Growths of the pelvic colon are dealt with by ligating the inferior mesenteric artery below the origin of the left colic and excising most of the sigmoid loop with mesentery and contained glands.

Though the colon frequently has no proper mesentery in its ascending and descending parts, and at the hepatic and splenic flexures, yet it can be mobilized sufficiently to bring it out of the abdomen by cutting through the peritoneum as it is reflected from the outer side on to the posterior abdominal wall. Care has to be taken to avoid injury to such important structures as the duodenum, ureter, vena cava, and spermatic vessels.

Though in suitable cases—the number of which should increase considerably as we diagnose the condition earlier—these operations are to be carried out, yet practical experience has shown that good results can be obtained by a more limited operation. Many operators have reported cases in which they excised the local growth, but left enlarged lymphatic glands, and yet the patient kept well for many years. In some of these cases the glands were probably inflammatory; but doubtless there are some cases where the tissues of the individual can overcome the migrating cancer cells. Lockhart Mummery, in thirty cases where he looked for enlarged glands at operation, found the mesocolic glands enlarged in five, and the retroperitoneal in two instances, whilst two cases had metastases in the liver.

With a limited excision the cancerous segment is removed along with a sufficient margin of healthy bowel on each side. Regard must be paid to the blood supply of the bowel which is left, and if this is imperilled more bowel must be removed. The procedure may be performed in one or more stages.

Operation in One Stage.

This is never admissible unless the bowel can be well emptied beforehand. There is not a consensus of opinion as to the best way of dealing with the severed ends of the bowel after the diseased segment has been excised. In theory the ideal method would be to perform end-to-end suture, and this has been done with success. But such a method has several drawbacks when applied to the large intestine; the sacculation of the bowel, the presence of appendices epiploicae, and the absence of a complete peritoneal investment may render it difficult, added to which in some parts the suture line will have to stand the strain and irritation of solid faeces. If there has been marked obstruction, the difference in calibre between the proximal and distal ends may be considerable. End-to-end union is more suitable for those cases in which a colostomy has previously been done for obstruction; this obviates any strain on the suture line.

Another method is to excise the diseased part, close the cut ends, and perform lateral anastomosis between the proximal and distal segments. Mayo⁵ says that such anastomosis should always be isoperistaltic in dealing with the colon. Leakage may occur from the closed ends and cause peritoneal infection; to avoid any risk of this, Bloodgood⁶ has suggested bringing the closed ends out of the abdomen. End-to-end union by means of a Murphy button has been performed occasionally with success, but this would now hardly be considered sound surgery.

In excision of the caecum or right half of the colon the best plan is to cut across the ileum near its termination and implant it laterally into the transverse or pelvic colon.

Operation in more than One Stage.

By operating in two or three stages the mortality has been more than halved. One of the safest and best known methods is that devised by Paul of Liverpool, who practically made the operation an extraperitoneal one. The affected loop of gut is brought outside the abdomen, and the vessels in its mesentery ligated. The mesentery is then cut across, and the proximal and distal portions of the loop sutured together. The portion requiring excision is then cut away and a glass tube inserted into each end to drain away the intestinal contents. Later the spur between the two ends is crushed and the continuity of the gut re-established. The artificial anus left after crushing the spur can be closed by a later plastic operation. The primary operation can be modified by leaving the excision

of the cancerous portion till a few days after bringing the loop of intestine outside the abdomen. The drawback to Paul's operation is that only a limited segment of mesentery with its contained glands can be removed.

A type of two-stage operation which is sometimes carried out is that in which the affected segment is first short-circuited and later excised. The short-circuiting can be done by lateral implantation, or lateral anastomosis. This method provides a cleaner field of operation at the time of excision.

Cases with Obstruction.

When there is acute or subacute obstruction present, that condition must first be treated. A similar method is advisable when the bowel cannot be properly emptied before operation. In a case of acute obstruction the part behind the stricture is filled with bacterial toxins, which not only poison the patient but render impossible any radical operation involving suture of intestine. In such cases the immediate indication is to perform caecostomy or colostomy above the obstruction, and later excise by one of the above-mentioned methods.

In some cases presenting marked obstructive symptoms Paul's operation may be carried out.

In those cases which have progressed too far for excision to be practicable or advisable, surgery does not need to step in unless symptoms of obstruction are threatening or some special complication exists. Obstruction is treated by short-circuiting the strictured part or opening the bowel above it. Occasionally bilateral exclusion may be deemed advisable; in this the bowel is cut across above and below the neoplasm, between it and the site of lateral anastomosis which has been previously performed. One end of the excluded portion is brought to the surface so as to drain away the foul contents, which if retained may lead to distension and leakage into the peritoneal cavity. The other end is either closed or also brought to the surface.

If local peritonitis, abscess formation, or general peritonitis result from carcinoma of the colon such conditions must be treated first, and the growth excised or short-circuited later if the patient recovers from the complication.

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- ⁴ W. B. Cannon, *The Mechanical Factors of Digestion*, chap. xii.
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APPENDICITIS :

THE RESULTS OF OPERATIONS UPON 619 CASES.

By W. G. RICHARDSON, M.B., F.R.C.S.,

SENIOR ASSISTANT SURGEON, ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE; CONSULTING SURGEON TO THE ALNWICK INFIRMARY.

I wish to record here the lessons to be derived from the results in 619 cases of appendicitis submitted to operation. I have divided the cases into several classes, each of which includes a well-marked group.

1. "Interval" Cases.

This includes those cases in which there had been one or more attacks of appendicitis and in which the operations were performed while there was no active inflammation. It does not include any cases in which the appendix was removed in the course of an abdominal section performed for some other condition, merely because it was an appendix. Such removal of the appendix does not appear to me to be either a wise or justifiable procedure. There were 113 cases and no deaths.

2. Acute Cases.

(a) *Early cases*, in which the inflammation was confined to the appendix itself. The appendix was removed in each case, but no drainage of the wound was necessary. There were 63 cases and no deaths.

(b) *Later cases*, in which there was localized peritonitis. In all of these cases the appendix was removed and drainage of the wound was necessary. There were 93 cases and 2 deaths.

3. Abscess Cases.

(a) Cases in which the abscess was localized. In all these the appendix was removed and the wound drained. There were 274 cases and 11 deaths.

(b) Cases in which the abscess was localized and was drained, the appendix *not* being removed. These include some cases in which the abscess was bulging into the rectum and was opened per rectum; others in which, on account of the size of the swelling, it was not thought advisable to search for the appendix; and others in which, on account of the density of the adhesions, the same treatment was adopted. There were 25 cases and 1 death.

4. Acute Cases with General Peritonitis.

(a) Cases in which the appendix was gangrenous and had given rise to general septic peritonitis, *without* the formation of a local abscess—that is, “fulminating” cases. In all these the appendix was removed and the wound drained. There were 29 cases and 20 deaths.

(b) Similar cases, with the complication of an abscess, and in which the appendix was removed and the wound drained. There were 20 cases and 14 deaths.

(c) Cases in which the patient was so ill that the peritoneal cavity alone was drained. There were 2 cases and 2 deaths.

By arranging the cases, as in the following table, according to this classification it will be seen that there is

TABLE I.

	Cases.	Deaths.	Per Cent.
1. "INTERVAL" CASES	113	0	Nil
2. ACUTE CASES:			
(a) Early: Appendix removed, wound not drained	63	0	Nil
(b) Later: Appendix removed, wound drained	93	2	2.1
	156	2	1.28
3. ABSCESS CASES:			
(a) Appendix removed, wound drained	274	11	4
(b) Appendix <i>not</i> removed, wound drained	25	1	4
	299	12	4
4. GENERAL PERITONITIS:			
(a) "Fulminating" cases: Appendix removed, wound drained	29	20	69
(b) With localized abscess: Appendix removed, wound drained	20	14	70
(c) Very ill: Peritoneal cavity drained	2	2	100
	51	36	72.5
Total	619	50	8.1

a rise in the relative mortality which followed operations as they were performed during later and later stages of the disease.

The age incidence is most clearly seen in the chart, in which the horizontal lines represent the number of cases, and the vertical lines the age of the patients. From this it will be seen that the largest number occurred amongst those of 20 years of age, and that more than half of the total number of patients were between the ages of 15 and 28 years (330 out of 619).

Here, then, is a story of steadily advancing mortality in exact relation to the stage at which the inflammatory process had arrived before the appendix was operated upon. There is nothing new in such a tale. It has been told repeatedly, and yet there does not seem to be any diminution in the number of fatal cases. How are we to account for that? I believe that there are several reasons.

1. Many patients do not call in a doctor until complications have already arisen.

2. It is, perhaps, not fully realized that the highest mortality occurs amongst cases which have a very mild onset.

3. Most of the writing, both in textbooks and in periodicals, has reference to the treatment of the complications of appendicitis, rather than to appendicitis itself, so that, in the minds of many, these complications are regarded as though they were actual symptoms of the disease.

4. Many medical men have a habit of looking for certain well-known and true symptoms of appendicitis, and they expect that all those symptoms must necessarily be present in each case before a definite diagnosis can be made.

In the case of young children one is often told that the attack began very suddenly, perhaps the evening before the child is seen, and that the child vomited and complained of pain in the right iliac region. It is looked upon as in every way a typical attack, of an acute kind, and, the child being obviously ill, the appendix is removed without delay. At the operation in such a case one finds an acutely inflamed, perforated, or even gangrenous appendix. In almost all such cases in young children, if inquiry be made, it is found that the child has been “peevish” for a day or two before the onset of pain; it has not taken its food well, and has been generally “out of sorts.” I have operated upon many such children, even within a few hours of the onset of acute symptoms, and the condition of the appendix has been such that it was impossible to believe that so much destruction could be effected in so short a time. Apparently, in children, acute appendicitis begins as an inflammation of the mucous membrane, exactly the same as acute tonsillitis, and the child is similarly ill. Doubtless if the appendix were palpated it would be found to be tender, but there is

no complaint made of any local abdominal pain or tenderness until the inflammation reaches the peritoneal coat of the appendix. When it has extended so far, then, and apparently not till then, the child complains of pain; it vomits and has the symptoms which we associate with septic infection of the peritoneum. It thus comes about that the mildness of the onset in many cases of acute appendicitis, especially in children, is a great danger, because the patient is first seen in an advanced stage of the disease, and that fact probably contributes largely to the high rate of mortality which follows operations upon children. There are two other causes of delay. One is due to the stress which, in textbooks, is laid upon what are undoubtedly the symptoms of acute appendicitis in a typical case. The description of symptoms is accurate in so far as it deals with that class of case, but, unfortunately, typical cases are not the most common, and when it is applied to mild cases it is a source of danger. It tends to make an inexperienced man think that his patient is not very ill if the symptoms are so much less marked than those which he has been taught to watch. To show that it is not an imaginary danger, I have recently had experience in a case in which I operated and removed a perforated appendix from a man seen the previous evening by a physician who had recommended that no operation should be done, on the grounds that the patient "was feeling better," the pulse was normal, and the temperature only raised one degree.

Another error arises from what one can only regard as an unfortunate necessity; I allude to the necessity for dealing very fully in textbooks with the symptoms of abscess, of general peritonitis, and the various complications which follow acute inflammation of the appendix. I would not have such description curtailed, but I think that stress should also be laid upon the fact that abscesses, peritonitis, etc., are complications, and may be prevented. It should be clearly and incessantly pointed out that they are not symptoms of appendicitis, but sure signs that other tissues than the appendix have become involved in consequence of the original mischief having extended beyond the appendix, and when that occurs all the symptoms of pure appendicitis become obscured by the graver symptoms of the complicating lesion.

Except in the case of those patients who call in the help of a medical man after complications, such as an abscess, have developed, all patients with diagnosed acute appendicitis should have the appendix removed before there is time for such complications to arise.

Unless one sees the extraordinarily advanced stage of inflammation, and even of sloughing, which the appendix may reach in cases in which the patient shows no outward evidence of any serious lesion, one cannot appreciate the danger that must inevitably attend expectant treatment. I have seen many cases in which the appendix was either perforated or gangrenous, and yet the patients have not looked ill, others in which the temperature and pulse were normal, and one in which the patient, in order to demonstrate to me that I had made a mistake in advising an immediate operation, "punched" himself in the abdomen directly over the region from which in an hour was removed a perforated appendix which had already given rise to an abscess.

I believe that it is possible to avoid disasters by the application of a few clinical rules which I have used for many years.

DIAGNOSIS.

In a typical case of appendicitis the symptoms are as follows: The patient has a sudden attack of abdominal pain, before long he vomits, and in the course of a few hours the pain becomes localized in the right iliac region. He looks ill, and therefore a doctor is called in. When the doctor arrives, he hears that history, and he himself observes, first, that the patient has an anxious expression—"sunken-eyed" or "drawn." Secondly, there is some rigidity of the whole abdomen, but the rigidity is most marked in the right iliac region, in which, on pressure, tenderness is found. Thirdly, the temperature is elevated a little—rarely more than one or two degrees. Fourthly, the pulse-rate is accelerated to about 90 beats per minute.

He only *hears* about the manner of the onset, of the epigastric pain, the vomiting, and why he was sent for. What he *observes* is:

1. The general appearance and expression.
2. The rigidity and local tenderness.
3. The temperature.
4. The pulse-rate.

The value of the observations may be small in themselves, but when taken in conjunction with the history they are of the greatest importance. Similarly, the history, when taken by itself and without observation of other symptoms, may not be enough to justify a diagnosis. It is the combination and association of the two which is of importance.

1. *General Expression.*—The fact that a patient looks perfectly well is not a reason for thinking that there is not acute appendicitis. The "sunken-eyed" expression, when present, is indicative of a very acute attack, but its absence does not necessarily mean the contrary.

2. *Local Tenderness and Rigidity.*—Rigidity may be so extreme as to make it impossible to ascertain whether there is any tenderness of the appendix. The rigidity may also be as marked on the left side as on the right. On the other hand, it may be altogether absent, even in cases in which the appendix is gangrenous. Tenderness of the appendix itself is the most important symptom of all. Much of the difficulty in diagnosis is due to the fact that the appendix does not always lie in the same situation. It may be found up against the gall bladder, or even in the left iliac region. It may be wholly in the true pelvis or hidden behind the caecum. Frequently only part of the organ is acutely inflamed, and in such cases the tender point varies greatly, according to whether the proximal or the distal portion is the part affected. In the former case tenderness is usually in the right iliac fossa, whilst in the latter it may be scarcely ascertainable, because the tip of the appendix is almost out of reach, low down in the pelvis. Without tenderness of the appendix it is impossible to arrive at a sure diagnosis. The amount of tenderness varies greatly with the position in which the appendix lies. If it lies in the iliac fossa, with a resisting background, then tenderness is easily elicited; but if it lies over the pelvic brim, pressure upon the appendix is warded off by soft structures, and the tenderness may be so slight as to be overlooked. This is a common cause of mistake in diagnosis or of delay in arriving at a diagnosis, especially as little or no help is derived from a rectal examination in such cases. A localized abscess or a localized peritonitis can be discovered by examining the pelvis per rectum, but rarely an acutely inflamed appendix which has not given rise to such complications.

3. *The Temperature.*—This is a very variable symptom. It may be normal or it may range even to 105°. It is rare to find the temperature more than 102°. Between 99° and 101° is that usually met. It is of all symptoms the least to be relied on, inasmuch as it is commonly expected and frequently absent. If elevation of temperature is present it helps to confirm the diagnosis, but the fact that it is normal never warrants the opinion that therefore the appendix is not acutely inflamed.

4. *The Pulse-rate.*—This also is a symptom which, in the early stages of appendicitis, is not of importance. If the temperature is raised the pulse will rise in proportion. It is in the later stages that the pulse-rate is of the most value as an indication of how things are progressing, but in the early stages the pulse may be unaffected. A few years ago I operated upon a man for acute appendicitis, and six months later upon his son. The father had a pulse of 54 and the son's pulse was 58.

These, then, are the "cardinal symptoms" of acute appendicitis.

Unfortunately, the majority of cases are not as easy of diagnosis as are those which are known as "typical." Let us suppose that a doctor sees a case during the morning; he hears the history of the onset, and he notes the four cardinal symptoms. It is a mild case. What should he do? The wise course to follow, if he is sure of his diagnosis, is to advise the removal of the appendix forthwith; but, if he thinks differently, he should keep the patient in bed, apply hot fomentations to the painful area, and do nothing more. Sips of water may be given, but no food. On no account should morphine be given. If the pain is so severe as imperatively to demand morphine, the case is one for immediate operation, and the drug should only be given on the understanding that an operation is to

follow its administration. In the early stages of acute appendicitis morphine may give the appearance and feeling of perfect well-being to an urgent case, and it should never be given until a decision has been arrived at as to whether or not an operation is necessary. If an operation is not necessary, neither can morphine be. The patient must be seen again in the course of a few hours, and again the cardinal symptoms must be noted.

INDICATIONS FOR OPERATION.

If all the symptoms have not improved, or if any one of them has become more marked, the inflammation is not subsiding, and it is necessary to remove the appendix.

1. The patient may look well, the local tenderness may be slight, the temperature may be normal, but *if the pulse-rate continues to rise* (a fact to be ascertained by repeated countings) the appendix should be removed.
2. The patient may look well, the local tenderness may be slight, the pulse-rate may be slow, but *if the temperature has risen* the appendix should be removed.
3. The patient may look well and the temperature and pulse may both be normal, but *if the local tenderness has increased* the appendix should be removed.
4. The local tenderness may be slight, the temperature and pulse may both be normal, but *if the patient looks worse* the appendix should be removed.

If, using these rules as a guide, an operation is decided upon, it should be performed without delay. It cannot be right to allow such cases to wait until the following morning, any more than it would be right to allow a strangulated hernia or a ruptured gastric ulcer to wait. It will be noticed that I have only dealt with the symptoms of acute appendicitis itself, and that I have not regarded the symptoms which mark the complications developing in the later stages of the complaint. My object has been to draw attention to what are the symptoms of the initial lesion and to divert attention from symptoms which are produced by avoidable complications. The hope of preventing death from appendicitis can only be fulfilled by our removing the inflamed organ before it has time to infect the peritoneum.

Unfortunately, from one cause or another, either because the patient is first seen by a medical man after complications have arisen, or because an "expectant" line of treatment has been adopted, the majority of cases are operated upon more for the sake of combating complications than in order to prevent them. Of these 619 cases upon which I operated between January, 1900, and December, 1911, 113 were interval cases. Of the remaining 506 cases, 350 had already developed either an abscess or general peritonitis, 299 had abscesses, and 51 had general peritonitis.

The only complication to which I would make particular reference is that of a localized abscess. It is a common belief that it is necessary, before a confident diagnosis can be made, that we should be able to "feel" something in the appendix area. That is a most serious error. It should be generally known that a "lump" means an abscess. This, like all similar statements, is not invariably true; but it is so true that, unless some other cause can be assigned for the presence of the palpable swelling, it should in all cases be looked upon as an indication of the presence of pus.

Except in cases in which there is a palpable piece of oedematous omentum or in cases in which the appendix itself can be felt, I know of none to which the rule does not apply: that a palpable swelling which develops in the course of an attack of appendicitis indicates that there is pus—that is, an abscess.

It appears to me to be the duty of any surgeon who has had experience of the ill-effects of expectant treatment to do what he can to counteract it. The principles of expectant treatment are the principles upon which large numbers of the cases which are sent to hospital have been conducted. If it could be shown that expectant treatment had the effect of keeping the lesion localized, nothing more would be necessary to prove that expectant treat-

ment was sound, but the frequency with which general peritonitis develops whilst such treatment is being carried out is enough to condemn it. If we divide all cases into the two classes—those with a localized lesion and those with general peritonitis—and compare the results of operations upon those two classes, we obtain overwhelming proof of the danger that attends general peritonitis. Of my own cases, 506 were acute. Of those, the lesion was localized in 455, and 51 had general septic peritonitis. The difference in the mortality in the two classes is truly appalling, for, whereas in those in which the lesion was localized the death-rate was 3.07 per cent., amongst those in which general peritonitis had developed it was 72.5 per cent.

Deaths from acute appendicitis cannot be abolished by treatment on the expectant principle—it has an acknowledged mortality of 3.3 per cent.—and there does not appear to be much hope of improvement in the results of such treatment. On the other hand, the results of operative treatment afford abundant hope that, granted the cases be seen in good time by a medical man, all may be saved. If we treat the acutely inflamed appendix by operation and do not wait for complications to develop, there is no mortality, but if we treat the complications, some of which are certain to occasionally develop during expectant treatment, by operation the percentage of cases which die steadily increases with the severity of the complications. In this list it will be noticed that there were no deaths amongst the cases in which it was not necessary to drain the wound, but as soon as the necessity for drainage arose there was an attendant mortality, which is another way of saying that some complicating infection of the peritoneum had arisen.

The true surgical treatment of acute appendicitis may be summed up in this: It is the prevention and not the treatment of complications which is our aim.

Though a patient may recover without an operation, he is left with the prospect of another attack. The severity or mildness of an attack gives no sure guide to the seriousness of the lesion. The advocates of the waiting policy advise that the appendix should be removed when the attack has subsided. That, I am sure, is a wise thing to do, provided that, in the case of those who recover from a severe attack, a sufficiently long convalescence be allowed before appendicectomy be undertaken. In the case of those who have recovered from acute appendicitis with an abscess or with general peritonitis, six months is never too long a time. Such advice, however, involves a reply to the question, which must be answered before the parents will consent—namely, What is the likelihood, the patient having recovered from one attack, that another attack will occur? It is not enough to tell the parents that another attack *may* occur. Every one knows that is possible, but every one also knows of many cases in which there has been one attack only without any recurrence for many years afterwards. They wish to know whether it is certain to take place before they will agree to an operation being performed for the prevention of a problematical illness. No man is able to say what that probability is, and until we are in a position to assure people that one attack necessarily involves another they will frequently wait until another attack supervenes. It is not altogether a matter for congratulation when a patient recovers from an attack of appendicitis and still retains the originator of the trouble. He may hope that the feared attack will be as the former one, but it may be fatal.

The method of operating which I employ is by an oblique incision parallel to the crest of the ilium, and of such length as the case requires. In "interval" cases the incision is usually 4 or 5 in. long, and I never employ the muscle-splitting method, because it requires one to operate in a hole without a sufficient view. In abscess cases I avoid, if possible, division of the epigastric vessels and opening of the sheath of the rectus muscle. The incision is extended into the flank, sometimes a long way, and this has the double advantage of giving an excellent view and of affording good drainage. I generally use both a gauze and a rubber drain, which are brought out through the posterior extremity of the wound. The stump of the appendix is clamped, ligatured with catgut, and tucked in with a catgut purse-string suture.

I would not have it thought that I regard the diagnosis of acute appendicitis as free from difficulty. I am fully

alive to the immense difficulty that there is in many cases—so great as to make a sure diagnosis in some cases impossible, especially in stout people and in pregnant women. In the majority of instances, however, it is not because a diagnosis has not been made, but rather because, having been made, it has not been acted upon, that so many cases come to the surgeon with complications.

SPONTANEOUS REDUCTION OF INTUSSUSCEPTION.

BY

T. BONHÔTE HENDERSON, M.A., M.B.,
B.CH. OXON., F.R.C.S. ENG.,

ASSISTANT SURGEON TO THE SALISBURY INFIRMARY; LATE SURGICAL REGISTRAR TO THE CANCER HOSPITAL, BROMPTON.

SPONTANEOUS reduction of an intussusception in infancy is admitted by the textbooks to be a possibility, though stated to be a very rare occurrence. There is an obvious difficulty in forming a definite opinion on this point in that the proof of such a happy ending is necessarily absent owing to the disappearance of the intussusception. Until quite recently I have never seen any real amelioration of symptoms in this disease unless relieved by operative interference, but the following case upon retrospective study would appear to be a genuine exception to the usual course of events.

J. B., male, aged 13 months, previously healthy, with no history of intestinal disturbance. He was present at a juvenile tea party on April 8th, and, in the absence of his mother, was given quantities of unsuitable food and whole strawberry jam. He passed a restless night, and next morning had some diarrhoea. On the same day I was urgently sent for at 2 p.m., and was told that the child had been seized with frequent and violent attacks of abdominal colic, several of which had been so severe that he had literally stood on his head, boring into the pillow and screaming out with pain. The diarrhoea continued, the stools being thin and offensive and accompanied by a quantity of mucus, but no blood. There had been no vomiting.

The child was white, restless, not intensely collapsed, but with a small, quick pulse, and a marked expression of abdominal distress; every few minutes he obviously had abdominal pain. The abdomen was hard and resistant, a little distended, and everywhere highly resonant. No tumour was felt and the rectum was empty. This examination being highly unsatisfactory owing to rigidity, and it being very desirable to make a diagnosis, if possible, I returned at 4 p.m. with my partner to give an anesthetic in the hope of settling the question. I found the child very much better, with lessening pain, returning colour, and an improved pulse. It was decided that an intussusception was improbable, and an anaesthetic was not given, it being determined to watch the child closely. The improvement was maintained, and in the course of a few days on a rigid diet with the cautious use of small doses of castor oil, the child recovered his usual health.

Some six weeks later, on May 21st, a similar attack took place, of corresponding severity, but on this occasion there was no diarrhoea, only a little blood and mucus being discharged from the bowel. There was no vomiting, and again no tumour could be felt in the rectum or abdomen. With the history of the former attack in one's mind and the recovery therefrom, and with the child close at hand under immediate observation, it seemed justifiable to again adopt expectant treatment. This was again attended by success. The bowels were opened with difficulty, the stools being constipated, but free from blood, and the abdominal pains disappeared, except at very rare intervals.

All went well for five days. On May 26th I received again an urgent message to see the child, whom the parents thought to be dying. This time the clinical picture of acute intussusception was to be read in the child's appearance. The collapse was of that degree of profundity which is associated with this lesion in infancy and which once seen is never forgotten. The child lay motionless, colourless, hollow-eyed, and apparently moribund, the recurring abdominal pains momentarily restoring the

appearance of life. All this was well within an hour from the first onset. Blood and mucus had again been passed, and vomiting had commenced. The child was at once taken to a nursing home. On opening the abdomen some hour and a half later a little clear serous fluid escaped. A quite recent intussusception, some seven or eight inches in length, was found in the left iliac fossa, which I had no difficulty in reducing. It was apparently of the ileo-caecal variety. The abdomen was rapidly closed with through and through sutures of one layer only, and the patient returned to bed certainly much better than before the operation. The after-history was uneventful and the recovery uninterrupted, small doses of opium (tinct. camphorae co., m v) being freely used for the first three days.

The presence of a congenital umbilical hernia did not lessen the difficulties of diagnosis in the first two attacks. This was always reducible, but the possibility that a small piece of omentum might be nipped had to be borne in mind. The hernia was not interfered with at the operation, but curiously enough it has not reappeared, the empty flaccid sac lying on the abdominal wall.

My personal conviction is that the first two attacks were undoubtedly due to the commencement of an intussusception, which in each case was spontaneously reduced—completely so in the first attack, perhaps incompletely in the second, in spite of the fact that reduction at the operation was easily effected, and that the intussusception appeared to be a recent one.

The third attack alone showed the full degree of collapse which one is accustomed to expect, but there can be no doubt that this degree depends upon (a) the length of bowel involved, and (b) the amount of tension and compression of the mesentery.

A CASE OF FRACTURED PELVIS COMPLICATED BY LACERATION OF THE FEMORAL VEIN TREATED BY LATERAL VEIN SUTURE.

BY

MANFRED MORITZ, B.A. CANTAB., M.B., CH.B. VICT.,
SENIOR HOUSE-SURGEON TO MR. A. H. BURGESS AT THE
MANCHESTER ROYAL INFIRMARY.

THE following case possessed characteristics which were deemed worthy of report:

J. C., a clerk, aged 35, was admitted to the Manchester Royal Infirmary with a history that he had been jammed between a lorry and a gate post at a railway station goods yard. The strain was apparently slightly oblique from right to left and oblique from before backwards.

The patient stated that on freeing himself he walked thirty yards or so; he was then seized with acute pain in the right groin and collapsed.

Condition on Admission.—The patient, who was admitted one hour after the accident, was a well-built man, but looked anaemic and ill. Respirations were quick and sighing, and he was very restless though fully conscious; the pulse was 120 and thin; the temperature was 97° F.

On inspecting the abdomen and groins a large swelling about the size of a melon was seen, filling up and mapping out Scarpa's triangle on the right side. The integument over this was of a mottled purple colour. The swelling was non-expansile, soft, and fluctuant. It had a feeling as if there was very little tension in the tumour, and was tender. The pulse could be felt perfectly well in the posterior tibial artery at the ankle, and was also quite palpable in the popliteal space. There was a slight impulse on coughing and straining. On jarring the crests of the ilia there was exquisite pain. Rectal examination revealed great tenderness and a bony prominence in the region of the pubic crest on the right side. The abdomen moved well on respiration, was soft, and not tender, and was resonant in the flanks. A soft Jacques catheter was passed, and 12 oz. of normal urine drawn off.

Diagnosis.

The history of the accident, the rapidity with which the swelling had appeared, and the fluctuant feel of the tumour led one to a diagnosis of haematoma. The absence of expansile impulse, the presence of the pulse at the ankle, the soft non-tense feel of the tumour made it most probable that it was of venous rather than arterial origin. The results of the rectal examination and the great pain on jarring the hips showed that the pelvis was fractured.

Operation.

The man's condition was so urgent that the resident surgical officer, Mr. Howard Buck, F.R.C.S., decided on immediate operation.