developed infection of the left kidney by *B. coli* after the removal of a cancer of the rectum, Mr. B. J. Ward removed the kidney (which was full of miliary abscesses), and the patient, in a most critical condition at the time of operation, made an excellent recovery.

My own feeling is that in severe and obstinate cases an experienced urinary surgeon should be consulted, and it should be his object to determine whether the infection is in the bladder or kidney, or both; whether it is limited to one kidney or present in both; whether it is a primary infection or secondary to stone, tubercle, or obvious obstruction.

How far the surgeon is able to remedy a moderate dilatation of the kidney pelvis I do not know; but where the infection is obstinate and associated with nephropotosis, I believe nephropexy should be tried.

If the surgeon discovers no indication for operative interference, we have in vaccine treatment a remedy which will always relieve, and sometimes cure, the disease; and in some cases a course of vaccine might with advantage be used as a preliminary to operation.

In mild infections without symptoms the condition will often remain undiscovered, but once the infection is known to exist, it must be borne in mind that the disease may at any time become more acute or spread to another part of the urinary tract, so that even if a case does not appear to call for treatment, the condition should never be altogether ignored.

In conclusion, let me once more remind you that although infection of the urinary tract by *B. coli* is of common occurrence, the symptoms will often fail to draw our attention to the urinary organs; and we shall certainly fall into the error of our predecessors of attributing the symptoms to other causes, unless we are prepared to adopt the simple measures necessary to make a correct diagnosis.

A Post-Graduate Lecture

ON THE

CORRELATION AND DISTINCTION BETWEEN CERTAIN SYMPTOMS IN SOME ABDOMINAL DISEASES:

BASED UPON AN ANALYSIS OF 124 OPERATIONS FOR GASTRO-DUODENAL ULCER AND 110 FOR APPENDICITIS.

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THAT there exists some difficulty in the accurate diagnosis of cases presenting symptoms which point to the existence of a gastro-duodenal ulcer when in reality no such ulcer exists and the cause is to be found elsewhere, no one who has had any extended experience of abdominal surgery will deny; but that this is as great as is suggested by Mr. Moynihan's paper published in the *BRITISH MEDICAL JOURNAL* of February 17th will probably be considered surprising by most surgeons.

With a view to obtaining data for a slight contribution to the discussion of this question I have collected all the cases of abdominal section for operations upon the stomach and duodenum which have occurred in my practice during the last six years, both hospital and private, and which number 124. Also, all operations for appendicitis, both acute and chronic—these number 108; these latter cover a period of thirteen years, and, whilst both lists are far below those of certain operators, they may perhaps serve as a basis for some observations which perhaps may be worthy of attention.

Taking the appendical list first, 46 cases were acute, whilst 62 were chronic or relapsing. Under the former were classed all those who, whether operated upon at once or after the more acute symptoms had subsided, had had but one attack—that which was the immediate cause of the operation; whilst the relapsing cases included all who had had two or more—frequently many more—previous

Laparotomies for Gastro-duodenal Lesions.

Class.	No. of Cases.	Male.	Female.	Mortality.
Partial gastrectomy for cancer ...	7	4	3	3
Perforated gastric or duodenal ulcer	9	6	3	2
Demonstrable gastric or duodenal ulcer	90	57	33	8
Gastrectasia	8	5	3	0
No gastro-duodenal lesion found	10	8	2	0
Total	124	80	44	13

Operations for Appendicitis.

Class.	No. of Cases.	Male.	Female.	Mortality.
Acute appendicitis	46	22	24	8
Relapsing	62	32	30	0
Total	108	54	54	8

attacks of a similar character. In view of the greatly increased activity of surgeons in the present day—an activity perfectly justified by our present knowledge, and in which I share to a large extent—I may, perhaps, congratulate myself upon this list of relapsing cases, which is becoming less and less likely to be repeated, and which enables me to emphasize some points which may possibly have escaped the attention of those more anxious to prevent their occurrence.

In this list of relapsing appendicitis the incidence of sex is apparently equal. There were 32 cases (male) against 30 (female). The average age in men was 32 years and 9 months; in women, 26 years and 8 months. The youngest male was 15, the youngest female 12; the oldest male was 61, the oldest female 39.

The average number of previous attacks is difficult to estimate. In many cases nothing but a vague general statement could be obtained, giving the approximate date of the first attack, followed by some such statement as this, that whilst at first there might be intervals of freedom from pain to be measured by months, latterly attacks had occurred every week. Others speak of isolated attacks at first, with perfectly painless intervals of months or even years, gradually becoming more frequent, until at last pain was almost continuous with exacerbations. But where it was possible to determine a definite number of attacks, those were noted, and the average number was 4; the greatest number in any one series was 12, the smallest 2.

The periods covered by these attacks vary from twenty-two years to nine months.

Although in all these "relapsing" cases the appendical origin of the symptoms became clear before operation, there is a small group amongst them which is worthy of special attention, since in it, in the earlier stages, it would have been easy to come to a different conclusion; had they been seen in the earlier attacks only, they would almost certainly have been classed as gastric or duodenal; and thus they evidently are practically identical with the group of cases referred to by Mr. Moynihan, and which in my list of laparotomies for gastro-duodenal ulcer are classed under "No gastro-duodenal lesion found."

For it is evident that the cases to which Mr. Moynihan has called attention are essentially cases of chronic appendicitis, in which the progress of the pathological changes has been so slow and gradual that their results in the production of determining symptoms are such as to divert the mind of the observer, at the time they were seen and operated upon, from the tissues actually involved towards others mainly affected by the reflex irritation produced; that they are still more chronic than those usually classed under that name; and that light will probably be thrown upon such extremely chronic conditions by observation of the modification of symptoms already evident in the transition between acute appendicitis and cases less slow in their evolution, which are, however, yet evidently and plainly appendical, and which have been classed as

chronic or relapsing. Any such differences are likely to be still more accentuated in the condition under discussion. Not only so, but any differences noticeable between acute affections of the appendix and similarly acute lesions of the stomach or duodenum are likely to be reflected, to some degree at least, in the distinctions between chronic inflammatory diseases of the same organs.

It is of the essence of the difficulty that in both sets of cases, the gastro-duodenal and the appendical, the disease is one which produces a succession of more or less isolated attacks characterized by abdominal pain and vomiting, which last for a certain time and then disappear or so greatly remit as to leave the patient in a state of comparative health. It is in the differences noticeable between the symptoms present in these previous attacks that some assistance as to diagnosis may be found.

If comparison is made between an ordinary acute appendicitis and one of the relapsing variety, certain similarities and certain differences are at once noted. In both pain is the earliest symptom; in both it at first makes its appearance in or near the epigastrium or, at least, above the umbilicus. In acute appendicitis it becomes in the course of a few hours definitely located in the right iliac fossa; but in these relapsing cases the history of the first and even of some of the succeeding but early attacks appears to show that a much longer time elapsed between the first appearance of pain and its localization in the appendical region; whilst in some still less acute cases pain in the earlier attacks was sometimes entirely confined to the epigastrium, and did not show itself at all in the right iliac fossa until a second or even third attack.

Thus in Case 66, that of a man aged 61, until two years before operation no pain had been felt in the right iliac region, though for two years previously isolated attacks of pain had been complained of in the epigastric region; these attacks of epigastric pain occurred about once in every three months, and were becoming more frequent. They were often started and always increased by food, so much so that on one occasion the patient fasted for four days because of the pain produced by food. On operation, a short, thickened, almost fibrous appendix was found buried amongst firm adhesions in the subcaecal fossa. In this instance it was only the fact that in the later attacks, those which occurred during the last two years, pain became more and more plainly referred to the right iliac fossa, which placed the surgeon seeing him then in a position enabling him to direct his operative work in the right direction. Had the same surgeon seen him in the earlier attacks, during the first two years, he would certainly have operated, if at all, for some gastro-duodenal lesion.

In another case, that of a woman aged 32, sent to me by Dr. Moon, of Levenshulme, there was a history of disconnected dyspeptic attacks spreading over a period of fourteen years. Twelve years before operation there had been a sharp attack of haematemesis. The first definite attack of pain in the right iliac fossa occurred five years ago; since that there had been three attacks, in all of which the pain had been definitely located in the appendical region, and operation discovered an appendix buried in old adhesions. With the removal of this all the old dyspeptic symptoms as well as the right iliac pain disappeared. But, had any surgeon operated before the last five years, all the indications then present would only have pointed to an incision above the umbilicus for some gastro-duodenal lesion.

In two other cases (21, 72) there was a history of many years' flatulent dyspepsia and constipation, culminating at last in a well-marked attack of acute appendicitis, with the formation of an abscess in a stiff-walled cavity evidently surrounded by old adhesions. It is extremely doubtful whether in either case the previous symptoms would have suggested to any medical man the possibility of chronic appendicitis. All the symptoms detailed pointed rather to some functional or organic gastro-duodenal lesion.

In both acute and relapsing cases vomiting is usually associated with the pain; but whilst in acute cases it is usually noted as immediately following, in subacute or relapsing cases its absence in the earlier attacks is not unusual. Of course, as one has to rely upon the patient's memory for these details, it is very possible that it may have been present, but evidently not to such an extent as to markedly attract the patient's attention. In the later cases it makes its appearance in the notes, but often with a wider interval than in acute cases—thirty-six hours, two days, two and a half days, etc., after the onset of pain. In a few instances only a sensation of nausea has been experienced.

In Case 50, that of a woman aged 33, distinct attacks of pain had been referred to a point somewhat nearer Poupart's

ligament than McBurney's point, from time to time, for four years, becoming more frequent and severe during the twelve months immediately before operation. During these four years, according to the patient's account, there had been no vomiting at all, but she had had a sensation of nausea when the pain was most severe. In this case operation during the last attack disclosed a small abscess around a firmly adherent appendix.

In Case 106; also a woman, aged 29, there had been three attacks, the first being ten years before operation. There had been no vomiting, according to her account, during the first two attacks. In Case 34, that of a man aged 43, there had been three attacks. In the first attack, which lasted five weeks, there was pain, but no vomiting; in the second pain and vomiting, the attack lasting three weeks; in the third attack, which lasted nine days, again pain without vomiting was noted.

In a few cases, as I have said, vomiting, though present, appears to have been delayed. Thus, in Case 49, that of a man aged 27, who had three attacks, the first being one year before operation, in the first attack vomiting occurred two days after the commencement of pain; in the second attack there was no vomiting; in the third attack vomiting began one or two hours after the pain.

Thus, although in acute cases vomiting is closely associated with pain, in those more chronic, or subacute, or "relapsing" cases vomiting does not appear to be such an unflinching attendant, whilst the relation between the two, though sometimes irregular, appears generally to become closer as time goes on.

And, as might have been expected, in the majority of cases the act of vomiting gives no relief to the pain; this, however, can hardly be relied upon, as in one case so great was the relief afforded that the patient had recourse to artificial means in order to produce it.

Probably, in comparison with the almost certain relief to pain obtained by vomiting in gastro-duodenal cases, its usual absence in appendical cases is of more importance in differentiation than its occasional presence.

Lastly, some importance may be attached to the action of purgatives. Every one knows how gravely an injudicious purgative given at the commencement of an acute attack will aggravate the mischief in progress; how it quickens up the rate of destructive change. In these more especially chronic cases the rate is at its slowest; some quickening is permissible. By the action of a purgative a little increased irritation may be produced at the actual seat of the lesion, thus inducing a localized tenderness which is temporary, but sufficient to attract attention. Much emphasis cannot as yet be attached to this; in only 3 cases of doubt has this been tried. In 1 no reaction resulted, although in this the appendix was at fault; but in 2 sufficient tenderness and increased resistance over McBurney's area was found to justify incision in this area, and in each case a kinked and adherent appendix was found.

It would appear that cases of appendicitis must be reclassified: (1) Acute, (2) relapsing or subacute, and (3) chronic, in which latter class all these cases under consideration must be included.

It is in this class that difficulty is found as to diagnosis before operation—difficulty which it is very necessary to overcome, and which, I suggest, may be cleared up by a more careful search amongst the records of the earlier attacks and comparison with those of the later ones. Such search should be directed to:

1. Any difference as to the localization of the pain.
2. Any alteration in the relationship of pain and vomiting.
3. The relief afforded or not by vomiting.
4. The effect of purgatives.

But is the proportion of such cases incorrectly referred to us for operation by physicians as large as that suggested by Mr. Moynihan? In view of this question I have collected and carefully searched through all my laparotomies for gastro-duodenal lesions. They amount, as I have said, to 124. Either I must have been singularly fortunate, or Mr. Moynihan peculiarly unfortunate in our medical colleagues, the gentlemen who have so kindly referred their cases to us for operation, and who, at least in my own case, had, in the majority of these cases, already made the diagnosis. So far from over 50 per cent. being mistaken, which is Mr. Moynihan's estimate, only ten, or roughly 9 per cent., failed to show a perfectly definite lesion such as could be appreciated by the operator and—generally—be demonstrated to those around in either the stomach or the duodenum; and one of these cases was

one of hydatid of the liver, presenting beneath the gastro-hepatic omentum, not sufficiently large to give any outward sign of its presence, but depressing the stomach and hampering its action. In this connexion, also, the immense assistance rendered by radiography must be acknowledged. It has, in all cases in which its aid has been sought, never failed to throw light upon points not previously clear.

I have said that generally these lesions were demonstrable to onlookers, but there is, and, I suggest, must be, a limitation to this. No operator to-day would permit any more fingers in the abdominal wound than were absolutely necessary. Demonstration by touch, therefore, must be confined to the operator and his assistants. The only possible general verification must be that of sight. Of course, if there is marked thickening in an area which can be brought to the surface, this can be seen, or if well-marked whitish discoloration is present, as is usually the case, this is equally plain, but these conditions are not always present. In one case in which repeated attacks of haematemesis and melaena had greatly reduced the patient, and in which on operation a small crater could be plainly felt both by myself and my assistant in the lower anterior portion of the first segment of the duodenum, it was impossible to prove to those around its existence without unjustifiably increasing the risks to the patient. The results of the operation in immediate relief which has continued now for three years, during which the patient has been in perfect health, are as good proof of the necessity of the work as any number of opinions from bystanders whose knowledge may sometimes be incomplete.

Of the remaining 9 cases, in 2 no lesion could be found in the upper abdomen; in both the abdomen was closed without anything more being done. One of these has disappeared; the other returned twelve months later with precisely the same symptoms, for which he urgently craved relief. His abdomen was reopened, and still no organic lesion in this area was discoverable. At that time, attention had not been called to the possibility of an appendical explanation; there had been no symptoms suggesting the presence of a diseased appendix, and gastro-jejunostomy was performed with the idea that some ulcer must be present, although we were unable to localize it. I can only surmise that this must have been the case, for the previous symptoms of pain after food with recurrent vomiting ceased from that time, and the patient perfectly recovered and gained in weight. The result could scarcely be due to auto-suggestion, otherwise the first operation, of the details of which he was in ignorance, would have been equally effective, and its failure was complete.

In the remaining 7 cases, adhesions were present in all, dragging upon and distorting the duodenum; suggesting the previous existence of some irritant lesion, although after their separation nothing demonstrable could be found. Most of these cases are no longer traceable; one, however, operated upon in November, 1909, by the freeing of adhesions, and no loop posterior gastro-enterostomy, presented himself again recently. He had had 16 months' entire freedom from pain and vomiting; and had been in good health, but during the last month had suffered again from all his old symptoms; at present, the advisability of exploration of his appendix is under consideration, but it is at least possible that fresh contraction of duodenal adhesions may have taken place.

One uses the term "gastro-duodenal" in reference to these ulcers because to the operating surgeon it is, I conceive, a matter of no great moment whether an ulcer is situated above or below the line of the pyloric vein upon which Mr. Moynihan and I believe some others lay so much stress. It may conceivably be so to the physician, whose accuracy in diagnosis may thereby be called in question, but so far as surgical treatment and its results are concerned the exact situation of the lesion he is called upon to treat, so long as it is gastric or duodenal, makes very little difference to either patient or operator, except as to its accessibility. Moreover, even if Mocquot and Houdard¹ had not proved its unreliability as an accurate locator of the pylorus, as this vein is superficially placed in the duodenal wall, and as one of the main features in such cases is the continually recurring spasmodic contraction, and, so to speak, tenesmus of the pyloric antrum, upon which, it would seem, most of the pain experienced depends, it is easily conceivable that

the contained pylorus, like its homologue, the os uteri, may be forced downwards in the ensheathing duodenum, and that so an ulcer beginning in the true pylorus or extreme lower part of the pyloric antrum as it slowly progresses may become fixed against the upper part of the duodenum in a partial intussusception, so that the later stages of the ulceration may therefore be carried on in tissues below this external line.

Whether this be so or not, it is a matter of common experience that even in cases demonstrably gastric—such as, for instance, in "saddle" ulcers affecting and confined to the lesser curvature—the symptoms may closely simulate those of duodenal ulcer. There is frequently the same interval of time between the taking of food and the occurrence of pain, the same vomiting, the same relief afforded by vomiting, by more food, or by alkalis. Hertz has shown that we can no longer explain the onset of pain by the actual contact of food or gastric juice with the ulcerated surface. Even *x-ray* observations, useful as they are, unless actual obstruction due to the contraction of a pyloric scar has taken place, are much the same in gastric as in duodenal ulceration. There is the same exaggerated contraction of the pyloric area whether the point from which the afferent impulses are derived is above or below the pyloric vein, and consequently it is not infrequently the case that the precise location assigned to the ulcer before operation has had to be revised on the operating table.

But, as previously said, this is a matter of slight importance from the operator's point of view. The same incision gives equal access to both. The same measures (excision, infolding, gastro-jejunostomy) are equally applicable to both, and can with equal ease be carried out through the same abdominal opening, with usually the same effective results.

And the same is true of a third class of cases—those of biliary calculi without jaundice or colic, the symptoms of which sometimes fairly closely simulate those of gastro-duodenal ulcer. In these cases the gall bladder may be found to be the seat of a low grade of inflammatory change, around which plastic adhesions have formed, uniting it to the stomach, duodenum, or transverse colon, whilst the bladder itself may or may not contain calculi, and such adhesions, pulling upon, distorting, and contracting the duodenum, may produce symptoms and results closely simulating those of duodenal ulcer. This is so well recognized by operators that to-day no one would be satisfied who had not carefully examined the biliary tract, and especially the gall bladder, before closing the abdominal incision.

Gastric ulcers, duodenal ulcers, gall bladder or gall duct conditions, the existence of bands, kinks, even carcinoma, or other stricture of the upper reaches of the large intestine, and the much rarer small intestine obstructions, such as mesenteric thrombosis, etc., may be verified and frequently dealt with effectively through the upper incision; but when no lesion is found after careful search in this area there remain certain things for which this point of attack is useless, and notably amongst them appendical disease.

It is doubtless true that an appendix may be brought up and examined through a supra-umbilical incision, but this can only safely be done when the caecum is healthy and mobile, when the appendix is itself healthy and consequently needs no operative interference. When the appendix is diseased, perforated, and surrounded by pus, buried in adhesions, or concealed and adherent in one of the fossae about the caecum, it either becomes impossible or, if possible, is scarcely a wise procedure for a surgeon to attempt.

And whilst such a diseased appendix cannot be safely or efficiently dealt with through a substernal incision, it is obviously still less possible to properly close a perforated or chronic lesser curvature ulcer or to perform a gastro-enterostomy through an incision in the right iliac fossa.

In each case the incision must be so placed that the deeper work through it can be best carried out, and though duplication of incisions in the abdominal wall may by some be regarded as of little importance, to the patient they mean a good deal beyond the very obvious increase in the possibility of ventral hernia. After every incision into the peritoneal cavity there is always a certain amount of intra-abdominal plastic adhesion, if only of the

omentum to the line of the wound; these adhesions are, no doubt, in the majority of cases pretty quickly absorbed, but the rate of their absorption differs widely in different patients, and all experienced abdominal surgeons will have seen cases in which complaints have been made for prolonged periods after operation, which were evidently due to the intermittent drag upon transverse colon and stomach produced by these attachments. The possibility of this, always present even after only one section, is doubled after two, and these being in different parts of the abdomen, there is added the possibility of opposing traction upon the same viscus.

For these reasons it will, I think, be admitted that it is important, if it be possible, that the differentiation between cases having an appendical from those having a gastro-duodenal origin should be made before the abdominal wall is incised; and it is in the hope that the suggestions given above may be useful in this direction that the cases so far cited have been brought forward. They are, of course, much too few to warrant any definite conclusions; but if they are corroborated by other observers whom they may stimulate to watch for them, ultimately sufficient evidence may be accumulated to be useful in what is, at present, a somewhat difficult, though a most important, point in diagnosis.

I have already referred to the great assistance rendered by expert radiography. This seems likely to be still more effective in the future if Holzknicht's symptom complexes prove reliable. One of the most unpleasant features of previous methods of obtaining evidence as to the presence of hyper-acidity or hypo-acidity—the use of the stomach tube—may then be almost eliminated. The use of Haudek's double bismuth meal² and of Schwarz's fibro-dermic capsules in conjunction with radioscopy would appear to give all the requisite information.

So far as my cases go, however, some of these methods of obtaining evidence are in the future; but even in the past, as my list shows, a definite diagnosis was made previous to and proved correct by operation in 114 cases out of 124. Even if the 9 cases of acute perforation are eliminated as being based upon sharp physical signs which could hardly be misunderstood, and the 7 of carcinoma, in all of which a mobile hard mass could be felt, there remain 98 cases in which a correct diagnosis can be placed to the credit of the clinicians concerned, and which is very different to "over 50 per cent. of mistakes" which Mr. Moynihan appears to have encountered.

I venture to lay the more stress upon this, since in the great majority of instances the diagnosis was made before the case came into my hands, and I had simply to verify it and act accordingly. The statement as made by Mr. Moynihan cannot but throw doubt upon the diagnostic means available by physicians or upon their use of these means. As my own experience is so entirely different, I feel bound to bring it forward, small as it is, to counteract as far as may be in my power any such effect.

REFERENCES.

¹ *Rev. de chir.*, March 10th, 1912, p. 402. ² *Archives of Roentgen Ray*, June, 1911, p. 6.

THE Department of Tropical Medicine and Hygiene of Tulane University, which is under the direction of Professor Creighton Wellman, has sent out its first research expedition for the study of malaria. The expedition, which is headed by Dr. Charles Cassidy Bass, a member of the department, sailed from New Orleans on April 20th for Central America. The Commission will return to New York in time to report the results of the investigation to the meeting of the American Medical Association.

ACCORDING to the *Canada Lancet* the total number of medical colleges in the world is 320. Of these, 120 are in the United States; 34 in Great Britain and Ireland; 8 in Canada; the "rest of the world" making up the balance of 158. In the United States in 1910-11 there were 19,786 students in all medical schools and colleges, the smallest number since 1900. Of this number 680 were women, of whom 159 graduated. The total number of graduates in the United States in 1911 was 4,273—the smallest number in ten years. The percentage of total graduates is 21.6. In Canada there are 8 regular medical colleges, in 2 of which the teaching is given in French. In the United States 13 medical schools "suspended" or were merged into others during the year. Of the 120 now in existence 101 are regular, 12 homoeopathic, and 7 eclectic.

APPENDICITIS—AND QUICKNESS.

BY

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THE word *quickness* at the head of this note is used in a double sense: first, with regard to the speed in which appendicitis may run its course, and, second, with regard to the need of the surgeon losing no time in getting to work when once the presence of the disease is recognized—or, on good grounds, suspected.

There cannot be much doubt, I think, that cases of appendicitis are being met with with increasing frequency. On all sides one hears of this disease—in the Profession and out of it; in the circle of one's friends and acquaintances; in the first column of the *Times* and in obituary notices. And it often happens that in the first column the reference is worded somewhat thus—"of appendicitis, after operation," as if the sorrowing friends were not quite sure whether the death ought to have been ascribed to the disease or the treatment. I have personal knowledge of not a few of these cases. Indeed, I confess that I have been professionally associated with a share of them, and I know that the wording of some of the notices is, to say the least, misleading. The wording ought to have run somewhat thus—"of appendicitis, after a belated operation," or "of appendicitis, after operation which the surgeon was not allowed to perform until it was too late," or "of appendicitis, after operation, the services of a surgeon not having been called in until medical treatment had been found unavailing." Perhaps the simplest form is the best, however; and I feel sure that if the publisher of the *Times* gave instructions that the word "belated" should in all these announcements precede the word "operation," it would be not only in the cause of truth but also in the interest of future sufferers. In the public mind the three words "appendicitis," "operation," and "death" are unhappily thus connected. If the surgical treatment could always be quick there would be little chance for death. At any rate, this unhappy association of ideas cannot be laid at the door of the surgeon. If he had his way—if the physicians would say, "This case of localized septic disease, or mortification, or abscess, or whatever it is, is not a case for me; it is a purely surgical question," there would be little loss of time and still less of life. Also, if matrons in charge of children at schools, and if parents, could be made to understand that severe "stomach-ache" in a child is not a case for treatment by "first aid," but that a practitioner should at once be called in, things would go more happily. The case is urgent—much more so than it may seem to be—and professional aid should be quickly obtained.

Then, it being admitted that cases of appendicitis are more often met with than formerly, I would ask the question if they are not sometimes found running their course with greater quickness than formerly. At any rate, at the present day the quickness with which some of them develop is remarkable.

A healthy boy of 16 had been working in Dr. Eckenstein's pathological laboratory for two years. He had had during this time no serious illness, but six months ago he had a slight pain in the right side when he ran. There had been no other trouble. On Monday, March 25th last, he was quite himself, feeling hungry and eating well. On Tuesday, 26th, he ate his breakfast as usual, and felt quite right till about 11 o'clock, when he had had some bread-and-butter and cocoa, after which he had slight pain. He was not really ill, however, for he did his work and went on several messages. But between 1 and 1.30 o'clock pain became severe, and when Dr. Eckenstein arrived at the laboratory at 2 o'clock the boy complained of bad "stomach-ache." He was made to lie down; he did not vomit. At 3 o'clock he said that he felt very ill, and he was then sent in a cab into the French Hospital, where, on admission, he was half-unconscious, and his pulse was hardly perceptible. His temperature was 96.2°.

I saw him at 5 o'clock that evening, and found the lower part of the right rectus abdominis contracted and hard. But I gave it as my opinion that there was no perforation