, or inflammation on the other, the latter is by far the commoner of the two disorders.

SITUATION OF FISTULA.—It is of the utmost importance, if possible, to ascertain in what portion of the intestine the opening is situated, for upon this point the whole question of treatment by colotomy hinges. The communication may be situated in the rectum, in the colon, in the small intestine, and in the small intestine and colon.

In sixty-three cases the following table shows the relative frequency of fistula in each situation :—

Rectum . . .	25	Small intestine . .	12
Colon	15	Colon and small intestine	5

Unascertained, 6.

The rectum was found to be the portion of bowel implicated in nearly half the cases, and generally the opening was in the middle portion, though, occasionally, higher up. When malignant disease or fibrous stricture of the rectum can be felt, it will be a fair inference that the fistula is in the neighbourhood of the disease; but it cannot be positively asserted that it is so.

In no less than three instances,* where the primary disease was in the rectum, an abscess had extended high up beyond the limits of the pelvis, and then burst into the ileum, cæcum, and bladder.

The colon was involved in fifteen cases. In four of these the actual point of communication was not stated; while in eleven—that is, in every case where it could be ascertained—communication proved to be with the sigmoid flexure. In eleven cases the communication was with the small intestine alone, while in five it was both with the colon and the small intestine. From these statistics two facts of great importance are established: the one, that communications with the large are about twice as common as those with the small bowel; the other, that in all the cases of communication with the larger intestine the opening existed either between the rectum and the bladder, or between the sigmoid flexure and the bladder; so that every one of them would have been relieved by a left lumbar colotomy. The practical importance of this cannot be overrated, for it gives a decided answer to the question, On which side shall colotomy be performed? Indeed, there is not a single case amongst the whole number in which there would

* Cases 10, 42, 47.

have been any advantage in opening the right rather than the left colon. The small intestine alone was involved in twelve cases only, while in five cases there was a double communication in both the large and small bowel.

The question arises if, in any individual case, a diagnosis can be made as to whether the communication is with the large or small intestine. With our present knowledge, absolute certainty is unattainable.

A careful digital examination of the rectum should always be made, and a complete examination in this part is greatly facilitated by an anæsthetic. I have on several occasions, on first examining patients for rectal cancer, failed to reach the disease with my finger; but yet, when the same patient has been placed in lithotomy position under an anæsthetic, the lower border of the growth has been easily felt. Such an examination should be bimanual, the right fore-finger being in the rectum while the left hand is employed in pressing the viscera downwards above the pubes. If, after such an examination, the disease can be discovered in the rectum, it is probable that the fistula is in the immediate neighbourhood; but, as already mentioned, there are occasional exceptions in this respect.*

A method of examination which might be tried, is to pass a catheter into the bladder, and then give an enema of milk in the rectum. If the milk finds its way into the bladder, it affords substantial evidence that the opening is in the large intestine. The opposite plan, of injecting milk into the bladder, might

* Cases 10, 42, 47.

also be tried. This last test would doubtless afford satisfactory evidence of the communication being with the large intestine, if the milk at once appeared through the rectum. On the other hand, its failure to appear would not necessarily mean that there was no communication, for the opening may be, and often is, valvular, only allowing a passage from the bowel to the bladder.

Help is sometimes afforded in the diagnosis by the character of the fæcal material, and the circumstances in which it is passed from the bladder. If ill-digested material is passed from the bladder, while at the same time the rectal motions contain no undigested matter, the fistula will probably communicate with the small intestine. In one instance, the matter passed by the urethra was so little digested as to enable the doctor to say exactly what the patient had been eating.

On the other hand, when the communication is with the rectum or sigmoid flexure, fragments of perfectly formed fæces are passed in the urine, with the most distinct fæcal odour and appearance. In some cases it is noted that the amount of material finding its way into the bladder is greatly influenced by the state of the bowels. When the patient is constipated, the urine becomes free; on the other hand, a relaxation of the bowels is followed by a flow of soft fæces into the bladder.

In each of the four cases* in which this symptom was present, the communication proved to be with the large intestine, three times the opening being in the sigmoid flexure, and once in the rectum.

* Cases 8, 21, 33, 36.

TREATMENT.—This is best considered under the headings—Operative, and Palliative.

Operative.—So recently as 1862 McWhinnie,* whose views may be taken as a fair sample of the surgery of the time, wrote: "We cannot for a moment retain the idea that surgical interference will be of any avail in cases of this description."

It is a matter of no small congratulation, as marking the progress of surgery, that five-and-twenty years later Mr. Bryant and others are recording cases in which the greatest relief has been afforded by operative interference.

When, from the history of a case, the fistula appears to have followed immediately upon the bursting of an internal abscess, it would be right to defer operative treatment for a while on the possibility of the opening spontaneously closing. On the other hand, when the previous history points to malignant disease or stricture of the bowel, the sooner operative treatment is undertaken in suitable cases the better. In such cases there is no hope of the opening closing by itself, while, by delay, the patient, from the terrible nature of his trouble, becomes so rapidly run down in health and strength as to render recovery doubtful.

Three methods of operative treatment would seem to be theoretically possible:

1. Colotomy, in order to divert the fæcal material from the bladder.

2. Supra-pubic cystotomy, with the view of allowing a free drainage of the putrid contents of the bladder, and with the possible chance of being

* Case 26.

able to close the fistula by an intra-vesical operation.

3. An abdominal section, in the hope of separating the intestine from the bladder, and closing the communication.

Colotomy.—In this operation we have an easy and effective plan of cutting off the fæces from the bladder, and thus indefinitely prolonging life. The condition of patients after colotomy is far more comfortable than is generally supposed. Indeed, if care be taken to make the opening valvular, and of moderate size, the patient has surprisingly little trouble in managing the artificial anus. As a rule, patients will have but one motion a day, and they have plenty of warning when this is coming, and they soon acquire the art of control. Doubtless, in some cases the mere shutting off the fæces above the fistula would enable it to close, so that it is quite possible that after a time the colotomy opening might itself be closed by operation. The effect of colotomy on the condition of the bladder is most satisfactory, the urine again becoming clear, and the symptoms of cystitis disappearing. The chief question, however, before performing colotomy is one of diagnosis; for obviously, if the communication be with the small intestine or cæcum the operation will be worse than useless. Fortunately, by a careful observation of the symptoms already referred to, it is generally possible to make a diagnosis as to whether the communication is, or is not, with the small intestine. Having decided upon the propriety of colotomy, a further question would arise as to what part of the bowel should be opened: the choice lies between an inguinal, a right, or a left

lumbar colotomy. I do not think an inguinal colotomy would be suitable for these cases. It often happens that the sigmoid flexure is strictured, and firmly bound to the bladder and neighbouring parts. It thus would be difficult to discover, and even if found it might be impracticable to draw it out and stitch it to the skin.

In its surgical aspect, a left lumbar colotomy is an easier and safer operation than that on the right side. The position of the bowel on the right side is often irregular and uncertain, while it not unfrequently has a complete mesentery. The argument has been used that, since the exact spot of communication with the colon cannot be certainly diagnosed, an opening in the right colon gives an increased chance of being above the fistula.

Such an argument is completely answered by the fact elicited in the cases recorded, by which it will be seen that there is not a single instance in which the colon between the points where it would be opened in a right or left lumbar colotomy, communicated with the bladder. The descending colon should be, therefore, chosen for the operation.

It must not be expected that the urine will at once become clear on the performance of colotomy. No amount of care in doing the operation will at first prevent a certain proportion of fæces passing into the bowel below the opening; but if the bowel has been well drawn up and freely opened, the fæces will nearly always, in the course of a few weeks, all pass through the artificial opening. This appears to be brought about by a slight prolapse of the upper part of the bowel being gradually acquired, which is

sufficient to steer all the fæces clear of the lower opening.

Supra-pubic Cystotomy.—I am not aware that the operation of opening the bladder in these cases has ever been performed, or even suggested. Indeed, it is only during the last few years, chiefly owing to the enterprise of Sir Henry Thompson, that it has been demonstrated how intra-vesical operations can be performed through the supra-pubic incision.

If in a case of entero-vesical fistula the symptoms pointed strongly to the communication being with the small intestine, an attempt to close the opening by an operation within the bladder would, under certain circumstances, be justifiable. I do not think such a proceeding would be the least likely to succeed if there were symptoms of malignant disease or stricture. On the other hand, if the fistula followed the bursting of an abscess, so that the bowel itself was healthy, there might be a fair prospect of success. If, after opening the bladder, it was found impracticable to close the fistula, at least a free drain would be established, thus avoiding the constant painful catheterism often necessitated by the impaction of fæces in the urethra.

An abdominal section with the view of separating the intestine from the adherent bladder, and sewing up the openings, might at first sight be thought possible; but after examining museum specimens, and reading the accounts of post-mortem examinations, I fear the operation would be impracticable. The original inflammatory trouble that has produced the fistula, has often so firmly matted the intestinal coils

to each other, and to the abdominal parietes, that even after death the point of communication could not be found amongst the mass of dense adherent tissue. During life, the chance of doing any good would be too remote to set against the risk of fatal damage during the operation.

Palliative Treatment.—If the patient has refused colotomy, or been advised that no operative interference is likely to be of avail, it remains to consider what can be done to make his condition more tolerable. A simple dietary, consisting almost exclusively of milk, appears in some cases to have afforded considerable relief, and certainly a trial should be given to it. In some instances, it has been noted that particular articles of food materially aggravate the distress. In one of my own cases it was very remarkable how quickly alcohol, in almost any form, aggravated the condition, an acute burning or smarting pain being complained of after taking a teaspoonful of brandy or half a glass of wine. A similar susceptibility in this respect is mentioned in another case. The position of the patient has at times a marked influence on the amount of fæcal matter passed into the bladder. In one case, for example, whilst in the recumbent position the patient suffered but little, scarcely any matter passing into the bladder, though when in the erect posture considerable quantities did so.

In another patient, it was noticed that the quantity was small as he lay on the left side, but was increased when in the opposite position. It is often noted that the sufferer's condition varies a good deal according to the state of the bowels. When these

are confined, but little matter enters the bladder, and the patient is in comparative comfort; while when the bowels are relaxed the symptoms are greatly aggravated, the urine being loaded with fluid fæces. As a rule, therefore, an effort should be made to keep the bowels confined. A milk diet helps much in this respect, while a nightly dose of solid opium tends in the same direction. If the bowels will not act of themselves, a copious injection of warm water, two or three times a week, appears to act better than a purgative.

The daily washing out of the bladder with warm water sometimes affords much temporary relief. A soft india-rubber catheter should be employed. Occasionally, the frequent use of the catheter becomes absolutely necessary, owing to retention of urine and the blocking of the urethra with fæces. A case * of fatal extravasation is recorded from the want of timely relief to an obstructed urethra. The passage of the catheter may be very painful from ulceration of the urethra. Some diminution of pain is obtained by the use of cucaine ointment for lubricating the instrument. Twenty grains to the ounce of laniline is a useful prescription. The question of administration of opium to the extent of keeping a patient under its influence, is the same here as in any other painful disorder. I am averse myself to its frequent administration in large doses, the mental suffering thus induced being often far more intense than the physical pain it is intended to relieve. A moderate dose at night, with the object of confining the bowels and inducing sleep, would

* Case 21.

doubtless be beneficial, while a morphia suppository, containing from a sixth to half a grain, combined with double the quantity of cucaine, may be useful for relieving local pain. An injection of twenty minims of liquor opii sedativi in an ounce of thin starch may be tried, and sometimes gives more relief than a simple suppository.

APPENDIX.

1.—*Communication between Rectum and Bladder.* (*Excrementis alvi per penem ejectis.*)

By Wagnerus.

("Miscellanea Curiosa," 1685, p. 159.)

(*Translation.*)

A parson suffering from vesical calculus had for some days much pain around the pubes, when at length his fæces, having not room enough to pass per anum, began to creep out of the penis with violent pain. This condition lasted for six months. In the meanwhile he was kept alive by broth and putticults; but, if by chance he swallowed the interior of apples, he suffered the must acute pain after defecation. At length, entirely exhausted by suffering, he paid a debt to Nature, in the fiftieth year of his age.

2.—*Communication between Intestine and Bladder.*

By James Hill.

("Medical and Philosophical Reports," 1784, vol. ii. p. 194.)

"A middle-aged lady, in the spring of 1749, became affected with obstinate costiveness. On one occasion, in May, in spite of all the assistance she

could obtain, she had no passage either of stool or urine for eight days. During this time she was affected with the most excruciating pain, and her belly swelled to a surprising degree, although she laboured under an almost constant vomiting. After this she discharged some urine, but it was mixed with a considerable quantity of fæces. She then had a stool, and the swelling of her belly fell considerably. After this she lived about three months. During this time she never passed a drop of urine without a mixture of fæces. Another circumstance which deserves to be remarked in the case, is that no sooner did any flatulences move in her stomach or bowels, but they made their way to the bladder. There they have remained till a convenient opportunity, when they have always discharged with a very great noise. Her belly began to swell, and increased slowly till she died, which was in the middle of August. At this time it was greatly distorted. Permission to open the body was refused."

3.—*Communication between Intestine and Bladder.*

By Anthony Fothergill (Physician at Northampton).

("Medical and Philosophical Commentaries," 1784, vol. ii. p. 194.)

"The patient had for some time suffered from chronic diarrhœa and great flatulence, but his principal complaint was difficulty with the urine, with which he had been severely afflicted for some months. He was unable to empty his bladder without painful efforts, occasioned by wind collecting in the urethra, which produced an audible whizzing noise. He continued to linger for two months. Ten days before

his death the discharge of wind by the urethra increased much, and was attended by constant pains and tenesmus. Purulent matter and real alvine fæces accompanied his urine."

The author goes on to say: "In young subjects the disease might in some instances, though never without great difficulty, be cured by a course of ass's milk and of Bristol water, together with a course of mild balsamic injections. In old age, though the disease is incurable, yet it is of consequence to the practitioner, as well as to the patient and his friends, that a right judgment should be formed of its nature and probable event. This end, however, can only be obtained from such singular cases being faithfully recorded when they occur."

4.—*Communication between Colon and Bladder.*

By Stephen Soudell.

("Memoirs of Medical Society of London," 1792, p. 497.)

"In January 1780, a gentleman aged 60, who had previously enjoyed good health, began to complain of flatulences and pains in the bowel, with stools more frequent and loose than usual. During the months of February and March he took many doses of rhubarb, and also testaceous, cretaceous, astringent, aromatic, and tonic medicines, but without benefit. In April a new complaint intervened, which was an inclination to make water more frequently than usual, and he now complained also of pains in the hips, and at times in the penis and testicles. The urine was now generally turbid when first made, and after standing for some time

deposited a mucous or purulent sediment, at first white, but after some time of a brownish colour. In May wind came, sometimes together with the urine, and some caraway seeds, and seeds and coats of currants, were discovered. The physician who attended was, he said, as well assured there was a stone in the bladder as if he saw it in his hand; but as there was now an alarming disease of the bladder itself, and there was no room to hope for a cure if the stone was extracted, it was concluded to administer only palliative medicines. The patient gradually declined in flesh and strength, and died at the end of August. The purging continued more or less during the whole illness; the stools which he voided were like the grounds of beer.

"*Post-mortem.*—On opening the body a portion of the colon was found strongly adhering to the fundus of the bladder, between both of which there was a communication large enough to admit of one or more fingers. There was no sign whatever of any stone or calculus."

5.—*Communication between Rectum and Bladder.*

By J. Johnstone.

("Memoirs of Medical Society," London, 1792, p. 536.)

"Mr. A. had for many years suffered the most excruciating pains from gravel and stone in the bladder, and received no relief, but rather aggravation of pain, from the use of the late celebrated lithotriptic. Some years passed in this torture, when at length, on searching his stools, he found

pieces of gravel voided with them. I saw some of these pieces, and was perfectly convinced from their appearance that they had come from the bladder, and forced their passage through it and the rectum. The bay tincture was daily injected in oily clysters, to quiet the pain, till the pieces of gravel came away in the stools, and he has ever since been free from pain which had tormented him for so long a time. The wound through which they passed has perfectly healed, for he is now a very healthy and vigorous old man."

6.—*Communication between Rectum and Bladder.*

By Dr. Johnson, of Worcester.

("Memoirs of Medical Society," London, 1792, p. 542.)

"Mr. Wylde, keeper to Lord Foley, aged 63 years, consulted me four years ago for a prophylactic method to prevent the consequences of being severely bit by a mad dog, and the method having happily succeeded, I learnt from him that he had many years before been subject to a diarrhœa, which continued to waste his strength in a slow and gradual manner. In 1772 it grew worse, and with very particular circumstances. Besides near twenty motions to stool every day, he often distinctly perceived wind, and for a fortnight or three weeks before his death he made no urine at all, and it probably came away by stool. An ulcer in the rectum, the cause of the diarrhœa, had probably perforated the bladder, and he died in August 1772."

7.—*Communication between Ileum and Bladder.*

By Dr. Milford.

("Memoirs of Medical Society," London, 1792, p. 600.)

"John Leer, aged 62, in July 1788 complained of borborygmus. He had lost flesh considerably, attended with debility, and he had a cadaverous appearance in his countenance; the appetite was bad, attended with sickness after taking food, particularly fluids. He had frequent loose stools of a frothy white appearance. The urine was natural. These symptoms had commenced about six months previously. On August 10, after an attack of costiveness, he passed fæces with his urine. From this time he frequently brought off liquid fæces by the urinary passage, and at other times air mixed with the urine, causing it to bubble like liquor from a cock when the cask is almost empty. He grew weaker, and in September sunk into the arms of death without a groan.

"*Post-mortem.*—On opening the abdomen a portion of the ileum was seen firmly adherent to the fundus of the bladder. On dividing the inosculation a passage was discovered from the intestine, through which the excrement might freely pass. The intestinal canal was rather obstructed by its thickened coats at the diseased part. There was also much inflammation of the whole of the intestines."

8.—*Communication between Sigmoid Flexure and Bladder.*

By Salmon.

("Lancet," 1832, vol. i. p. 881.)

Mrs. B., aged 59, on March 17, 1831, gave the following history: For some years she had irregularity

in the bowels, being generally more relaxed than constipated. For the last two years she had frequent attacks of purging, sometimes going to stool twenty times a day. For some months the bladder had been very irritable and micturition frequent, and some motion had been noticed in the water after an attack of purging. When seen by Salmon the stools did not always come the wrong way, but depended on the looseness of the bowels, the quantity increasing or diminishing according as the bowels were relaxed or confined. She was treated by small doses of opium at night and an enema every morning, with a diet of milk and rice. With this treatment she was much more comfortable. Nothing could be felt by the rectum.

Through June and July she suffered intensely, and her strength evidently declined. She died at the end of August, after a most miserable state of suffering.

Post-mortem.—Body much emaciated. The peritoneum covering the recti was found closely adherent to the sigmoid flexure of the colon. The rectum was healthy. Immediately above the sigmoid flexure the colon was distended above a tight stricture. This stricture was circular in form and an inch in length. The bowel was firmly adherent to the peritoneum in front and the fundus of the bladder behind, and there was a communication between the bladder and the adherent bowel.

9.—*Communication between Rectum and Bladder.*

By James Rolph.

("Lancet," 1837, vol. i. p. 370.)

Mary Shaw, aged 19, had a severe labour lasting four days. On the fifth day an immense slough came away. On being examined some time afterwards it was found that there was a large communication between the rectum, vagina, and neck of the bladder, owing to the sloughing of the tissue.

She was told that nothing could be done for her, and was sent home to pass the rest of her days in a condition "lachrymabile dictu."

10.—*Communication between Colon, Ileum and Bladder.*

By Dr. Hingeston.

("Guy's Hospital Reports," 1841, p. 400.)

Until May 1835 a gentleman, aged 59, had enjoyed good health. At that time he had a fall, and from that date his health began to decline.

In April 1837 he had painful micturition for some weeks. This got better, and reappeared in January 1838, when for the first time fæces appeared in the urine. He gradually became worse. Soluble fæces streamed away from the urethra with urine and gusts of wind. He lingered on till the spring of 1841. "The form and figure of manhood departed, the demeanour was no longer erect, and the dejected behaviour of the visage betrayed the latent disquietude within. Each day was a task of painful and sickening discipline, existence being a burden."

Post-mortem. — The colon was enormously dis-

tended. There was some recent peritonitis, and the intestines were also involved in a mass of old adhesions. The sigmoid flexure of the colon, the ileum, and the cæcum were all adherent to the fundus of the bladder. There was a very tight stricture, about two inches in length, situated about three inches from the anus. Immediately above the stricture the coats were riddled with ulcerations and fistulæ leading into a channel between the bladder and the intestines.

This channel was an abscess cavity situated beneath the reflection of the peritoneum between the bladder and the bowel. It opened in front into the bladder, above into the colon, and through the colon into the ileum. The opening into the bladder was covered by some valve-like granulations.

11.—*Communication between the Ileum and Bladder.*

By W. C. Worthington.

("Med. Chir. Trans.," London, 1844, p. 462.)

Mary Fletcher, aged 65, four years previously commenced to suffer from obscure abdominal pains. Two years ago, bladder symptoms developed. These gradually increased, whilst her health continued to give way, and stone in the bladder was suspected. On her admission into the Lowestoft Infirmary, she was much emaciated and distressed; her chief symptoms were frequent and painful micturition, bloody urine, which was ropy and highly offensive, and occasionally contained fragments of extraneous matter.

A diagnosis of malignant disease was made, and she died a few weeks later.

Post-mortem.—The ileum proved to be the seat of

a disease which seemed to have originated in stricture. On opening the bladder, it was found to be partly filled with fæculent matter, and also to contain portions of undigested food, such as currants, seeds, and other vegetable matter. At its fundus was discovered an opening communicating with the adherent ileum, large enough to admit the point of the finger.

12.—*Communication between the Sigmoid Flexure and the Bladder.*

By J. Cruveilhier.

("Traite d'Anatomie Pathologique Générale," 1852, tome ii. p. 533.)

Fistulous passage between the sigmoid flexure and the bladder occurring in an old woman. The walls of the bladder were entirely wanting, corresponding to this adhesion.

13.—*Communication between the Sigmoid Flexure and the Bladder.*

By J. B. Curling.

("Medical Times and Gazette," 1852, p. 615.)

February, 1852.—R. S., chief engineer on a Dublin steamer, had complete obstruction of the bowels for several days. He had enjoyed good health till two years ago, when he became subject to constipation, with pains in the abdomen. For the last four months he experienced uneasiness in passing water. His present attack commenced a week ago with pain, vomiting, and constipation, and fæcal matter was observed in the urine.

The urine was dark, and passed with much pain.

Nothing could be felt in the rectum. Colotomy was performed, and gave exit to a large quantity of fæces. By the twelfth day motions had entirely ceased to pass by the bladder, only a little wind escaping occasionally from the urethra. Patient completely recovered from the operation, and died five months later.

There was no post-mortem, but Mr. Curling remarks that he had no doubt there was a simple stricture of the sigmoid flexure, and ulceration of the bowel above, which had become adherent to the fundus of the bladder, at which spot ulceration had established a communication.

14.—*Communication between Bladder and Jejunum.*

By Mr. Moore.

("Lancet," 1853, vol. i. p. 384.)

A man, aged 64, was admitted into the Middlesex Hospital, December 1852. He was much emaciated, and had a cachectic appearance. He passed urine every hour, the fluid being thick, ammoniacal, and very offensive. An evacuation per anum took place each time he micturated. He attributed his illness to a heavy blow over the belly twenty years ago. He had, however, only been ill for six weeks previous to admission.

Three weeks after admission the spasmodic action of the rectum and bladder became more severe, the urine being muddy and mixed with blood. The last fourteen days of his life he lived on brandy and soda, with a little milk. He suffered intensely, the pulse was never below 120, and he died in a comatose condition.

Post-mortem.—Body much emaciated. The jejunum was firmly adherent to the bladder, and between the two there was a communication large enough to admit a No. 12 catheter. The foramen was round, with thick puckered edges, and resembled a fever ulcer; the bladder walls were greatly thickened. Mr. Moore remarks that possibly the adhesion was the result of the old accident, and had existed for a long time, but that an attack of recent inflammation (consequent on fever) had speedily been followed by a destructive ulceration of the imperfectly organized parts.

15.—*Communication between Rectum and Bladder.*

By Mr. Moore.

("Lancet," 1853, vol. i. p. 385.)

The patient was in the Middlesex Hospital, under the care of Mr. Shaw.

There was a communication between the rectum and the bladder, the result of an abscess which had burst into both cavities.

16.—*Communication between Bladder, Sigmoid Flexure and Ileum.*

By W. Adams.

("Lancet," 1855, vol. i. p. 343.)

A woman, aged 54, came under observation in January. She had had good health till two years before, when she began to suffer from dyspepsia and general malaise, and during the last year had emaciated rapidly. The bowels acted with fair regularity, and the motion was always more or less

fluid. There was no marked change in her condition till February 10th, when the urine suddenly became thick and very offensive, depositing slimy matter mixed with shreds of slough of a whitish colour. Air also passed by the urethra.

Post-mortem.—Body extremely emaciated. The bladder was united by its fundus to the ileum in front, and to the colon behind. There was an irregular cavity the size of an orange, bounded by the anterior wall of the ileum in front, and the posterior wall of the colon behind, and communicating with the bladder by an opening admitting two fingers. In the upper and inner walls of the cavity were the orifices of the colon, surrounded by a free but irregular edge of mucous membrane. The lower orifice was much narrower, admitting with difficulty the point of the finger.

Beneath the mucous membrane of the ileum in the front wall of the cavity was a crescentic mass the size of half a walnut. In the posterior wall were three similar masses of induration, between which the bowel was much broken down by disease.

17.—*Communication between Sigmoid Flexure and Bladder.*

By G. A. Malcolm.

("Dublin Hospital Gazette," 1856, p. 94.)

The patient had suffered from cystitis for three years, and there had been a gaseous escape from the urethra on almost every occasion during micturition. The specimen was shown at the Belfast Pathological Society. The mucous membrane of the bladder pre-

sented several ulcerated spots, and a fistulous communication between the sigmoid flexure and bladder. The fistula was valvular at the vesical end, and hence, while it permitted the escape of gas from the intestine into the bladder, it prevented any risk of extravasation of urine. The intestinal extremity presented a wide aperture with sloughy edges. This portion of the colon was bound close to the wall of the bladder by firm old adhesions. In the apex of both lungs were numerous small cavities surrounded by tubercular granulations.

18.—*Communication between Rectum and Bladder.*

By. J. T. Banks.

("Dublin Hospital Gazette," 1856, p. 209.)

A man, aged 25, suffered in India from dysenteric diarrhœa. The evacuations were numerous, occurring at least twelve times a day. They were bloody, muco-purulent, and accompanied by severe tenesmus. The symptoms continued more or less for two years, when he was invalided home. After landing from the ship he had great pain in passing urine, which came away only in drops. A few days later fæcal matter appeared in the urine, and resembled in all respects that passed by the bowel. Air also passed by the urethra. Six months later he was admitted into the Whitworth Hospital. He was extremely emaciated. The bowels were evacuated ten to sixteen times in twenty-four hours, the motion being of a dysenteric character. Fæces also always passed with the urine. He lived, however, for nearly

two years in a miserable condition, his life ultimately terminating by rigors and vomiting.

Post-mortem.—The upper part of the rectum was dilated, but the middle portion so tightly strictured that the catheter would not pass through it. This part was tightly bound by old adhesions to the bladder. On opening the bladder it was found inflamed and deeply ulcerated, and there was a hole posterior to the ureters through which a large-sized catheter could be passed into the bowel.

19.—*Communication between Intestine and Bladder.*

By H. Thorp.

("Dublin Hospital Gazette," 1858, p. 101.)

1858.—A woman, aged 45, the mother of three children, suddenly experienced an incapacity to empty her bladder. On passing a catheter a blast of air with a whizzing sound escaped, together with frothy urine. For several days there was a recurrence of these symptoms, and the catheter had to be employed. The bladder appeared to be resonant.

The patient gradually regained the power of emptying the bladder, but continued to be troubled with the constant desire to make water during the four years she was subsequently under observation. No fæcal material could be seen in the urine with the naked eye.

20.—*Communication between Rectum and Bladder.*

By Charles Hawkins.

("Med. Chir. Trans.," London, 1858, p. 441.)

In July 1857 the patient was seen by Mr. Hawkins and Sir B. Brodie. He gave the following history :—

"In February 1855 I first discovered a substance, about two inches in length, which I have passed with my water, and which proved to be fæcal matter.

"Although I was passing it every day it gave me no pain or inconvenience. During the next year (1856) I ceased to pass any of the substance, but early in this year symptoms of disease of the bladder appeared, and continued with great severity."

A stone was now detected, and crushed. After a third crushing he had retention of urine all one night, but was suddenly relieved by the water passing from the rectum. No hole could be detected on examination. For some months fæcal matter passed by the penis, and urine by the rectum.

Four months later he wrote :—"I am free from pain, and better than I have been for years. I pass my water freely, and wash out the bladder every night. I have twice discovered some fæces in the urine, but at other times it has been quite clear."

The stone was phosphatic.

21.—*Communication between Sigmoid Flexure and Bladder.*

By Sydney Jones.

("Path. Soc. Trans.," London, vol. x. p 131.)

A gentleman, aged 64, began to pass fæces in his urine a year previously, his notice being directed to it by the passage of straw-like bodies through the urethra. More matter passed when his bowels were relaxed than when his bowels were costive. Flatus also passed by the urethra. He had frequent difficulty in micturition, the matter getting impacted in the urethra; and death ultimately took place from stoppage and extravasation of urine.

Post-mortem.—Three inches of sigmoid flexure were found contracted, and its mucous membrane thrown into a number of transverse folds. Among these folds were a number of false diverticula of unequal length. The bottom of one of these was ulcerated, and caused a communication between the bowel and bladder. In the bladder was a calculus the size of a horse-bean, consisting of fæcal matter covered with nitrate of ammonia and phosphates.

22.—*Communication between Colon (?) and Bladder.*

By Mr. Canton.

("Lancet," 1861, vol. i. p. 361.)

A man, aged 33, stated that he had caught cold, and had had inflammation of the bowels. Three weeks later he had some difficulty in micturition, and upon drawing off the urine by the catheter pus came away with it. From that time till his admission into the hospital fæcal matter was frequently found in the

urine. On his admission to the hospital the bowels were relaxed, the evacuations being of a dysenteric character. Dr. Wiltshire considered the communication to be probably with the colon. From the appearance and colour of the fæcal matter it seemed as if it passed from the small intestine, but on the other hand it possessed a strong fæcal odour. When he lay down he passed urine of a natural character, but when he rose for micturition wind and fæculent matter passed with the urine. He had no disease of the lungs, but suffered from profuse sweating. During his stay in the hospital he became very emaciated.

23.—*Communication between Intestine (Small?) and Bladder.*

By G. Gibb.

("Lancet," 1861, vol. i. p. 384.)

A young married lady, the mother of one child, was suffering from chronic diarrhœa in November 1852. She was then suddenly attacked by acute peritonitis and persistent vomiting. The bowels became constipated, and the fever high. When the more severe symptoms subsided, she was seized with irritability of the bladder and a desire to empty it every few minutes. This occurred at the end of the third week of the symptoms. An abscess now burst into the bowel, as indicated by the passage of a large quantity of pus at stool, with sudden relief to the abdominal pain.

Four days after the bursting of the abscess the urine was found mixed with fæculent matter, and

possessed an unmistakably fæcal odour. The colour was that of the contents of the small bowel. The fæces were always mixed with the urine, and were not seen in solid particles ; no flatus was ever observed.

After a time fæculent material became less and less, and finally disappeared. Her health improved, and she gained flesh and strength. Her recovery appeared to be complete and permanent. Dr. Gibbs states that he had no doubt that the communication was with the small intestine.

24.—*Communication between Small Intestine and Bladder.*

By Edward Wells (Reading).

("British Medical Journal," 1861, vol. ii. p. 658.)

A harness-maker, a stout man, aged 59, had suffered from mucous diarrhœa. He complained of great pain in the abdomen and bladder. His urine was loaded with lithates, and scalded him in its passage. A month later micturition caused great pain, flatus was passed at the same time, and fæcal matter detected in the urine. He had frequent vomiting, and died greatly emaciated.

Post-mortem.—The small intestines were bound by strong adhesions to the peritoneum behind the pubes, and also in a firm mass to the posterior surface of the bladder. On separating the adhesions, an abscess was found communicating both with the bladder and the small intestine. The remainder of the abdominal viscera was healthy.

25.—*Communication between Rectum and Bladder.*

By W. Price.

("British Medical Journal," 1863, vol. i. p. 419.)

A gentleman, aged 54, of a hypochondriacal temperament, had, for a series of years, subjected himself to using the strongest purgatives, and employed large injections of water and gruel. His diet consisted solely of milk, eggs, and broths, to the exclusion of solids. He first complained of pain in the left iliac fossa. After a few weeks the pain became aggravated, and he lost flesh perceptibly. When seen by Mr. Price he was in intense agony, unable to pass urine, but after a warm bath he passed through the urethra 3 ozs. of fæculent fluid. Two days later the discharge increased, and the irritability of the bladder was well-nigh unbearable. The quantity of fæculent discharge in the urine was about 12 ozs. in the twenty-four hours. In it were found grape-skins, orange pulp, and other extraneous bodies. Nothing passed per anum till the eleventh day of the attack, when a small evacuation occurred at intervals. By degrees the purulent discharge diminished, and the constitutional irritation subsided greatly.

The patient continued from this date till his death, thirteen weeks later, comparatively free from pain, save at the time when he was emptying the bladder.

Post-mortem.—Peritoneal inflammation of the lower half of the large intestine, with some purulent effusion into the abdominal cavity. There was rigid adhesion between the rectum and bladder. Scirrhous deposit existed in the coats of the rectum, and stric-

ture in the middle third. Immediately above the stricture was an ulcerated opening, the size of a horse-bean, communicating with the bladder.

26.—*Communication between Intestine and Bladder.*

By McWhinnie.

("Medical Times and Gazette," 1863, vol. i. p. 28.)

"Mr. C., an old attached medical friend and country practitioner, informed me, whilst driving in his neighbourhood, of air passed through the urethra during and after micturition. Feeling himself otherwise quite well, it gave him little concern, and he did not attach the importance to the symptom which evidently belonged to it. The passage of flatus had suddenly attracted his attention a short time previously. No pain or inconvenience had preceded it. Without causing unnecessary alarm, I recommended him to abstain from over-exertion, to take simple food, and keep the large intestine free by gentle aperients and enemata. By following this advice he remained comparatively comfortable for nine years, the water was always clear, and he had no pain of any kind. He performed his professional duties; I often accompanied him for a day's shooting without any allusion to the infirmity. In the winter of 1849 the case assumed a more serious aspect. A partridge bone had passed by the urethra, and, besides air, there was occasional fæcal matter, causing an impediment to the urine. At this time he was seen in consultation by Sir B. Brodie, Mr. Stanley, and Dr. Roupell. Although intestinal matter passed freely into the urethra, no urine passed into the bowel. Sir

Benjamin Brodie remarked he had perceived the same thing in another case. Nothing wrong could be discovered by the rectum or by palpation of the abdomen. Soon after this he had an attack of abdominal obstruction, which, however, gave way to treatment. From this period the case took a more favourable turn. The aperture between the two viscera became so far diminished that fæcal matter ceased to make its way into the bladder, and he remained comparatively comfortable for many years, troubled, however, at intervals by attacks of bowel obstruction, due, we imagined, to stricture. Air still passed into the bladder. These attacks of obstruction confined him to bed, and were followed by twenty or thirty evacuations. Between the attacks he was fairly well, and continued his professional work.

"On August 23, 1862, after a long drive, he was seized with an attack of obstruction. The distension rapidly became extreme, and on the 28th he had great difficulty in breathing, became black in the face, and apparently died asphyxiated."

McWhinnie thinks, from the extraordinary and rapid distension of the abdomen, the bowel may have given way above the stricture, causing peritonitis; or, possibly, the perforation might have been produced by a long tube introduced for the purpose of relieving the obstruction. He also adds, "We cannot for a moment entertain the idea that surgical interference could be of any avail in cases of this description."

27.—*Communication between the Bladder and Ileum.*

By F. Bainbridge.

("Medical Times and Gazette," 1863, vol. i. p. 397.)

February 24, 1851.—Mrs. L., aged 43, had for three years previously occasionally suffered from disordered urine.

On February 24, 1851, she complained of aching about the loins, deep-seated pain on pressure over the pubes, and scalding pains both before and after micturition. The urine, which was thick, contained bits of food, such as potato, meats, and seeds. So evident were the portions of food, that it was possible to tell what the patient had dined off—boiled beef and brown bread. The urine was slightly acid.

Twelve years ago she suffered from a large abscess, the opening of which between the umbilicus and pubes had remained patent for two years.

January 1853.—Since the last date the patient has suffered much, and for some months has had a discharging abscess nearly in the site of the old one. From this abscess bile and fæcal matter were discharged. The urine contained the same ingredients as when first examined. She suffered intensely, and died in May, from sheer exhaustion.

Post-mortem, May 1853.—Body greatly emaciated. The parietal peritoneum was adherent to the intestines, which were matted together. There was a ring-like opening between the ileum and the front portion of the bladder.

28.—*Communication between the Rectum and Bladder.*

By F. Bainbridge.

("Medical Times and Gazette," 1863, vol. i. p. 398.)

Dr. Bainbridge was sent for to see M. C., aged 56. He found him straining over the chamber-vessel, and with great difficulty passing pipe-like pieces of yellow fæcal matter through the urethra. This condition appeared to have come on suddenly, but he had been in ill-health for some time, and had had inflammation of the bowels a few years before. He died five weeks later from the rapid onset of acute peritonitis. There was no post-mortem, but Mr. Bainbridge, from the fæces appearing identical in colour and consistency with that passing from the anus, considered that the communication was probably with the rectum.

29.—*Communication between Cæcum, Ileum, and Bladder.*

By H. Goode.

("British Medical Journal," 1864, p. 488.)

A man, aged 43, was in robust health till September 1862. He then experienced pain on the left side between the umbilicus and pubes. The pain continued, and the bladder became irritable, but the urine remained normal.

During the next two months the urine gradually became loaded with mucus and floating white flakes, but no albumen. Wind now began to pass by the urethra, succeeded in a few days by fæcal matter exactly resembling the loose fæces passed at the same time by the bowel. No urine passed by the anus, and

the fæces were usually of a solid consistency. The urine was now highly albuminous, and contained a large quantity of pus. The pus gradually diminished in quantity. On January 13th he noticed in the morning that he passed a quantity of orange pulp that he had eaten during the night. On the 20th, after much pain, he passed a small sharp triangular fragment of plum-stone. He noticed at various times the passage of articles of food by the urethra, such as chopped mint, fragments of strawberries, &c. These fragments had a fæcal odour, but there was never observed any of the excretion formed peculiarly in the large intestine. Towards September 1863 he so far recovered as to be able to walk with vigour, and had gained much weight; but at this time he was seized with a rigor, followed by the signs of peritonitis, death taking place in a few days.

Post-mortem.—The coils of intestine below the level of the umbilicus were observed to be firmly agglutinated by old adhesions. There was no recent lymph. The cæcum and adjacent part of the ileum were adherent to the bladder. Behind the bladder in the pelvis was a firm mass, six or seven inches in diameter, which on removal proved to be a large abscess with indurated walls an inch thick. The abscess was united to the bladder on its front, and above to the lower surface of the cæcum and adjacent portion of the ileum. It communicated with both by apertures big enough to admit the finger; in the lower part the abscess opened into the bladder by a very small aperture between the ureters. The wall of the abscess was firmly united to the rectum, where it lay against it, but did not communicate with it.

30.—*Communication between Ileum and Bladder.*

By J. Morgan.

("Med. Chir. Trans.," London, 1865, p. 39.)

G. B., aged 60, spent many years in a tropical climate, but never had severe dysentery. In March 1862, after some pain, a tumour appeared in the left iliac fossa. It was hard, lobulated, and tender to the touch, and gradually increased to the size of an ostrich egg. Up to this time he had not suffered in general health. In April 1863 he was much alarmed one day by the passage of wind through the urethra, followed by intense pain in the bladder, and a few hours later he began to pass fæculent matter with the urine. The size of the tumour was not diminished. The quantity of fæces passed per anum gradually became less, while that passed by the urethra increased, and for the last three months nearly all the motion came through the bladder.

In the middle of August a profuse discharge of fæces occurred, being far more than could have accumulated by the ingesta, and the tumour became greatly reduced in size; he gradually sank, dying comatose early in October.

Post-mortem.—On opening the body all trace of the tumour had disappeared. Six inches of the lower part of the ileum was greatly distended; it was adherent to the abdominal parietes, and to the upper surface of the pubes. On laying it open an ulcer the size of a sixpence, with ragged edges, was found communicating directly with the cavity of the bladder. The opening was close to the ileo-cæcal valve. During life the disease was supposed to be

malignant. Great comfort was derived by syringing out the bladder with tepid water, and it was remarked how soon the viscus became reconciled to the transmission of fæces, which, though at first causing great agony and severe inflammation, was afterwards passed with but slight distress.

31.—*Communication between the Sigmoid Flexure and Bladder.*

By T. Holmes.

("Med. Chir. Trans.," London, vol. xlix. p. 65.)

J. B., aged 51, had suffered from bowel obstruction for four years. Three months ago bladder trouble first commenced. It was preceded by pain referred to the pelvis. Then flatus, and lastly fæces passed from the urethra. He had great pain and distress, and was losing flesh rapidly. Some urine passed per anum. Examination of the rectum and bladder revealed nothing.

Colotomy was performed, after which the motions passed entirely by the artificial anus; his urine became quite natural, and his general health perfect. He continued well for fifteen months, when fæces again made their appearance in the urine, and in a few weeks all the motion was passed by the penis. He emaciated rapidly, and died in a few weeks.

Post-mortem.—On opening the bladder a large irregular hole was seen communicating with the sigmoid flexure, the gut being adherent to the fundus of the bladder. There was no appearance of malignant disease, but the parts around were greatly thickened, as if from the effects of ordinary inflam-

mation. The cæcum was also closely adherent to the bladder, and there was a similar communication between it and the bladder as existed between the bladder and the sigmoid flexure.

Mr. Holmes regarded the holes as the result of simple ulceration, commencing in the intestine.

32.—*Communication between Intestine and Bladder.*

By M. Warren.

(Warren's "Surgical Observations," 1867, p. 242.)

A man, aged 35, for over a month stated that he had passed no urine, but only a white milky fluid per anum. He further stated that three times a day he was in the habit of going to the closet, and discharging by the rectum a large quantity of fluid, followed by a solid motion.

Nothing could be felt by the rectum. He stated that he had suffered for two years from inflammation of the bladder, with ulceration, ending in perforation. The patient was excessively pale and emaciated, and he had the appearance of a man whose case would terminate fatally.

33.—*Communication between Colon and Bladder.*

By Root.

("Boston Medical and Surgical Journal," 1867–8, p. 14.)

The patient, a medical man, in 1840 began to suffer more or less pain in micturition, and occasionally passed small quantities of gas in his urine. This at first was supposed to be due to some urinary decomposition, but soon afterwards he passed strawberry-seeds through the urethra, thus demonstrating the

existence of a vesico-intestinal communication. Upon rectal examination, one point was found which was thought to be the fistula, and closed with silver sutures. Still the difficulty continued, becoming more and more aggravated, fæcal matter passing by the urethra in considerable quantities, with intense suffering. The rectum was carefully and repeatedly explored by many of the most eminent surgeons in the country, and by one and another of them other points were pared and united, upon the supposition that they were the openings. It is worthy of remark, however, that at no time was an instrument ever known to be carried through one of the supposed openings into the bladder. He was extremely intolerant of examination, and would never allow a sound to be introduced into the bladder, or even take an anæsthetic. In spite of all treatment the malady persisted, varying much at different times. Sometimes so frequent and large were the discharges from the bladder as to deprive him of all rest by night and day; and at other times, especially when the bowels were constipated, he would have seasons of comparative comfort. At last, after twenty-six years of such suffering as seldom falls to the lot of a human being, while labouring under a violent exacerbation of the disease, he committed suicide.

Post-mortem.—Well-organized adhesions of the lower portion of the colon to the fundus of the bladder, and in the centre of it a smooth circular opening of communication between the two cavities as large as a large goose-quill. The bladder was much contracted, and its mucous coat thickened

and indurated. There was no sign of any other communication between the intestine and bladder.

34.—*Communication between Sigmoid Flexure and Bladder.*

By Maunder.

("British Medical Journal," 1869, vol. i. p. 211.)

J. F., a man aged 59, suffered from diarrhœa for some months.

On admission to the London Hospital he was greatly emaciated, and experienced intolerable pain, especially in micturition. The symptoms pointed to communication between the bladder and the bowel.

Colotomy was performed, and afforded him the greatest possible relief. The patient died calmly, six weeks subsequently, of exhaustion consequent on previous suffering.

Post-mortem.—A large simple ulcer was found at the lower part of the sigmoid flexure, and in the centre of it a small perforation communicating with the interior of the bladder.

35.—*Communication between Rectum and Bladder.*

By Fayrer.

("Indian Annals of Medical Science," 1870, p. 21.)

Conductor H., aged 44, was returning home one night, but owing to the darkness missed his way, and slipped down the hillside, alighting on a stake, which entered the rectum, penetrating the bladder. Through fear that if he moved he would

fall down a precipice, he remained where he fell till daylight.

During the next six months he suffered much from his bladder, having great pain during micturition. At this time it was noted that when he micturated in the standing position urine flowed from the anus. A friable calculus formed in the bladder and was removed, but he died a few days after the operation.

Post-mortem.—An opening was found between the rectum and bladder, behind the prostate, the parts about being adherent, indurated, and thickened.

36.—*Communication between Rectum and Bladder (Colotomy).*

By T. Bryant.

("Clin. Soc. Trans.," vol. v. p. 129.)

R. R., aged 49, was admitted into Guy's Hospital, July 1870. He stated that he was quite well till January 1867, when he noticed that wind passed through the penis after micturition. It passed without pain, and he had no other symptom of disease. In March fæces appeared in the urine when the bowels were relaxed, but not otherwise.

When admitted the urine was very fetid, and contained solid fæces. The bladder was irritable, and micturition painful. Ulceration could be detected by the finger in the rectum at the base of the bladder, but it had not a cancerous feel.

July 5.—Colotomy.

August 15.—He feels very well; the urine is

quite clear, can be passed with ease, and without pain.

May 1872. — He reports himself as follows: "I feel almost as strong as ever; I eat, drink, and sleep well, and am quite free from pain. Some water, however, still passes from the bladder into the bowel."

37.—*Communication between Rectum and Bladder.*

By Thomas Bryant.

("Clin. Soc. Trans.," London, vol. v. p. 127.)

Mr. T., aged 64, was seen in August 1869 by Mr. Bryant. He stated that he was healthy till three months previously, when he had an attack of diarrhœa and tenesmus, with the passage of blood-stained mucus. The symptoms improved. Six weeks later he noticed wind passed from the penis, and soon afterwards solid fæces appeared in the urine. This, from its solid nature, clearly came from the large intestine. Micturition was difficult and painful. The rectum was carefully explored, and no disease could be detected. The bowels were still loose, the motions being never well-formed.

Colotomy was performed, and fæces flowed freely from the artificial anus in a few hours. The rectum was washed out with water. The following day the urine was clear and passed readily.

Three weeks later the bowels were acting readily through the artificial anus. The urine passed naturally, but when the bladder was fully distended some found its way into the rectum.

October.—The patient had gained flesh, and felt

well. Once a day a little urine passes per anum; otherwise it flows freely, and is quite natural.

A year later the patient was still well, the urine being natural and clear, though a little occasionally passed by the anus. No sign of disease could be made out beyond the evidence of the recto-vesical fistula.

38.—*Communication between Large and Small Intestine and Bladder.*

By T. Bryant.

("Proceedings of Med. Chir. Soc.," Lond. 1871, p. 17.)

A man, aged 49, had been in good health for two years before admission to Guy's. At that time he was seized with violent purging, and passed a quantity of blood. From that date he passed, at uncertain intervals, mucus and blood with his motions. Seven months ago he felt pain about the hypogastrium and about the anus. Six weeks later he noticed wind and a small quantity of blood, and fæces passed with his urine.

On his being admitted into Guy's he suffered with difficulty in defæcation and frequent desire. The urine was loaded with fæculent deposit, and was passed with much pain. An examination by the rectum suggested a possible stricture high up.

Colotomy was performed, which gave immediate relief, and in two days the urine became clear and was passed without pain. All went well for two months, when abdominal pain recurred with some constitutional disturbance. Five days later the symptoms were relieved by a rush of fæces into the bladder. The fæces were thin and evidently from

the small intestine. From this time the man gradually sank, and died a few weeks later.

Post-mortem.—An abscess at the base of the bladder was found communicating with the large intestine, small intestine, and bladder.

39.—*Communication between Rectum and Bladder.*

By Erskine Mason.

("Medical Record," New York, vol. ix. p. 20.)

The patient, a man aged 27, had enjoyed excellent health until April 1871, when one night he was seized with pain in the bowels, the whole abdomen becoming tender and swollen.

This attack of sickness lasted nine weeks, during which time the patient became very much emaciated. He then resumed his occupation as clerk, and continued at it till October 1871, when he ceased on account of chills and fever.

In March 1872 he began to have constant pain over the region of his bladder, attended with diarrhœa, loss of appetite and strength. Not long after this the patient passed wind through the urethra, and shortly after fæces.

Dr. Mason saw him in March: he was then in a deplorable condition, passing more or less fæcal matter through the urethra, and at times unable to void urine at all. Urine would also pass per rectum. Colotomy was advised, but owing to temporary improvement and business matters it was postponed, and he left the hospital, In May, Dr. Mason was sent for to see him, and found him writhing with pain,

and unable to pass a drop of water, the bladder being evidently filled with fæcal matter. Colotomy was performed, and he did well for a fortnight, when he was seized with his old attack of chills and fever. He never rallied, and died a week later.

From the moment the colon was opened fæcal matter ceased to be passed in the urine.

Post-mortem.—The intestines were found bound down in the pelvic cavity. There was an opening the size of the index-finger between the rectum and bladder. The bladder itself has thickened, and its mucous membrane destroyed by ulceration. There was an abscess in the prostate. All other organs were healthy with the exception of the lungs, the apices of which were the seat of deposits.

40.—*Communication between Sigmoid Flexure and Bladder.*

By B. W. Richardson.

("Dublin Journ. Med. Science," 1873, p. 1.)

A gentleman, aged 76, suffered thirteen years from periodical fæcal accumulations, the result of some narrowing of the descending colon. To the touch the fæculent mass felt globular, the size of a large orange. Each collection, by the use of mild laxatives and enemata, gradually broke up, and temporary relief followed. Each lodgment took about three months to form. In the summer of 1871 the pain in the left iliac region had become constant, and in August a tender tumour appeared, projecting above the brim of the pelvis. When the finger was passed high up the rectum it was imagined that the lower

part of the tumour could at times be distinguished. Early in September micturition became frequent and difficult, often requiring the catheter. The urine, however, was free from sediment, and there was no albumen. A little later wind in considerable quantity was expelled from the urethra, and found to contain the following ingredients: "undigested striated muscular fibres, partly digested ditto, hyaline tubes composed of sarcolemma, starch grains, mucous corpuscles, and feathery-looking bodies." Morphia suppositories gave much relief. During October and November the urine contained much fæces, great drowsiness came on, and he died a few days later.

Post-mortem.—A cancerous mass was found implicating the sigmoid flexure, the colon above being narrowed and hypertrophied; the tumour was adherent to the upper part of the bladder. There was a narrow channel leading from the bowel through the adherent mass into the bladder.

41.—*Communication between Ileum and Bladder.*

By Dr. Jennings (Dublin).

("British Medical Journal," 1874, vol. i. p. 519.)

A specimen was shown at the Dublin Pathological Society, in which the ileum communicated with a cavity in the pelvis, into which fæces and urine passed.

The abscess had formed twenty years previously, after the birth of her only child.

42.—*Communication between the Colon, the Ileum, and the Bladder.*

By Dr. Skene.

("American Journal of Obstetrics," vol. xii. p. 740.)

A lady, 50 years old, was attacked with pelvic cellulitis. Her disease progressed, and she had an attack of obstruction which nearly cost her her life. Five months later fæcal matter began to pass through the bladder; she died a few months later of complete obstruction of the bowels.

Post-mortem.—The rectum was found to be obstructed by a cancerous mass. Both the ileum and colon were adherent to the bladder, and opened into it. The openings were oblique and valve-like, which accounted for the fact that, when during life water was injected into the bladder, it did not find its way into the bowel.

43.—*Communication between Large Intestine (?) and Bladder.*

By T. Bryant.

("Medical Times and Gazette," 1875, vol. i. p. 87.)

M. B., a single woman, aged 55, was admitted into Guy's with an abscess in the left groin. She had had pain in the groin and bearing-down for a year. For six months of this time she had what was called gastric fever, which kept her in bed six weeks.

Whilst getting better of this she was seized with severe pain in the abdomen. Within a few days of this, her urine became thick and scalded her, and she passed much blood with it. On admission into the

hospital she passed wind by the urethra, and the urine was loaded with pus and fæculent matter. About this time an abscess appeared in her left groin, which was opened. Nothing could be felt by the rectum. A few days later it was found that urine had passed by the rectum. A month later it was noted that fæces ceased to appear in the urine. Five weeks later she left the hospital; she was greatly improved and was gaining flesh, no water passed by the rectum, and the urine was perfectly natural.

44.—*Communication between Rectum and Bladder.*

By W. R. Williams.

("Lancet," 1881, vol. ii. p. 588.)

A man, aged 79 (?). His illness commenced a year and a half ago by difficulty in making water, and for the last year he has had frequent micturition night and day. An examination of the bowel showed nothing but enlarged prostate. The urine was alkaline, and of a yellowish red colour, depositing a large amount of flocculent sediment, consisting of leucocytes and a few crystals of triple phosphate. It contained albumen to the extent of one-eighth.

June 29.—Bowels very loose, and the appetite failing. Much tenesmus, and from his worn and cachectic appearance he was supposed to be the subject of malignant disease.

July 5.—He continues to suffer great pain. Vomiting has commenced, and the patient is greatly exhausted, and the motions of a urinous odour. The vomiting continued, and he died four days later.

Post-mortem.—The body emaciated, the peritoneum

was normal, and the bladder viewed *in situ* appeared healthy. On opening the bladder a mass of black doughy material was found, weighing an ounce and a quarter. Microscopically, it consisted chiefly of cellular material. On each side of the base of the bladder were several small hernial protrusions of the mucous membrane between the muscular fibres. At a point, an inch and a half above the orifice of the left ureter, one of these pouches opened into the middle of the rectum. The prostate was enlarged. The author considered the communication as probably the result of an abscess starting in one of the vesical sacculations, and remarks that this small lesion is another instance of the astounding discrepancy occasionally revealed between the symptoms as observed during life, and the lesions actually exposed at the post-mortem examination.

45.—*Communication between Rectum and Bladder.*

By W. Goodell.

("Philadelphia Medical Times," 1883, p. 514.)

Mrs. R., aged 50, mother of five children, for four years prior to November 1881 had been troubled by the occasional passage of small calculi, but her health was good with the exception of a constant pain in the right iliac region.

After a long walk in November 1881, she had a great desire to urinate, and then noticed for the first time that her water had an unnatural colour, and very unpleasant odour. This condition continued for a few days, when there occurred a sudden gush from the bladder of a very offensive mixture of pus

and urine, accompanied by great pain and straining. After this free discharge the old pain in the iliac region ceased, and never returned. After eating prunes the skins came from the bladder as did other articles of food. She was daily troubled with a painful discharge of gas through the urethra. She became greatly emaciated. Half a pint of carmine-coloured water injected into the rectum was immediately drawn off from the bladder. A calculus, consisting of a fæcal mass with a thin calcareous deposit, was found and removed. After this she rapidly improved, and got quite well of her bladder trouble.

Dr. Goodell considered, from the fact that the food passed from the bladder in a semi-digested state, that there was a strong probability that there was a second opening between the bladder and the small intestine.

46.—*Communication between Small Intestine and Bladder.*

By J. C. Morris.

("Philadelphia Medical Times," 1883, p. 515.)

Case in which, after a pelvic abscess, communication between the small intestine and bladder was discovered.

47.—*Communication between the Ileum, Cæcum, and Bladder.*

By C. A. Ballance.

("Lancet," 1883, vol. i. p. 411.)

A navy lieutenant, aged 27, had for some time been the subject of "chronic dysentery." Eighteen months previously the flatus commenced to pass per

urethram, and continued to do so for three months before any fæcal matter was observed to pass by the same channel. He was greatly emaciated, and experienced great pain about the neck of the bladder. Right colotomy was performed, and death occurred suddenly on the tenth day.

Post-mortem.—There was a tight stricture of the rectum, above which three apertures led into a fæcal abscess above the bladder. The abscess also opened freely into the bladder, and by small apertures into the ileum and cæcum.

48.—*Communication between Large Intestine and Bladder.*

By Dr. W. Goodell.

("Philadelphia Medical Times," 1883, p. 514.)

A woman for four years had suffered much from vesical tenesmus. She often passed wind by the urethra, and seeds of raspberries, tomatoes, and pears by the same channel. At one time she voided much of her urine by the rectum.

Two stones were found in the bladder, and after their removal all symptoms of fistulous communication cleared up and the patient got well.

49.—*Communication between Small Intestine (?) and Bladder.*

By W. H. Parrist.

("Philadelphia Medical Times," 1883, p. 515.)

A case resulting from an attempt at abortion and consequent cellulitis. After long-continued pelvic symptoms food commenced to pass through the

bladder. The food which was thus passed was incompletely digested.

50.—*Communication between the upper part of the Rectum or Sigmoid Flexure and the Bladder.*

By Dumesnil.

("Revue de Chirurgie," 1884, p. 241.)

F. M., aged 25, had had a difficult confinement, having been three days in labour. She kept her bed for four months. She had much pelvic pain, but there was no evidence of an abscess bursting. On recovery she had slight symptoms of stricture of the bowel. These were much aggravated by a second confinement later on. For the last year, in addition to symptoms of intestinal stricture, she has had bladder trouble, which consisted first in the passage of air, but latterly of fæcal material by the urethra. Occasionally little hardened nodules of fæces the size of a haricot-bean pass by the urethra.

It could not be made out that urine ever passed by the anus. Examination, both by the rectum and vagina, were negative. She suffered greatly, and was emaciating rapidly. Dumesnil performed colotomy, with result of completely arresting the passage of fæces through the bladder.

The patient, however, died six weeks after from erysipelas. No post-mortem.

51.—*Communication between Small Intestine and Bladder.*

By J. Croft.

("Lancet," 1885, vol. i. p. 1164.)

February 4, 1885.—J. R., aged 60, was admitted into St. Thomas's Hospital, with the history that he had been healthy until six weeks previously. He then, for the first time, felt pain on micturition. A fortnight later the urine became thick with sediment and of a port-wine colour. He passes water very frequently, and had rapidly lost flesh. The urine is acid; no albumen; it has a thick, yellowish-brown colour, and deposits a copious sediment. Under the microscope it shows pus and vegetable fibres. He emaciated very rapidly, became delirious, and died on February 27.

Post-mortem.—Signs of general peritonitis were present. A fistulous communication was found between the bladder and the ileum, both parts being firmly adherent. In the portion of the ileum examined typical tubercular ulcers were found. There was also tubercular disease of the lungs.

52.—*Communication between Rectum and Bladder.*

By Author.

In 1884 I was asked to see a gentleman, 69 years old. He had never enjoyed very good health, and was of a somewhat hypochondriacal disposition. For more than twenty years he had suffered occasionally from irregularity of the bowels, at times

being constipated for a week or more, which would be followed by a copious solid motion.

He dates his present illness from about a year ago, when he was laid up in Italy for some febrile disturbance, accompanied by much pain in the left iliac region. Since that time the constipation has been more marked. On first getting up in the morning he has desire for stool, but often only passes gelatinous-looking mucus. The amount varies much, being sometimes slight, at others considerable. It is generally fairly clear, but occasionally stained with fæcal material. He is often constipated, but at other times requires to go to the closet several times a day, passing a loose motion without a sense of relief. He very rarely passes any blood, and often feels discomfort about the lower part of the bowel, but has little actual pain. He is much troubled with wind, has lost flesh during the last year, and markedly so during the last ten weeks. Appetite good, but he very easily gets fatigued.

Examination under Chloroform.—The anus was normal, with a weak sphincter, but the bowel itself, as far as the finger could reach, was quite healthy. In front of the anterior wall, about the position of the base of the bladder, was a large, firm, oval swelling, feeling not unlike a cricket-ball, in the bladder. It appeared to be behind the prostate, and obviously caused obstruction to the rectum by its pressure.

Taking into consideration the history of the case, combined with the progressive loss of strength and flesh, together with the hard, large nature of the swelling, I concluded that he was suffering from

malignant disease, either of the prostate or of the structures between it and the rectum, and consequently gave a very unfavourable prognosis. I never again had an opportunity of examining the rectum, for the patient, owing to his highly nervous condition, refused an examination.

During the next year I saw the patient on two or three occasions, but am chiefly indebted to my friend, Dr. Montague Smith, who was in constant attendance, for the particulars of the case. Writing in January 1885, Dr. Smith says: "I have given up the use of enemata, as they worried the patient, without doing much good, and his bowels act comfortably under gentle aperients. His chief trouble is flatulence and nocturnal diuresis. This latter I cannot account for. Last night, for instance, he filled two chamber-pots, and this has occurred on several occasions. There is no pain or uneasiness either on passing it or afterwards. It comes away in a full stream, it is pale in colour, and not offensive. There is one rather curious symptom he has recently developed—that is, the occasional passage of air from the penis, but there is no smell with it."

Three months later Dr. Smith says: "Air very seldom passes by the penis. What I have seen has only been a little frothy mucus. The bowels still keep open, and the motions are well-formed."

Matters went on with little change during the whole of the year 1885. Occasionally the bowels were constipated for a fortnight at a time, but the condition did not cause any great distress. Towards the latter part of the year wind was passed more frequently by the penis, and the urine had a distinctly

fæcal smell, with a dusky deposit, and at times contained blood-clot.

At the beginning of 1886, nearly a year and a half after I had first seen the patient, I was again asked my opinion as to whether I still considered the disease to be malignant. At this time his appetite was good, he had plenty of strength, the emaciation had apparently ceased, he had comparatively little trouble with the bowel, but suffered from a certain amount of cystitis. I was not allowed to make any rectal examination; but, considering that his general condition seemed to be better than it had been a year and a half before—indeed, one would say there had been an improvement during the last few months—I had grave doubts whether my original diagnosis of cancer had been correct, and expressed a more favourable view of the case. I considered that the enlargement I had originally felt about the prostate might have been a fibroid enlargement, or possibly inflammatory. It is right to say, however, that Dr. Montague Smith, who was in daily attendance, still considered the disease malignant.

During the first half of the year 1886 the patient's condition remained stationary, or, if anything, improved. Towards the end of the summer, however, the urinary trouble suddenly increased, together with the difficulty in his evacuations, and he died in a few weeks.

The post-mortem examination showed cancer of the posterior part of the prostate, which had also extended into the cellular tissue around the rectum, causing almost complete occlusion of the bowel.

53.—*Communication between the Large Intestine and Bladder.*

By Author.

A gentleman, aged 50, was sent to me by my friend and colleague, Dr. Norman Moore. For some few months he had had some uneasiness, scarcely amounting to pain, in the neighbourhood of the rectum. He once or twice passed a little blood, but nothing of any importance. Careful examination of the rectum showed nothing abnormal, and nothing could be found to account for the hæmorrhage or pain. Some simple treatment was suggested, and the patient advised to take a long holiday, as he complained of overwork. The patient called again three months later. He stated that the uneasiness about the bowel was better, but nevertheless he did not feel particularly strong, and complained that during the last few weeks he had had some irritability about the bladder, requiring to pass water more frequently than usual. The urine was acid. I again examined the bowel, and at the same time sounded the bladder for stone. Nothing abnormal could be found in either. The patient was again seen three months later (February). He still thought the bowel was less uneasy than when he first called six months previously. The water, he stated, varied. For several days he would have no trouble, then for a day or two slight irritability. The water was clear, with an acid reaction. He complained that his general health was not improved, and he soon got tired, and his appetite was capricious, while he had undoubtedly lost flesh.

Upon examining the rectum after an injection, I fancied I could feel some unnatural hardness high up the bowel. The bowel itself, so far as the finger could reach, was certainly healthy, but the hardness referred to seemed as if in some structure external to the gut.

March.—The patient sent for me in a state of great anxiety, on account of his having passed some flatus through the penis. A few days later, the symptoms continuing, in order to verify the fact I made him pass water while sitting in a hip-bath, and in this way was able to demonstrate beyond all doubt, by the passage of bubbles, that air actually escaped in considerable quantity from the penis.

April.—During the last week or two the bladder has been very irritable, and he is constantly disturbed at night. The water has still an acid reaction, but is thick, and deposits a fine brown sediment. Towards the end of the month he almost suddenly commenced to pass fæces in a large quantity by the penis. He suffered acute pain, the water occasionally stopping from the blocking up of the passage. Much of the fæcal material was intimately mixed with the urine, which passed like pea-soup, with a good deal of fæcal matter of a putty-like consistency. During this time the bowels were irregular. Some days he was rather constipated, in others having diarrhœa. He was wasting rapidly, his sufferings being very acute. At this time a thorough examination was made under an anæsthetic, Sir James Paget and Dr. Norman Moore being present. The hardness referred to was distinctly felt up the bowel, and appeared like the lower border of a tumour situated somewhere in the

pelvis. Milk injected through a catheter into the bladder was retained, and did not pass into the rectum.

During the next few days the catheter had frequently to be used, and some temporary relief was obtained by washing out the bowel through a long india-rubber tube, but nothing afforded any substantial relief to his acute suffering. Colotomy was proposed and accepted as a probable means of diverting the fæces from the bladder. In May I performed the usual operation of colotomy, assisted by Mr. Bowlby. On the fourth day after the operation the urine was almost free from fæcal material, and the irritability of the bowel much diminished. Day by day he grew slightly weaker, but the colotomy wound did well, and all the fæces passed through it. On the day following the operation he passed a small quantity of blood by the rectum, and with it two gelatinous fleshy-looking lumps the size of small walnuts. Sections from these under the microscope showed beautiful specimens of adenoid cancer. The bits must undoubtedly have been broken off during the manipulation of placing him in the proper position for colotomy on a hard pillow.

The patient gradually sank, and died the end of the first week in June. From the third day of the colotomy all fæces were passed by the wound, and he was almost entirely free from the agonizing pain he had previously suffered. No post-mortem could be obtained.

54.—*Communication between Intestine and Bladder.*

By Author.

The following case I attended with Dr. J. S. Salter, of Tolleshunt d'Arcy, to whom I am indebted for the particulars.

"The patient, a married lady 69 years of age, without family, had enjoyed pretty good health till two years ago. At that time she began to be attacked by abdominal pains, accompanied by diarrhœa, with mucous and sanguineous discharge at times. A year ago she was much alarmed by a sudden passage of blood from the bladder. It followed sudden pain, and the blood continued in small quantities for a day or two, and some currant-seeds were discovered in the urine. After this fæcal matter in very minute quantities intermittently passed from the bladder. Sometimes there was none for a week, once the period was a fortnight, but never longer. There is always more or less pain, reduced sometimes to mere discomfort, in the region of the bladder. At present there is no cystitis. Lately the general health has improved, and after several months' confinement to bed she now sits up. There is no suspicion of malignancy, though she has lately drawn my attention to a growing tumour on the right breast."

55.—*Communication between Rectum and Bladder.*

(St. Bartholomew's Hospital Museum, Specimen 2071.)

A malignant growth, starting from the rectum, has made its way into the bladder. A free communication exists between the bladder and the rectum.

The disease was of two years' duration, and proved fatal from repeated hæmorrhages.

56.—*Communication between Rectum and Bladder.*

By J. F. Goodhart.

(Royal College of Surgeons. Specimen 2583.)

From a patient who for some six or seven months before death occasionally passed flatus through the penis. At the post-mortem a malignant growth between the bladder and rectum was found with a perforation between them.

57.—*Communication between Rectum and Bladder.*

By Hunter.

(Royal College of Surgeons, London. Specimen 2584.)

A case of communication between rectum and bladder from malignant disease. No history given.

58.—*Communication between Bladder and Rectum.*

By Sir W. Blizzard.

(Royal College of Surgeons, London. Specimen 2585.)

A wide communication between bladder and rectum, the result of malignant disease.

59.—*Communication between Sigmoid Flexure and Bladder.*

(Fort Pitt Museum, Chatham. Specimen 1766.)

A large abscess cavity, situated outside the bladder, in contact with its upper and back part. The sac communicated with the bladder by two openings, situated to the inner side of the right ureter. The sigmoid flexure adhered to the sac, and communicated

with it by a large irregular opening. A small irregular piece of bone is seen in the abscess cavity.

60.—*Communication between Rectum and Bladder.*

(St. Bartholomew's Hospital Museum. Specimen No. 2057.)

Portion of a rectum; its coats are greatly thickened, indurated, and consolidated with each other and with surrounding parts. Just above the anus there are numerous ulcerated apertures, which are the openings of short fistulous canals. One of these canals extends into the cavity of the bladder.

61.—*Communication between Rectum and Bladder.*

By Henry James.

(St. Bartholomew's Hospital Museum. Specimen 2056.)

The surface of the rectum, about eight inches from the anus, is extensively and deeply ulcerated; and at one part the ulceration has spread through the thickened and indurated tissue, connecting the bladder and the rectum so as to form a wide communication between them. The patient, a man aged 85, died with asthma. He had not complained of any affection of the rectum or bladder till a week before his death, when he first noticed that air occasionally passed through the urethra. During the last week of his life both air and fæces passed with his urine, the latter in small masses, about the size of peas.

62.—*Communication between Rectum and Bladder.*

By Howship.

(Royal College of Surgeons, London. Specimen 2589.)

A case of communication between the rectum and bladder. No history.

63.—*Communication between Rectum and Bladder.*

(Fort Pitt Museum, Chatham. Specimen No. 1767.)

Sac of a large abscess, situated on the left side, between the bladder and rectum, communicating with former by an opening capable of admitting a common quill above and between the entrance of the ureters. The surface of the rectum is very irregular and much ulcerated, and communicates with the sac by five large openings, the consequence of dysentery of four months' standing.

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* This interesting case was accidentally omitted from Appendix.

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