small intestine had been resected, and the gut united by a Murphy's button at a point 2 ft. above the ileo-caecal valve. Below the button the peritoneal surface of the small intestine was coated with a thick layer of plastic lymph. The intestinal walls were injected, and the mucous membrane above the button showed patches of erosion, ulceration, and injection up to the jejunum-duodenal junction. The intestinal mucous membrane below the button was deeply stained with blood pigment. No cause was found for the intussusception. The mucosa of the urethra was injected, but there was neither stricture, pus, nor ulceration. The joints of the extremities were free from swelling or oedema, and there was no impairment of their mobility. The prostate was natural. The vesiculae seminales were distended with mucoid fluid of a greenish hue; there was no pus. A white fluid could be expressed from the prostate, and a yellowish excretion from the ejaculatory ducts. The testes looked healthy.

We learn several lessons from these cases. The first and most important is never to be so sure of the accuracy of a diagnosis as to be unable to revise it, and act in a wholly different manner when this has been done. Both in diseases of the joints and in the surgical affections of the abdomen we are too apt to act upon preconceived ideas, and when once a name has been given to a patient's condition we are very likely to rest content, and to treat the name rather than the disease. In the case of joint disease no harm is done in most cases, because they are chronic; but in abdominal cases the mischief may end fatally before the error is discovered.

The second great lesson to be learnt is the need to examine the affected part carefully and frequently. Too great stress is laid upon the symptoms, and too little upon the signs of disease. The symptoms are more often misleading than the signs, but the signs themselves need careful interpretation in a difficult case. Examination of the abdomen will prevent a strangulated hernia being treated by purgatives, as was done by John Ranby in the case of Caroline, Queen of George II; it will show the existence of appendicitis when only the slightest indications are given by the pulse, temperature, aspect and condition of the bowels; it will even prevent a case of cancer of the large intestine or a leaking gastric ulcer being dealt with as colic. The worst mistakes I have seen are those caused by want of examination. I would therefore emphasize the necessity for a methodical examination in every case of abdominal inflammation.

It is clear, too, from a consideration of the cases here detailed, that an endeavour should always be made to find some physical cause for the symptoms of which the patient complains. Neuralgia and hysteria are still used too commonly in a purely abstract sense, when a more thorough knowledge would prove that there exists an underlying cause which being left is exaggerated, but being removed leads to cure.

There are other lessons to which I could draw your attention did time permit, but one of the objects of our meeting this evening is to inaugurate the formation of the Harrow Section of the Watford and Harrow Division of the British Medical Association. I am instructed, therefore, to point out to you the advantages which are to be derived from membership of so large and flourishing an organization. It has many advantages and some disadvantages; I will briefly draw your attention to both. The advantages come first, because, in my opinion, they far outweigh the disadvantages. By joining the Association you become members of a body which is numerically strong and financially rich, two important factors in the formation of the *esprit de corps* in which our profession is often said to be lacking. You meet each other as members of the Division, and good fellowship is thus promoted, for it is impossible to hate a man whom you meet constantly, though you may often disagree with his principles or opinions. Indeed, I have often thought that the decay of hatred resulting from increased facility of locomotion would form an admirable subject for a study in modern history. These are the material advantages, but there exist also professional, or rather scientific, benefits which always seem to me to be of the greatest value. You have meetings, of which the present is an example, where you are able to compare your own results in practice with those of your colleagues, and even with those at a distance, whilst from time to time you will have the opportunity of learning from those who speak *ex cathedra* as having a wide and yet very minute knowledge of the subject they bring before you. The more informal these meetings

the better are the results attained. The time has long gone by for the delivery of set orations, but by question and answer much knowledge can be given and received. Last, but not least amongst the advantages of belonging to the British Medical Association is the possession of a journal from which the current advances in every branch of the profession can be accurately gauged. I need not labour the disadvantages of the Association, as I am here to speak in its favour. Every institution dealing with large numbers of men has attendant disadvantages, and the British Medical Association is no exception to the general rule. If I had to specify the chief disadvantage I should condemn first the tendency which it has to encroach upon the time of men who might be more profitably engaged by leading them to serve on endless committees whose object is to reduce to rule conditions which must always be governed by circumstance. It is even open to argument whether government by committees is the best form of government. It has at least the advantage that the conclusions arrived at are not the sum of individual opinions.

Gentlemen, I have detained you too long. I end with the wish that the Harrow Section inaugurated to-night may have a long and prosperous career, that it may never be lacking in energetic officers, and that the roll of its members may be continuously increased.

AN ANALYSIS OF A RECENT SERIES OF 100 CONSECUTIVE OPERATIONS FOR ACUTE APPENDICITIS.

By ARTHUR H. BURGESS, F.R.C.S. ENG., M.B.,
M.Sc. VICT.

HONORARY ASSISTANT-SURGEON, MANCHESTER ROYAL INFIRMARY AND
MANCHESTER CANCER HOSPITAL; LECTURER IN SURGERY,
UNIVERSITY OF MANCHESTER.

In a paper published in the BRITISH MEDICAL JOURNAL, July 13th, 1907, I briefly summarized the results of forty-seven operations for acute appendicitis performed during the year 1906. I have added to these fifty-three performed between January 1st, 1907, and November 18th, 1907, so that I am now able to present a detailed analysis of 100 consecutive operations performed in the acute stage of appendicitis between January 1st, 1906, and November 18th, 1907.

Sex.—The series comprised 66 males and 34 females.

Age.—The average age was 25.6 years; of the males 25.58, of the females 25.8. The oldest patient was 73, the youngest 3, and curiously enough these two were consecutive cases on the same evening.

Age Periods.	Males.	Females.	Total.
1 to 5 years ...	1	1	2
5 to 10 " ...	5	2	7
10 to 20 " ...	24	9	33
20 to 30 " ...	15	11	26
30 to 40 " ...	7	6	13
40 to 50 " ...	8	2	10
50 to 60 " ...	5	2	7
60 to 70 " ...	0	1	1
70 to 80 " ...	1	0	1
Total ...	66	34	100

Previous Attacks.—Twenty-three had had one or more recognized previous attacks, and 1 case had had 6 such attacks.

Duration of Symptoms Prior to Operation, with Results.

	Cases.	Deaths.	Mortality.
1. Under 24 hours ...	7	0	
2. 24 to 48 hours ..	9	0	
3. Third day ...	14	0	
4. Fourth day ...	15	0	
5. Fifth day ...	10	2	20 per cent.
6. Sixth day ...	6	2	33.3 per cent.
7. Seventh day ...	5	1	20 per cent.
8. Second week ...	21	3	14.2 per cent.
9. Third week ...	13	1	7.9 per cent.
Total ...	100	9	

1. *Operations within Twenty-four Hours.*—The earliest performed was ten hours from the first symptom, the others being twelve, fifteen, eighteen, twenty-three, and twenty-four (2 cases) respectively. In all the appendix was found reddened, thickened, and obviously inflamed, and in 2 cases (those at ten and eighteen hours) it was already distended with pus; in none was any peritoneal infection present. The appendix was removed in every instance, and the abdominal wall sutured in layers without any drainage. Primary healing occurred in all, the recovery being in every way similar to that usually observed after an "interval" operation.

2. *Operations from Twenty-four to Forty-eight Hours.*—The duration of symptoms in these 9 cases was thirty, thirty-six (2), thirty-eight, forty-four, forty-four and a half, and forty-eight (3) hours. In 3 cases—forty-four and a half and forty-eight (2) hours—the appendix was already gangrenous and perforated, with diffuse spreading peritonitis around; in the others the appendix was inflamed without peritoneal infection. In all the appendix was removed, and in the three with peritoneal infection drainage was provided for.

3. *Operations during the Third Day (14 Cases).*—In one a small abscess was found at the root of the appendix, without any surrounding peritonitis; in all the others the appendix was either perforated or gangrenous, often both, with diffuse spreading peritonitis. The appendix was removed in every instance, and in all but the first the pelvis and lower abdomen were flushed with saline and drainage provided.

4. *Operations during the Fourth Day (15 Cases).*—In one case the appendix was inflamed and very much thinned at one spot near its distal end, but was not perforated and there was no peritonitis; in 9 cases gangrene or perforation had occurred, with diffuse peritonitis; and in 5 cases a definitely circumscribed abscess was present.

5. *Operations during the Fifth Day (10 Cases).*—In one instance only was a circumscribed abscess found. In the remaining 9 the appendix was perforated or gangrenous, and of these 4 were associated with diffuse spreading peritonitis and 5 with general peritonitis; two of the latter died.

6. *Operations during the Sixth Day (6 Cases).*—In 4 a circumscribed abscess was present; 1 had perforation of the appendix with general peritonitis, and 1, admitted in a state of profound toxæmia, had gangrene of the whole of the appendix, a portion of the caecum and a large mass of omentum, with diffuse peritonitis. These 2 last cases proved fatal.

7. *Operations during the Seventh Day (5 Cases).*—In 2 a circumscribed abscess existed; in 1 there was a gangrenous appendix with diffuse peritonitis; and in the remaining 2 the appendix was perforated and there was general peritonitis. One of these last patients recovered, but only after a convalescence of several months, and even at the present time a small faecal fistula occasionally discharges.

8. *Operations during the Second Week (21 Cases).*—In 17 a circumscribed abscess was present, one patient dying four days after the operation (which was performed on the tenth day) from continued toxæmia. Two cases had perforation of the appendix, with diffuse peritonitis, and in one of these (operated upon on the twelfth day) it was obvious that a localized abscess had existed for several days, and that a secondary rupture had then occurred into the peritoneal cavity. One case of perforation, with general peritonitis, operated upon on the eighth day, proved fatal; and in another case, also fatal, operated upon on the twelfth day, an enormous faecal abscess existed, from which the appendix and the whole of the caecum were removed as a large slough, the termination of the ileum opening directly into the abscess cavity.

9. *Operations during the Third Week (13 Cases).*—In all a well-circumscribed abscess was present. One case, a youth of 12, with a large abscess extending upwards behind the ascending colon to the subphrenic region, died three days after operation, in spite of free drainage.

The pathological conditions disclosed at these operations may be tabulated under four heads:

- A. Infection limited to the appendix.
- B. Circumscribed abscess.
- C. Diffuse spreading peritonitis.
- D. General peritonitis.

The distinction between diffuse and general peritonitis

is a more or less arbitrary one, and I have again adopted that mentioned in my previous paper in the *BRITISH MEDICAL JOURNAL* of July 13th, 1907—that is, to include under "general" peritonitis only those cases where at the operation, through multiple incisions, it was actually seen that the infection extended from pelvis to diaphragm. The mortality from true "general" peritonitis is, and always must be, extremely high; and there can be no doubt that many of the recoveries alleged after general peritonitis have reference to the "diffuse spreading," or, as Mr. Carwardine of Bristol¹ so aptly terms it, the "acute generalizing" form.

The treatment in each of these pathological conditions was briefly as follows:

In Group A the appendix was removed, and the abdominal incision sutured in layers without any drainage (in 2 cases, being in doubt as to the advisability of drainage, I inserted a small tube down to the stump of the appendix, removing it in forty-eight hours; as no discharge escaped I consider this might safely have been omitted). Primary union of the wound occurred in every instance.

In Group B the abscess was opened, flushed out with sterile saline, and drained with rubber tubes; if the abscess was comparatively small, the appendix was deliberately searched for, otherwise it was left unless obviously presenting in the cavity; it was removed in 14 only of the 44 cases.

In Group C the appendix was removed as the first step, the lower portion of the peritoneal cavity flushed out with sterile saline solution, and a large rubber drain inserted to the bottom of Douglas's pouch; in the females this was usually brought out through the vagina, thus establishing vaginal drainage. Most of the later cases of this group were operated upon in the semi-recumbent position, and transferred to bed without this position being even momentarily changed during the first three days. Saline infusion into the rectum, either at frequent intervals, or better still continuously, was utilized in every instance.

In Group D the treatment was as in C, except that four or more incisions were made in the abdominal wall and counter incisions in the loins.

The results, classified according to the pathological findings, were:

	Cases.	Deaths.	Mortality.
Group A. Infection limited to the appendix	14	0	
Group B. Circumscribed abscess	44	3	6.8 per cent.
Group C. Diffuse spreading peritonitis	33	1	3.03 "
Group D. General peritonitis	9	5	55.5 "
Total	100	9	9 per cent.

These results are of great interest in connexion with the question of early operation in appendicitis and its alleged risks. The cases, 45 in number, operated upon within four days, yielded no mortality, as contrasted with a mortality of 20 per cent. for the fifth day, 33.3 per cent. for the sixth, 20 per cent. for the seventh, 14.2 per cent. for the second week, and 7.9 per cent. for the third. These 45 cases included examples of each of the groups of pathological findings, so that the technique and severity of the operation *per se* was the same as in the later series. The mortality of the latter, therefore, cannot be ascribed to the operation itself, but is unquestionably due to the inferior condition of the patient at the time the operation was undertaken. The deaths occurred after the operation and in spite of it, but certainly not on account of it. In other words, the mortality which is so often urged against operations in the acute stage really represents the mortality of *delay*, with the consequent increased toxæmic state of the patient. The lesson to be drawn is not, on account of this mortality, to advise against such operations, but rather to encourage their performance before a stage of serious toxæmia is reached. This present series would indicate that, provided operation be undertaken within four days of the onset, the chances of recovery are exceedingly good, and in a previously tabulated series of 47 cases, which I operated upon during the years 1904 and 1905, no death occurred after an operation within four

days. These results scarcely endorse the view so frequently advanced as to the great danger of operating between the second and fifth days. But even though all these cases recovered, yet the earlier the operation the better the recovery. In all the operations within twenty-four and in the majority of those within forty-eight hours, the recovery was exactly similar to that after an "interval" operation, without any risk of a weak scar. In most of those on the third and fourth days drainage was necessary, convalescence was more prolonged, and the chances of a weak scar greater.

Of the nine deaths in the series five had general peritonitis, two had diffuse peritonitis with gangrene of the caecum as well as of the appendix, one a local abscess, and one a large abscess extending to the subphrenic region. Surely these fatalities may be justly ascribed to delay rather than to operation; the operation certainly failed to save, but it cannot be said to have materially hastened the inevitable end.

The great reduction in the mortality after operations for acute appendicitis that has followed the policy of "interfering" at an earlier period points irresistibly to the conclusion that were all cases submitted to operation in the early stages of the attack appendicitis would cease to be a fatal disease.

REFERENCE

¹ BRITISH MEDICAL JOURNAL, November 30th, 1907.

INTUSSUSCEPTION DUE TO POLYPUS.

By J. LIONEL STRETTON,

SENIOR SURGEON, KIDDERMINSTER INFIRMARY AND
CHILDREN'S HOSPITAL.

THE following two cases are interesting examples of intussusception due to polypus. Both of them occurred in adults, and in both of them treatment by excision was successfully carried out.

A. T., a woman aged 25, was suddenly seized with excruciating pain in the abdomen without any apparent cause; the pain was not localized. There was some vomiting but no increase of temperature; the pulse was 90. Her bowels had been constipated. She was kept in bed and treated with small doses of belladonna and hot stupes, with small sips of hot water to drink. As the vomiting continued and the bowels did not act, enemata were administered. These were continued twice daily; faecal matter always returned, but there was never a good result. After forty-eight hours a mass of an indefinite nature was discovered in the right inguinal region. Operation was suggested and refused.

On each succeeding day her general aspect was worse, and each day the question of operation was forcibly put forward, without avail. On the eighth day she was vomiting the contents of her intestine, and although the enemata still brought away faecal matter, her general aspect was very bad. The temperature remained normal and the pulse 96.

She was placed under ether, and the abdomen was opened by a vertical incision on the outer side of the right rectus. The mass which had been felt was found to be an intussusception of the ileo-caecic variety. As it was impossible to reduce it, the whole of the intussusception was excised. The divided ends were united by two layers of silk sutures. She was much collapsed in spite of saline transfusion direct into her veins and hypodermic injections of liquor strychninae. She, however, gradually improved and made an uninterrupted recovery. Her temperature only once reached 100°. The skin stitches were removed on the ninth day, and she was up in three weeks. She has since married, and remains in perfect health—nearly five years after operation.

The portion of bowel excised consisted of 8 in. of the ileum. There was a considerable amount of gangrenous degeneration and at the apex of the intussusciplens a sessile polypus. The specimen was submitted to the Clinical Research Association for examination, and they reported it to be of an innocent nature.

T. S., a male, aged 50, was sent by Dr. Dickinson, of Tenbury. He had suffered from total obstruction of the bowels for a week; no flatus had passed. He had been vomiting constantly for three days, and during the last twenty-four hours the vomit had been faecal. He had had a similar attack six months previously which lasted a week, when, he states, "the doctor syringed me and it came away."

When admitted, on October 8th, 1907, although he had come by train and walked from the station (a mile and a half), he did not appear much distressed. He was a well-nourished man, and his organs were healthy. He vomited at frequent intervals, and the vomit consisted of intestinal contents. The abdomen was swollen and tympanitic, but there was no tenderness. By the rectum a prominent mass could be felt with an orifice, but the finger could not reach the sulcus. No polypus was felt, but as Dr. Dickinson had felt it, it is probable that it

had slipped back. There had not been any discharge of mucus or blood per anum.

He was placed under ether and the anus was dilated. The left hand was easily introduced, and was passed upwards, carrying the intussusciplens in front of it and completely reducing it. The fingers were easily palpable just to the left of the umbilicus. Nothing further was discovered by bimanual examination. The bowel was thoroughly washed out, and he was returned to bed. On the following day he was quite comfortable, he passed flatus, and his bowels acted naturally. He continued to progress satisfactorily, and was discharged at the end of a week. He was warned that the condition might recur, and was advised to return immediately if it did.

A week later he returned. The intussusception had occurred again; there was a considerable amount of tenesmus, with passage of blood and mucus. By the rectum the intussusciplens could be easily felt, and at its apex there was a hard flattened mass, which felt ulcerated on its surface. During the night it protruded from the anus, and was seen by the nurse.

He was placed under ether, and an incision was made in the left iliac region from an inch inside the anterior superior spine of the ilium vertically upwards for 3 in. The intussusception was found to reach to just above the brim of the pelvis, the intussusciplens was with difficulty reduced, and was found to consist of more than a foot of the colon. At a point corresponding to the level of the umbilicus there was a puckered and hardened condition of its wall, interfering considerably with its calibre. Twelve inches of the bowel was removed, commencing 2 in. above the puckered portion, and the ends were joined by two rows of silk sutures. Several enlarged glands were also removed. The abdominal wound was closed in layers. There was very little shock. The following day he had some distension and vomiting, which was relieved by the stomach tube. Otherwise he made an uninterrupted recovery. He passed flatus after forty-eight hours and the bowels were well moved on the fifth day. He was discharged at the end of a month.

On opening the portion of excised bowel a sessile polypus about $\frac{1}{2}$ in. in diameter was discovered with its surface ulcerated. A portion of this, together with one of the glands, was sent to the Clinical Research Association, and they reported: "This growth of the sigmoid is a columnar-celled carcinoma, showing the usual branching tubules lined by proliferating columnar epithelium. The enlarged gland contains a similar growth, but has almost completely undergone colloid degeneration. It is probably a secondary growth, not necessarily in a gland, as no gland structure can be seen."

The first case is remarkable for two reasons: (1) The slight symptoms attending such an acute condition. There was nothing beyond the sudden onset to suggest the nature of her trouble. There was no tenesmus, no blood or mucus in the stools; her pulse did not increase, and her temperature did not rise. (2) The daily passage of flatus and faecal matter. At the operation the large bowel was found empty, and there can be no doubt that flatus and fluid faeces were able to pass through the intussusciplens, although it was sufficiently constricted to produce gangrenous degeneration. It emphasizes the necessity of exploratory operation in cases where the general aspect of a patient remains unsatisfactory.

The second case, although of a chronic type, was, in the last attack, accompanied by far more acute symptoms. There was constant tenesmus, with passage of blood and mucus, frequent vomiting, and an increasing pulse. No attempt at reduction was made on this occasion, as it was evident that some more radical treatment was necessary. I therefore decided to shorten the bowel by excision.

In the course of the after-treatment we have yet another instance of the value of the stomach tube. With it a large quantity of gas and filthy material was removed, and in a few hours his alarming condition had disappeared. After such operations the use of enemata or aperients is contraindicated, and it is especially in such cases that the stomach tube is indispensable.

It is interesting to note that on the first occasion the hand and arm were easily introduced into the bowel, and in spite of this the polypus was not discovered. The portion of bowel containing it was evidently carried in front of the approaching hand. The kidney was felt and the fingers were seen and palpated to the left of the umbilicus. Although I remember a paper, by a bygone surgeon, on palpation of the kidney per rectum, I have not previously been able to do so, and it is probable that few surgeons have had such an experience. The size of the hand, in the present instance 7 $\frac{1}{2}$, is no doubt an important factor in rendering such manipulations possible.

The presence of a polypus is not only likely to produce intussusception, but when once this has happened it is