Presidential Address

ON

ABDOMINAL EMERGENCIES[1]

DELIVERED BEFORE THE MANCHESTER MEDICAL SOCIETY.

By E. STANMORE BISHOP, F.R.C.S.ENG.

THE list of abdominal emergencies is a fairly long one, and includes:

- Accidental injuries and rupture of viscera.
- *Post-partum* haemorrhage.
- Ruptured ectopic gestation.
- Twisted ovarian pedicle.
- Strangulated hernia.
- Intestinal kinks and adhesions.
- Appendicitis.
- Acute pancreatitis.
- The passage of renal or biliary calculi; and
- Perforation of gastric and duodenal ulcers.

It would obviously be impossible to attempt to deal with all, nor do I propose to do so. Certain subjects must be omitted entirely, and in each of the rest only a few points can be taken; to one only, and that the last, perhaps a little more detail may be possible.

In the first place, it is possible to put on one side those cases of injury to abdominal viscera of which there is a clear history, such as bullet and knife wounds or the rupture of viscera in consequence of the passage of heavy bodies across the abdomen, etc. A clear diagnosis of the extent of injury may present difficulties, may indeed be impossible before operation; but at the present day their treatment by immediate laparotomy, with such subsequent work as may be required in each individual case, is clearly admitted and need not now detain us.

There is, however, another general class which cannot be dealt with so summarily, and the possibility of which confronts the surgeon in almost every case. I refer to the neuromimetic class. In these days of suggestive advertising of quack remedies, it is easy for any one to become obsessed with the idea that his or her own case presents exactly those symptoms which are presented as characteristic of a dangerous disease, and the neuromimetic mind easily fills in those that are wanting. A little knowledge is here peculiarly a dangerous thing.

But it is necessary also not to lose sight of the opposite side; even a neurotic person may suffer from a genuine abdominal lesion, and the real symptoms may be overlooked or not accorded their full value because of their possessor's known tendency to nervous exaggeration. A clear diagnosis is best obtained by entire reliance upon objective signs, which fortunately now are not wanting.

Post-partum Haemorrhage.

I mention this merely in order if possible to emphasize the views as to treatment, previously elaborated in the *Practitioner* and elsewhere; lapse of time and further experience only still further confirm them, and I have received communications from all over the world endorsing their truth from the writers' own personal experience; during last June, Major Giffard, of the Indian Medical Service, who is in charge of the Government Hospital in Madras, was in England and told me that for three years, after reading some of the earlier articles, treatment solely by pelvic elevation and aortic compression had been adopted in that hospital by him with complete success; that whereas before its adoption several cases had been lost from this cause, since the plan had been introduced there had not been a single death, and that, he considered, was all the more remarkable since it had been carried out with native assistants, who, as he remarks, are inclined to become flustered in such an event. He had treated during those three years, 7,000 cases of midwifery.

Ruptured Ectopic Gestation.

The next two conditions are not so evident. Rupture of a pregnant tube might be mistaken for rupture of a gastric or duodenal ulcer, or even for a burst appendical abscess, but the state of the pulse and the mucous membranes will quickly distinguish them. Nothing increases the rapidity of the pulse so much or so quickly as loss of blood, and as in appendix cases there is no appreciable blood lost, whilst in gastric ulcer the blood lost is either vomited or passed by bowel, and so easily recognized, the extreme rapidity of the pulse in ruptured ectopic pregnancy would almost alone serve to distinguish it, and this especially if seen early after the occurrence. The colour of the lips and finger-nails also is very different—in the one they are naturally blanched, in the other two they alter but little; whilst if seen later, the expression of the face will attract attention; in appendical abscess and gastric ulcer the fluids set free irritate the peritoneum, and the peritonitic face is produced. An expression of extreme anxiety comes over the features, which in itself is characteristic. I have called it a "hunted" expression; the patient looks from face to face in search of a help that she knows beforehand she will not find; once seen, this can hardly be mistaken for anything else. In the other case, the blood not being an irritant, the face is more placid; there is anxiety, too, but it is not of the urgent kind which is seen in the others; so that from the face and the pulse alone a diagnosis might almost be made. But the respirations also differ. In ectopic cases there is first yawning, sighing breathing, then gasping, for want of sufficient oxygen in the tissues; in the other two the respirations may be hurried, but it is a sort of "busy" breathing, not gasping or yawning. Of course the history, if it can be obtained and is reliable, is of great help, but at times like these one is often liable to be misled, not by want of information, but by too much.

If the occurrence of sudden pain can be obtained, occurring in a woman otherwise in fair health, and followed by the collapse witnessed, with soft abdominal walls and a rapid pulse, there will be sufficient ground for a strong suspicion of this condition; if to this is added the sensation of a thrill or a doughy swelling in Douglas's pouch, whilst the slightest irregularity during the preceding one, two, or three periods of menstruation can be elicited, the diagnosis is sufficiently certain to justify immediate exploration.

In any such case it is better not to wait for the collapsed condition to pass off, as the patient will the sooner recover if a stop is at once put to further loss of blood.

At the present time all our efforts are of course directed so as to anticipate the occurrence of rupture and to remove the unbroken ectopic sac, and this, thanks to increased experience of the bimanual method of examination, may often be done. I have succeeded in removing the intact ovum and tube in three cases, whilst in a fourth the tube evidently had given way during her journey from ward to theatre, since, though blood was issuing from a rent in the tube, only half an ounce of blood was found in Douglas's pouch.

In acute peritonitis there immediately follows a contraction of that segment of the abdominal wall which overlies the area of inflamed serous membrane. This contraction of the muscular wall is automatic, due to reflex action, and, as I have for some years suggested, is analogous to the contraction observed in joint inflammations, which Hilton showed long ago must inevitably follow any inflammatory irritation of the serous lining. The serous membrane of a joint, the muscles acting upon that joint, and the skin over it, are all connected by a nerve arc, through which the stimulus arising from the afferent nerves in the serosa pass, via the spinal centre controlling both, to the efferent nerves supplying the muscles, which thereupon at once contract, holding the joint firmly in one position, so that no movement of it can intensify the mischief within. It is, I conceive, easy to show that this law applies with equal force to what may be called the "abdominal joint." The word "joint" has long been supposed to connote the presence of bone and cartilage; but these are by no means necessary to its existence. The essential elements of a joint are:

1. Two surfaces capable of movement the one over the other.
2. Muscles capable of effecting that movement.
3. A serous lining membrane which secretes sufficient fluid to render that movement easy and smooth.
4. A nervous arc connecting these several parts.

All these are to be found in the abdomen, and experience shows that Hilton's law is obeyed here just as in any other joint. In the knee we judge of the amount of serosal inflammation by the fixity of the bones held by the automatically contracted muscles; in the abdomen by the contraction of the muscles themselves.

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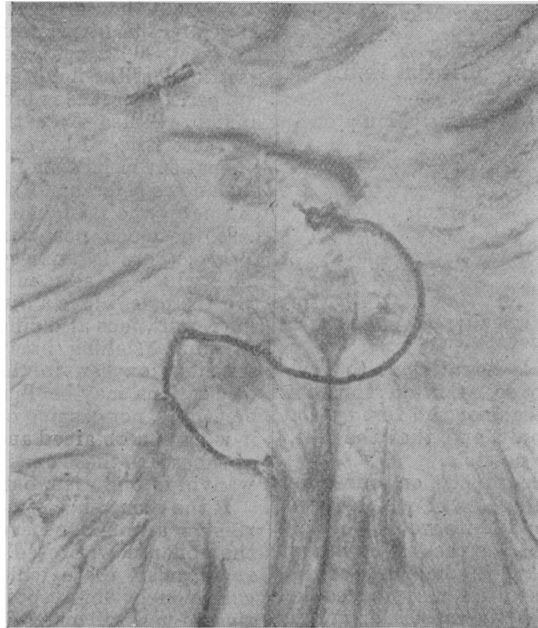
Twisted Ovarian Pedicle.

An ovarian tumour with a twisted pedicle does not present much difficulty; if a mass has previously been recognized the sudden occurrence of great pain followed quickly by tenderness of that mass, which now rapidly enlarges, points plainly enough to what has occurred. At first the muscles above will be supple, but adhesive peritonitis is almost certainly to be set up as soon as the blood is shut off and the tumour, because dead, becomes a foreign body; then muscular rigidity will be added to the picture. If there is no previous history of a recognizable growth it will, if present, be still in the pelvis and recognizable by recto-bimanual examination.

Intestinal Kinks and Adhesions.

It is not necessary to say anything as to strangulated hernia, but apart from hernia there may be obstruction from adhesion and kinking of bowel internally. Such a case was seen with the late Dr. Mason of Moss Side.

A lady, fourteen days after confinement was suddenly attacked by vomiting; there was not much pain at first, though later she complained of some in the hypogastrium. The patient was practically convalescent from her labour, and had been allowed to rise the day before. The vomiting was persistent, and smelt faecally; the abdomen began to distend; there was absolute coprostasis. Enemata brought away the contents of the lower bowel, but nothing more. The diagnosis was provisionally made by relying upon the absence of rigidity, the absence of any recognizable tumour or external hernia, the rapid distension, and the fact that the vomiting preceded the pain, which was never very acute. It was evident that some small intestine obstruction was present, whether from band or kink it was impossible to determine, and the abdomen was opened. A coil of small intestine was found adherent deep down in Douglas's pouch, which was loosened and brought up; the vomiting at once ceased, and did not return. She was quickly well.



Crateriform ulcer formed upon line of union after excision of a previous ulcer. The walls of the stomach had been united by two layers of continuous suture; the inner of catgut, the outer of iron dyed silk. The latter is seen lying free on the mucosal surface, attached only by a knot, also on the inner surface. This specimen I owe to the courtesy of Dr. Andrewes of St. Bartholomew's Hospital.

I have seen two similar cases recently.

Appendicitis.

This is one of the most prominent of the sudden emergencies met with in the abdomen, but as it has been hardly possible to take up a medical journal during the last year without finding a long article dealing with this subject, I shall not say much about it. The rapidity with which danger arises in some first cases is extreme. In one seen during the last month with Dr. Davie, of Fallowfield, the first symptom occurred on Friday; pain was felt in the epigastrium, but was attributed, as is so often the case, to unsuitable food, and the mother devoted Saturday to purgatives. Dr. Davie was first sent for on Sunday morning; the same afternoon the abdomen was opened, and an almost entirely gangrenous appendix found. Sero-purulent fluid welled up from the pelvis, necessitating drainage by a long tube passing into Douglas's pouch. The patient was placed in the Fowler position and treated by continuous proctoclysis, with the result that in a fortnight she was out of bed, and returned home well at the end of three weeks. I mention this case partly for the reason already given and partly to call attention to the extremely good results obtainable by Murphy's method of treatment; it has in many cases which I have seen apparently turned the scale in severe peritoneal inflammation.

But appendicitis appears to be well understood and treated in Lancashire. Reference to the Registrar-General's reports will show that its mortality is much lower in proportion to the population than in London, and that the combined mortality in London and the three counties chosen for comparison is less than one-third of the entire mortality of England and Wales.

I must pass over the passage of renal and biliary calculi, as well as acute pancreatitis.

Intussusception.

This is the last but one of these conditions to which I wish to refer; its symptoms are well known, but it may be well to call attention to a method of obtaining one, always necessarily present and characteristic, which has been found useful. When intussusception takes place the mesentery of the entering intestine is compressed. Such pressure acts first and chiefly upon the mesenteric veins; as a consequence some of the smaller vessels will give way; the blood effused must find its way into the lumen of the bowel, and tends to collect, it may be in very small quantity, above the sphincters. Inasmuch as peristalsis below the lesion is disturbed, it may not appear outside, but a finger gently passed above the sphincter will return bloodstained. In this way very small amounts of blood may be recognized.

Chronic crateriform ulcer of stomach (saddle ulcer), lying transversely across the lesser curvature. Shows "terracing." There are two small perforations through the peritoneal coat. This specimen I owe to the courtesy of Professor Lorrain Smith, of the Victoria University.

Perforation of Gastric and Duodenal Ulcers.

When the mortality of gastric and duodenal ulcer is considered it is evident that in this county we need specially to direct our attention to this fatality. Since 1901 gastric ulcer has been distinguished in the Registrar-General's *Reports*; before that time it was included in the deaths from peritonitis or from indefinite causes, but during the eight years up to the report for 1908, which has just been published, the deaths for England and Wales have averaged 1,700. Of these, London furnished 250, Lancashire 252, Cheshire 39, and the West Riding of Yorkshire 143, so that we stand at the head of the list, no other county in England and Wales having anything like as large a number of deaths from this cause. When it is remembered, also, that only a small percentage of gastric

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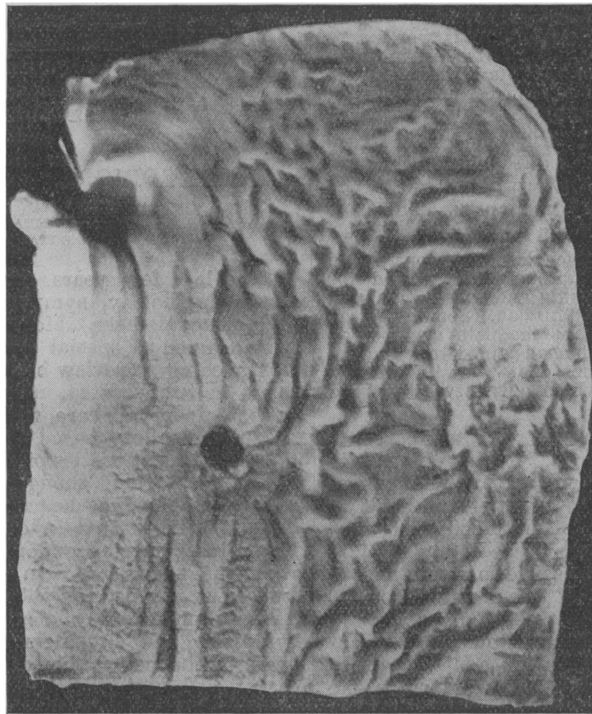
ulcers immediately cause death, but that they do produce a large amount of chronic suffering, the necessity for increased study of this condition is abundantly evident.

Perforation of a gastric or duodenal ulcer is one of the most important of all sudden abdominal emergencies. The sufferers from it usually complain of a sensation of something having yielded in the upper abdomen, followed either immediately or after a short interval by intense pain, which may become so agonizing as to produce marked collapse. The course of events is well shown in the two following cases, one of gastric, the other of duodenal perforation:

A man, aged 37, was admitted to Ancoats Hospital in March, 1909. On the morning of his admission he was feeling in fairly good health. On cross-examination afterwards, at first he would admit to only one week's sensation of some pain after food, later to a hazy "few weeks." He ate a good breakfast at 7.15 a.m. and felt no pain after it. He continued at business until 5.30 p.m., having dined at midday off stewed steak and potatoes. He was performing his toilette previous to departure when something was felt to give way suddenly in the epigastrium. No immediate pain was felt, but there was a sensation of rapidly increasing weakness. As he walked with difficulty down a long room he became short of breath and faint. He sat down and rested. Half an hour after the first sensation severe pain began, also in the upper abdomen, which became steadily worse until, he said, it amounted to agony one and a half hours later. He vomited once; the fluid rejected contained food, but no blood. A doctor was sent for who injected morphine. Relieved by this, he was able to be removed to the hospital.

On examination there, great tenderness, increased by pressure, was found over the entire epigastric region, and there was rigidity of both upper recti, the lower segments being still supple. His temperature had fallen to 96.8°, his pulse to 66, but his respiration was quickened to 36 per minute. He was not at that time in any great pain.

The abdomen was opened five hours after the initial lesion; when the peritoneum was divided gastric contents at once escaped and poured out in great quantity; when sufficient had been removed by sponges the stomach was drawn forward and a round punched-out opening was found, which was surrounded by a whitened bleached appearance, which faded gradually around into the normal colour of the stomach. The tissues, however, were not thickened or indurated. The opening was easily closed by a purse-string suture; drainage was carried out by tubes passed through stab wounds in both loins and above the pubis; the abdominal wound was closed.



Acute "tunnel" ulcer of the stomach. Openings at both ends of equal size, that on the peritoneal surface being sharply cut. No "terracing." This specimen I owe to the courtesy of Mr. Shattock, of the Royal College of Surgeons and St. Thomas's Hospital.

Perforation of the duodenum gives a somewhat similar picture, though a different history.

The case I select is that of a girl aged 19. She was at her work as a mule tenter, when suddenly without any warning, about 4 p.m., she was attacked by violent pain in the epigastrium bringing her to the ground. After a few minutes it became less intense, at the same time sinking to the umbilical level. She had suffered for some months from mild epigastric pain which became worse about one hour after food and was relieved by vomiting; she could also relieve it for a while by eating more food. There had been some loss of weight. After resting about half an hour she walked some hundred and fifty yards to the hospital. When seen the pain was so much less that it was with difficulty that she could be induced to remain, but as both upper recti, and especially the right, were found to be rigid, and there was great tenderness all over the epigastrium, a diagnosis of perforated duodenal ulcer was made. The abdomen was opened four hours after the first appearance of pain, and a pinhole perforation was found on the anterior duodenal wall from which fluid was issuing. The opening was closed and the patient recovered.

By the courtesy of Dr. Andrewes of St. Bartholomew's I am able to show a gastric crateric ulcer in the process of formation. In this case a previous ulcer had been excised three months before death and the healthy stomach wall reunited. The surgeon had used catgut for the internal suture, and this had become digested before complete union of the mucosa had taken place. This coat had therefore retracted at one point, allowing access of gastric juice to the submucosal and muscular layers, with the production of the ulcer seen. This preparation is valuable, since it illustrates not only terraced ulcer formation but several surgical points—the unfitness of catgut for internal suture, for one; one possible cause for jejunal ulcer after gastro-enterostomy, for another—so many of which have been found at the actual junction between stomach and intestine; besides a third, to which I shall presently refer.

Chronic gastric ulceration is not strictly speaking one of the emergencies of the abdomen, but its perforation is. It is therefore admissible as a subject of remark. Patients who suffer from chronic gastric ulcer are usually men and women in middle life. They give a history of long-continued dyspepsia. They dread to eat, since the act is usually followed within an hour by pain, sometimes by vomiting, which gives so much relief that many are in the habit of exciting it for that purpose. The disturbance of their gastric functions reacts upon their nutrition, frequently upon their temper. They become thinner, more irritable, sometimes even morose. Their diet becomes restricted, since various foods are dropped one after another, partly because of their own experience of the pain produced, partly by the advice of their friends or their physician. Rest in bed, absence of worry, and a suitable diet will relieve for a time, but return to normal life and diet is followed by relapse. Their views of life and the future become clouded, they themselves neurasthenic and unhopeful. There seems little doubt that some at least of the suicides for which no cause can be assigned are due to this condition.

Chronic duodenal ulceration gives a similar history, but with one main point of differentiation. There are others of course, but this is the one on which it appears to me most reliance can be placed. I refer to nocturnal pain. Patients suffering from this wake up in the morning about 2 or 3 with a hot burning sensation rather lower than the epigastrium but in the median line, and often also at an opposite point in the back. Almost immediate relief can be obtained by the taking of some alkaline fluid, and they fall asleep again. This symptom is in my experience more valuable than the actual time after a meal at which pain is felt; comparison of cases proved by operation shows great variability in the time of appearance of this pain, in some gastric instances the pain appearing even later after food than in other duodenal ones.

Both gastric and duodenal ulcers appear to be curable by gastro-jejunostomy, but in what remains to be said I shall refer only to gastric ulceration. Such ulceration is not only in itself an evil, but it tends to produce other and more serious results which cannot so easily be remedied. Sonnischen found 14 per cent. of 156 cases of gastric cancer examined *post mortem* in the pathological institute at Kiel undoubtedly developed from ulcer, whilst in a second series Klausa found 26 per cent. Stich declares that ulcer carcinoma constitutes 30 per cent. of gastric cancer. Mayo found 54 per cent. of the cases of gastric

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cancer at Rochester in which both the clinical history and pathological examination made it certain that they had originated in ulceration. Robson, in his Bradshaw Lecture, reports 59.3 per cent. of gastric cancer giving a previous history of chronic ulcer.

The good results of gastro-enterostomy in chronic ulcer are now admitted, and every physician who has advised and every surgeon who has practised this operation will have many cases to which they can refer with satisfaction. From my list of 53 I select 2 which will illustrate its effects.

The first was that of a man aged 58, who had suffered for years from dyspepsia. Eight years ago he had a sudden attack of haematemesis and passage of blood by stool; after this there was no more bleeding for several years, although his digestion was always bad, until three years ago, when it returned; he was at that time manager to a large firm, but the effect upon his health was so great that he was obliged to resign his position. For a time he lived quietly, attempting by diet and rest to recover his health, when a third and more profuse loss of blood occurred, causing his friends great anxiety as to his life. His recovery from this was slow, but as soon as he was sufficiently fit he came from London here for the operation. This was done and he returned home. As may be supposed, the loss of his situation, combined with the difficulty of obtaining another at his age, weighed on his mind, and he writes, some months later: "I should almost begin to despair but for the memory of what I have gone through and the constant feeling of thankfulness to be so healthy and strong; it is worth anything to be restored to good health. There has been nothing whatever to report in my condition that is unfavourable. I have not once been sick (however slightly), but am certainly stouter, and my appetite keeps always normal."

The other I mention as showing that good results are persistent, though, as several *x*-ray drawings and photographs which I have to show appear to demonstrate, the new stoma alters in its action as time elapses. This case is one of a girl who was operated upon in 1907.

Shortly, the case was one of pyloric ulcer with contraction and consequent gastrectasia. Symptoms had existed for several years; the pain was increasing and emaciation was great. She weighed only 6 st. on admission. Soon after the operation she began to gain weight; the pain disappeared almost directly after it; a year later she had gained 4 st., and she writes now, two and a half years since operation: "I am now better than I ever was in my life, which only serves to prove how successful was my operation."

It is interesting to note the progress of these cases as shown by Roentgen-ray observations. At first the gastric contents pass almost at once through the artificial stoma. In one case observed within eight days (it is difficult to obtain an observation earlier) the bismuthized food went through in large gulps and almost immediately so filled the small intestine that it was impossible to obtain a clear photograph. Later, in the course of two or three months, a time which varies in different cases, only a certain amount passed at once, and then the stomach was contracted, closing the opening, and allowing a clear space to become visible between the bismuth still retained in the stomach and that which had passed through the stoma. It was as if the intestine was able to signal to the stomach when it had received the amount which it was capable of digesting. After a time, also variable, the stoma reopened and allowed still more to pass, closing again when sufficient had entered the jejunum. At a later period in the history of the case the food began again once more to pass by the pylorus, less and less went via the stoma, more and more by the natural passage. At last—at least, in some cases—the original condition of things appears to be re-established. That is the impression produced by a study of these photographs and screen observations. No doubt in many cases, especially if the pylorus is organically contracted, the stoma will always remain the route by which gastric contents will find their way onwards, but, as in those in which ulcer is present, pyloric closure is usually due to spasm, which remains until the ulcer is healed, and relaxes when once that source of irritation is removed, it seems probable that these observations reflect the most common course of events.

A natural consequence of this is the question of closure by artificial means of the pylorus at the time of operation, which has been advised by some operators. I have never done this, for two reasons; no doubt the most startling results for good have been observed when exit by the natural route has been entirely stopped by organic closure, but it is doubtful how far such closure can be imitated by artificial means, or advisable if it can be done. As long ago as the time of Travers it was observed that any suture applied outside the intestinal wall tended sooner or later to make its way through into the lumen of the gut; but it has been objected by some that this only resulted with the septic sutures in use at that time. An aseptic suture or ligature, it has been said, will remain. Allow me to call your attention once more to the photograph. The inner suture was catgut, but the outer was iron dyed silk, and was aseptic when applied as it was to the outer wall of the stomach, yet now it is almost loose in its interior. Asepticity of the ligature would therefore appear to have no effect in preventing this. Mucosa if pressed against mucosa will never unite. Unless the actual mechanical pressure of the ligature can be maintained the ultimate result will be a reopening of the pylorus as soon as the thread has worked its way through the tissues of the gut, leaving behind a linear scar in that opening. If the general tendency is to a *restitutio ad integrum*, is it advisable to produce such a scar, which must always hamper the dilatation of the pylorus whilst unable to close it?

An Address

ON

THE TREATMENT OF GASTRIC AND DUODENAL ULCER.*

BY

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IN the last few years much attention has been paid to the pathology, symptoms, and treatment of gastric and duodenal ulcer. Most of the papers published have been devoted to special aspects of the subject. I propose this evening to review briefly the chief methods of treatment now advocated, most of which I have used in patients under my care, with or without the co-operation of surgical colleagues. I shall not burden you with many figures. The statistics of different methods of treatment are of great value, though figures compiled by different observers must not be compared too closely, because we cannot be sure that in each series the individual cases have been selected under the same conditions or even with the same care. In practice, however, when confronted at the bedside with the problem of treatment, we have to make our choice with a greater regard to the symptoms and circumstances of the particular patient than to the percentage of cures reported to have been established by this method or by that.

One conclusion may be reached from a glance at the published papers advocating the various methods of treating gastric ulcer at the present day—namely, that there is no one exclusive way of dealing with this disease. For there are now several large series of cases treated on divergent principles, all showing a low mortality with a large proportion of successes. In these series we note that when one observer has made use of one method, he has usually attained success; this I interpret to mean that success does not depend upon the particular method so much as upon the care and prudence with which it is carried out. Men do well what they do often.

Gastric ulcers are of two types—acute and chronic. The acute gastric ulcer, occurring in well-nourished young anaemic women, is probably one of the easiest diseases to treat successfully; indeed, so striking is the response to treatment, that the doctor may be said in this disease, if in any, to cure the patient. Chronic gastric ulcer, on the other hand, though seldom fatal when carefully treated, is a more difficult complaint.

Diagnosis.

Before making up our minds as to the method of treatment to be adopted we must form an opinion as to the existence of an ulcer, how long it has been there, and whether it is in the cardiac or pyloric end of the stomach or in the duodenum. We must then find out whether

* Read before the Brixton Medical Society.

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