APPENDICITIS:

A PLEA FOR IMMEDIATE OPERATION.*

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IN April of last year a short paper of mine in the BRITISH MEDICAL JOURNAL, in which the word *quickness* was associated with the disease appendicitis, drew forth a good many letters. But the correspondence drifted into a wordy warfare in which the main object of the paper became somewhat obscured. When controversial ammunition seemed to be running short, the Editor closed the discussion, and announced that the subject would be reopened at an evening's debate before the Medical Society of London. And may the hope be expressed that in the forthcoming discussion, speakers will be so good as to confine their remarks as closely as possible to this question—"Is the best result in the treatment of appendicitis to be obtained in the greatest number of cases by immediate operation or by temporizing?"

The question of *when* to operate in a case of appendicitis is often one of extreme anxiety. The general practitioner finds it difficult; so may the operating surgeon. The only person to whom, in my experience, it appears as a simpler matter is the "illustrious" physician. He likes to take time in making up his mind; but whilst he is musing the fire burns. He sometimes prefers to see the presence, or even to await the development, of nearly all the classical signs of appendicitis before giving his consent to an operation, and his help in such circumstances is apt to be an embarrassment to the family doctor and to the surgeon, and to prejudice the patient's prospect of recovery. I have deliberately used the word *illustrious* in connexion with the physician, so that no physician may take it to himself that there is anything personal in the matter—unless, indeed, he deems himself to be really "illustrious." Perhaps, after all, the *illustrious* physician does not actually exist, any more than the illustrious surgeon—that he is but a figment of imagination—so no slur can possibly be conveyed by my words on any individual Fellow of the Sister College.

I will go so far as to say that patients with acute or subacute abdominal troubles ought not to be considered as medical cases at all. I remember some years ago a physician to a children's hospital writing upon the subject of intussusception, and speaking slightly of what he called the *apotheosis* of surgical measures in the treatment of that disease. But if every child with intussusception were submitted to operation as soon as the diagnosis was made, much of the terror of this disease would be removed. Surely it is safer to deal with an intussusception directly and gently with a surgical finger and thumb, than to try and unravel the intestinal sheathing by forcible and blind distension of the large intestine. But that is not the question for this evening, and I drag it in only to strengthen my claim that true progress in acute abdominal disease is in the line of quick surgical assistance. Acute or subacute disease of the appendix is no more a "physician's case" than is one of septic gangrene of the foot, whitlow, or strangulated hernia, to each of which diseases, by-the-by, appendicitis has considerable pathological resemblance.

"UNNECESSARY" DEATHS.

If we look around the circle of our personal friends and acquaintances, say of the last twenty years, we can scarcely fail to realize the fact that a considerable number—or, at any rate, several—have dropped out as the result of blood poisoning started by disease of the appendix. Several colleagues and friends of my own have thus needlessly perished. Indeed, medical men, who in my opinion, ought to enjoy an exemption from all disease, have paid a heavy toll to appendicitis. Not a few have been rescued by prompt operation, but too many have not accepted for themselves that definite line of treatment which, in like circumstances, they would unhesitatingly recommend to those for whose health they were responsible. But

unfortunately, medical men make, as a rule, bad patients—bad in this sense, that they do not readily hand themselves over, bodily and entirely, to their *confrères*, and bad also in that the *confrère*, when he has undertaken entire charge, is apt to hesitate to insist upon an extreme measure lest his views should fail to meet with the full acceptance of his friend. The adjective which I have applied to most of these deaths as "unnecessary" would not so readily be applied to a death from typhoid fever, cancer of the liver, or pneumonia, for instance, but it was unnecessary in that if only an early operation had been resorted to no calamity would probably have taken place. In Surgery, as in the affairs of the State, what is to be desired is the greatest good for the greatest number; and if we could have back amongst us those friends whom uncontrolled appendicular disease has taken away, and could start treatment afresh, and begin it by early removal of the inflamed appendix, many of them no doubt would still be with us. But, unfortunately, the nature of our work is such that we cannot have our failures back and try them over again in a different manner. The barrister who is not satisfied with the result which his conduct of a case has received from any particular Judge, can take the case up to another court and have it tried over again, altering his treatment, may be, and securing, perhaps, a different verdict. But there is no Court of Appeal for the surgeon who has been unsuccessful in his management of a case. It behoves him, therefore, so to act that he may take no needless risk when entering into a contest with his great Adversary, the Man with the Scythe. Nearly all these deaths, I insist, were unnecessary, and the imaginary illustrious physician would himself admit, as he looks back, that not a few of the cases which he has seen in consultation might have been saved if earlier operation had been resorted to. Though there is no Court of Appeal open to the unsuccessful operator, the physician must feel that *his* branch of the Profession is less closely shut in, and I can scarcely imagine the physician, in his practice, being placed in a position of such intense anxiety as is the operating surgeon when he is suddenly called upon to insist upon the necessity of an operation in a case of appendicitis, whilst surrounded by a group of the patient's friends and relations unconscious of near danger, and expecting to hear smooth words.

UNCERTAINTY CONCERNING ACTUAL CONDITION OF
APPENDIX.

Appendicitis is different from most other acute diseases in this, that one cannot tell exactly what is the state of affairs without making an incision. The senses are prevented in their working, in that the deeply-lying appendix is unapproachable. In the case of pneumonia, bronchitis, or heart disease the ear tells precisely what is wrong and how things are going; when the liver, the kidney, or the bladder is in trouble the sense of touch imparts valuable or precise information, whilst in most cases the eye gives important help. But an inflamed appendix can no more be felt than seen, and it is impossible to inform oneself of its exact condition. Holmes, the poet and physiologist, suggestively remarked that one cannot tell what wood a table is made of until he lifts up the cloth. And so it is with the disease in question: one cannot tell the exact state of the appendix until it has been exposed to view by operation.

I should think that no part of the body has caused so many surgical surprises as the appendix. In one case the symptoms of disease have been uncertain, or definite but slight; and when the surgeon exposes the appendix he finds it mortified. In another case he thinks that he can distinctly feel it in the iliac fossa; but in the operation not only is it absent from its proper situation, but, after half an hour's anxious search, he finds it in the depths of the pelvis or tucked up behind the liver.

In other cases, where the symptoms have been unmistakable and even acute, much to his surprise, the surgeon finds nothing worse than a little catarrhal inflammation in the vermiform process. But the commonest surprise of all is the discovery of a perforated appendix when the symptoms have been slight and the operation has, by good fortune, been undertaken early. I think that the time will come, and that shortly, when these perilous associations of appendicitis will be obviated;

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this, however, can only be by a general agreement that no case ought to be allowed to drift, but that operation should be resorted to as soon as the presence of disease is recognized.

THE "QUIET STAGE."

It is generally considered that operations done on about the fifth or sixth day of the disease have a particularly high mortality. The explanation is simple: precious time has been lost. It does not mean that the surgeon is not to operate on the fifth or sixth, or any other day: it means that the disease has gone on developing from, perhaps, an apparently simple beginning, that by this time, as likely as not, an abscess has formed, and that the surgeon's chance is by so much the worse. Further, it does not mean that if the operation is postponed to the seventh, or eighth, or to any other day, the chances of recovery would be better. With, or without operation the patient may die; but the surgeon must do his best without regard to omens or statistics. It is out of the question now that he could advise waiting for the oncoming of the "quiet stage" before operating. The quiet stage in such a case may be nothing less than the silence of death itself. There would be no "fifth" or "sixth" or any other ominous day in the course of an appendicitis if operation had been promptly resorted to. And as for the so-called "quiet stage," I think it a misfortune that the specious term has ever been applied to appendicitis. But it has a great attraction; and even in medical conversation it is often spoken of as if there were actually a period in the course of the disease in which all urgent symptoms, local and general, passed away, and Nature seemed to be pausing in order that the surgeon might have a free and unhampered chance of putting a happy end to the trouble. Of course, in many cases the urgent symptoms do so clear up, but who is to know whether in any individual case they are going to subside or to rush forward with hurricane speed? No one can possibly tell; and it is because of this uncertainty that recourse to immediate operation offers the greater safety. One hears people talking of the oncoming of the quiet stage in appendicitis as if it were as clearly marked in the pathological timetable as is the crisis in pneumonia, or the fall of temperature in a remittent fever. It may prove, however, but a Will-o'-the-wisp.

WALLING OFF OF THE APPENDIX.

Associated with the theory of a "quiet stage" in the general run of cases of appendicitis is that of a "walling off" of the area of disease. In some cases there is, no doubt, a walling off, and it is pleasant when operating on them to find the appendix shut off and lying handy in a small abscess. But in hurricane cases there can be no attempt at a walling off. Nature seems to be taken by surprise and robbed of all chance of building up protective earthworks. One could scarcely expect a gangrenous appendix to glue itself to neighbouring coils of bowel, or to cause the production of helpful plastic lymph. In these furious cases there is usually no attempt at "walling off," so the germ-laden, sero-purulent exudation may be found tracking across to the opposite side, or draining down into the pelvis. There is evidently no more chance for a "walling off" than for the on-coming of the "quiet stage."

A FOOL'S PARADISE.

There is apt to be a Fool's Paradise stage in appendicitis, and it may come early or late in the course of the disease. Its occurrence is somewhat in this manner: A patient has been complaining of pains in the abdomen for a day or two, with some slight tenderness in the right iliac fossa; the pulse has been, perhaps, at about 100 to 120, and the temperature at 101° F. After a badish night the man wakes up and finds that the pains have gone, and that he is better in every way. The pulse has dropped, may be, to 90; the temperature is a degree lower, and the man's appearance is much better. His nearest relation, who has been in to see him, is delighted with his improvement. The nurse also recognizes a great change, and the family doctor admits that since his visit of the previous night a marked alteration has taken place.

But in spite of all this, the lower part of the right rectus remains motionless or rigid; there is still a resistance in

the other muscles over the iliac fossa, and some tenderness on pressure over the caecal region still remains. The patient is not actually better; he is worse. The state of his pulse and of his temperature is of no real clinical value—it is, on the other hand, actually misleading, and the sensations and the aspect of the patient are certainly not to be taken as indications of improvement in the presence of persistent rigidity of the lower part of the abdominal wall. What exactly has happened to produce this sudden change one cannot say. As likely as not, the swollen appendix has given way to internal pressure, and some thick muco-purulent fluid, or even a solid concretion, has escaped. Or it may be that an abscess in, or close to, the appendix has burst its bonds. At any rate, some deeply seated tension has been relieved and quiet has been restored—at least for a time.

This remission of symptoms is not seen in the course of every case of appendicitis, but it is fairly common, and its occurrence is apt to be fraught with great danger, especially if it so happens that the consultation with the physician has been arranged for that particular morning.

Of all those who are in connexion with the case, the surgeon is the least likely to be deceived. The continued rigidity of the abdominal muscles (which probably is still marked) is evidence to him that the storm-warning must not be lowered, although some heavy clouds have been rolled away and the sky looks brighter. He is still anxious to open the abdomen and so to assure himself; but in the altered circumstances he may be tempted to give way. Indeed, unless he is unusually firm—obstinate, his friends call it—he *will* give way. And perhaps by night the urgent symptoms have returned, the patient breaks out in a sweat, or has a rigor, and after a loss of twenty-four precious hours, leave to perform the necessary operation is given. The surgeon then finds a diffuse abscess, and possibly the patient is so bad that he dare not venture to search for the ruptured appendix. How greatly does he then regret that he did not open the abdomen as soon as the diagnosis was definitely made!

If only the figures from Nature's clinical case-book could be shown upon the blackboard of how many times, say in the last year, the abdomen was opened too early in appendicitis, and how many times too late, there would be no need for me to be appealing for more resolution and promptness in the treatment of this disease.

DANGER OF WAITING.

In the correspondence to which I have referred, Dr. F. J. Dixon urged that it was better "to take a little increased risk by waiting than subject a great many patients to unnecessary operations." But unfortunately the man who is waiting cannot measure or control the risk to which he is subjecting his patient. A delay of a few hours in one case may prove fatal; in another case it may do no harm; but as one cannot possibly tell in which it may be harmful, delay is best avoided altogether. Dr. Dixon rightly hopes that the surgeon would not be in such haste to operate as to open the abdomen for a passing attack of colic. Such haste as that would, indeed, be blameworthy; but if in any case at a consultation held a few hours later, it could not be positively settled whether the appendix was in trouble or not, the greatest safety would be found in looking at it. In a case of doubt, localization of the symptoms of "colic" in the right iliac fossa should render one anxious to exclude appendicitis, and this can be done only by making a small incision.

Mr. Paterson wrote that fifteen hundred deaths take place in England and Wales every year from appendicitis—"unnecessary deaths," I have called them. If all of these cases could be diagnosed and operated on straightway, how many could be saved? Why not every one? And the only reason that can be urged against their all having the benefit of an immediate operation is a vague fear that, if the practitioner were to make it part of his working creed that such treatment was advisable, he and his surgical associates might be regarded as needlessly enterprising, or "too fond of the knife"—to use a common expression. But if, as would happen as the result of their treatment, pretty nearly every one of their cases got well, it would not, after all, greatly matter.

When every practitioner holds these views the Golden Age in Surgery will have begun to dawn. And then the operator who has his fair share of cases of appendicitis

throughout the year will be able to say at the end of it "I have not lost a single case, because I have got them all early"! And this will be by the family doctor, the physician and the surgeon all agreeing that as soon as ever the diagnosis is made that an appendix is inflamed it should be removed; and that if there is doubt about the diagnosis it must be settled by the making of an incision, the making of the incision being part of the scheme for arriving at a sure diagnosis—just as one employs the *x* rays in an obscure case of hip injury.

APPENDICITIS AND THE PUBLIC.

But before this improvement can take place public opinion will also have to be educated. At present the greeting given by the friends to the surgeon who has been called in is apt to be, "We do hope that you will not think it necessary to operate." The mention of the word "appendicitis" has already caused alarm in the household, and the people have heard of so many deaths from that complaint after operation that they are inclined to attribute the fatal result to the operation rather than to the disease. Our Profession recognizes the fact that it is not well for the Public to be kept ignorant on medical matters, and from the platform and by the newspapers much useful medical knowledge is being constantly and widely imparted. Thus, on such questions as the Listerian method, hygiene, food and drink, tuberculosis, and infection the public have learnt much, and the time has now come that they should be told something about the danger of delay in appendicitis; that in the case of acute or obscure pain in the abdomen they ought at once send for their doctor, and if he advises that a surgeon be called in, no opposition should be urged to the proposal of an operation. They should be made to understand that it is not the operation but the delay in performing it to which a fatal result should be generally attributed.

Not long since I was called to operate on a boy from a large school with whose obscure abdominal pains the Matron had deemed herself competent to deal! Persons with abdominal pains are not cases suitable for treatment by Matrons or First Aiders; for every case of the kind the doctor should be *at once* called in. If after making his examination he is able to say that the complaint is not serious, so much the better. If, on the other hand, he finds the appendix at fault, the case at once becomes serious; and neither he nor anyone else can say how serious it may prove if it is allowed to drift.

TWO SERIES OF CASES.

In imagination let us take a hundred cases of appendicitis, from the beginning of their manifest infection, and form a rough estimate of the course which they will run, basing our guess on what we have seen in other instances. It might be fair to suggest that 30 of them would probably get well with what is called "medical treatment." This might be too large a proportion, but it may pass. Of the 70 remaining cases perhaps ten might have subsequent slight local troubles, from which they also may get quite well without active help, whilst an equal number might have recurring attacks which rendered them chronic dyspeptics, or even, from time to time, suddenly and most inconveniently took them from their occupation and threatened them with disaster. At last, finding the appendix a constant source of worry and anxiety, they had it removed when the trouble was in the "quiet stage." Accepting this estimate, there are still 50 cases left which will not fall into any one of those three groups. Five or six of them, perhaps, will go on with alarming rapidity, and when a day or two later the abdomen is opened—tardily opened, I will say—the appendix will be found gangrenous or perforated, with, may be, an unsuspected abscess in its neighbourhood. It matters not who the surgeon is who operates, some of those patients will certainly die, the proportion being settled, apparently, by blind chance. Of the remaining serious cases which do not run a hurricane course, some will be associated, perhaps, with subphrenic abscess, some with pelvic abscess, some with diffuse suppuration of the abdomen, with intestinal obstruction, or with septic intoxication. The list of the later complications of neglected appendicitis is long and appalling, and they claim a large number of victims. They ought all to have been avoided. It is impossible even to make a guess of the actual figure

of the fatal cases, so, being unknown, let it be called *x*—an *x* percentage out of the fifty is lost.

Now, by way of contrast, let another hundred cases of appendicitis in the earliest stage be taken, and let every one of them be operated on as soon as the diagnosis is made. By the light of our former series, it is at once seen that 40 cases have been submitted to operation which would have recovered without surgical aid. I admit it. But has any harm been done by operating? Have any people been wronged by the operation or any surgical principles violated? At any rate, those people, 40 of them (for they have all recovered), will not run the risk of having appendicitis again—and that is something to be thankful for. Then, by the early operation, we have put right those cases of slight relapsing forms of the disease; these ten people have been saved the misery of an annoying chronic dyspepsia—which is a common, and often unrecognized, complication of a lurking appendicitis. We have made those twenty persons absolutely safe and happy. There yet remain 50 individuals who, in the other series, became the subject of local and diffuse abscess in the abdomen and pelvis, or were attacked by some form of blood poisoning. We have got them also safe, every one. And we have not lost a single case out of the hundred—because the appendix was removed as soon as it was found to be diseased. What a contrast between the two series! Yet in the beginning the patients were all alike—all apparently simple cases of appendicitis. There can, I think, be no difference of opinion on the subject—*x* per cent. of the first lot of cases was lost because of want of surgical enterprise, whilst not a single death occurred in the second series. So that early operation in appendicitis gives *x* per cent. the better result.

Then, why is it that early operation in appendicitis is not the rule? The reply may be that it is all very well to talk about *series of cases*, but when the family doctor is in attendance on any particular case, and is surrounded by anxious parents and apprehensive and criticizing friends, he has to disregard the average and think only of the *individual*. That, in other words, circumstances alter cases. Still, if circumstances do alter cases, they ought not to disturb the principles on which surgical cases should be treated. But hitherto there has been no principle laid down by general professional consent and teaching in England as to what should be the rule and guide in the treatment of appendicitis. But it must come ere long. And when it comes it will be, I think, in some such form as this, "As soon as it appears fairly certain that the appendix is inflamed it should be removed by operation." The rule of treatment should be made as definite and rigid as is that for the treatment of a strangulated hernia or a cancer of the breast.

STEALTHY APPENDICITIS.

There is a small group of cases of appendicitis of extreme interest and importance to which special attention should be drawn in a paper of this sort. Two or three of them, I dare say, might be found in every hundred cases, and they come like a thief in the night. Let me give an imaginary clinical sketch of one of them:—An athletic young man who has never known a day's serious illness, has been for a long bicycle ride, and, returning home, has eaten a hearty supper, and gone to bed dead tired. In the night he wakes up feeling very ill; he vomits, and then, finding himself much better, goes back to bed and falls asleep. But in the morning he is not inclined to get up, and as he complains of pain, his mother calls in the doctor, and, meeting him in the hall, says that the boy had eaten something for supper which made him sick; that he is better now, but she hopes the doctor will not let him go to the office that day. He looks fairly well, and he is lying flat on his back with his knees not drawn up; his pulse-rate is scarcely quickened, and his temperature is but slightly above normal. May be, his face is a little flushed and anxious; he has some slight tenderness in the right iliac fossa but there is no swelling to be made out. Perhaps there is some rigidity of the neighbouring muscles. He is strictly dieted, and a fomentation is applied all over the abdomen. In the evening he is not so well, but he has not vomited again, and he says that the fomentations have eased his pain. The doctor is by no means happy about him, but he says some cheering words, and promises to come round early in the morning

to see him. The patient passes a very restless night, and when the doctor examines him he finds that there is a marked contraction of the lower part of the right rectus and more tenderness in the fossa. An operation is talked about, but, for some reason or another, it is not done till the evening. A gangrenous and perforated appendix is then removed, and a large quantity of foul sero-purulent fluid wells up; a drainage tube is inserted, and fomentations are reapplied.

What is the prognosis? Is it not quite likely that the lad will die? We all meet with these cases, quiet and deceiving in their origin, and formidably quick in their course. The surgeon wishes that he could have been called in the day before; but if he had been called in would he have been allowed to operate? If his rule had been to urge operation in every case as soon as he suspected the existence of appendicitis, and he had been allowed to follow it, he would certainly have increased the chances of recovery of this man. For aught that one knows, every early case of appendicitis may be going to turn out like this—no one can tell. Probably it is always a question of the virulence of the germs or of the vulnerability of the tissues—or both—which determines the pace at which the local changes will work out. And as one cannot possibly have any knowledge on either point, it will be far safer that the surgeon should act as if he suspected in each case that he had virulent germs and vulnerable tissues to deal with. He should banish all hesitation.

"WHEN TO OPERATE IN APPENDICITIS."

Supposing that there is a surgeon here who does not hold these views in connexion with the treatment of appendicitis, and some one asks him, as a matter of information, what are his guides as to when an operation should be advised, he may not find it easy to reply. The pulse and temperature may be normal, and the patient's aspect may be good although the disease is far advanced, and there may be no fullness in the iliac fossa and but slight resistance, yet the case is in urgent need of help. It is unsurgical to wait for some beacon-flash telling him when in any particular case he should advise operation, and I think that he would find it difficult to satisfy his questioner. On the other hand, if he held the opinion which has been forced upon most of us, he would simply reply, "I would urge operation as soon as ever I suspected that the appendix was inflamed." That is a clear answer; it cannot be misunderstood.

And amongst the many great advantages of the early operation is this, that no risk is run of the need of any of those secondary procedures which are apt to be called for if the case is allowed to drift on to suppuration. After the early operation the wound is closed once and for all; no drainage tube is used, and there is no fear of a future ventral hernia or of a bulging at the scar, of inflammatory adhesions or intestinal obstruction.

"LOOK AND SEE."

It is constantly argued that if the appendix is removed as soon as it is believed to be inflamed, some cases will be submitted to operation in which, after all, no disease of the appendix is discoverable, and that many others will be so dealt with which might probably have got well without any active surgical help. This I fully admit; but it is the only argument which can be raised against the early operation. However, the admission by no means weakens my appeal. We sometimes hear the same sort of criticism made in the course of our practice by persons who have no claim to express any opinion of value in the matter—"This boy," says a proud mother, "had an attack of stomach-ache last month, and the doctor wanted to have him operated on. But his father wouldn't allow it, and the boy has been perfectly well ever since!" That valiant decision exalted the man in his wife's opinion, and at the doctor's expense; but my sympathy is all with the doctor. And it is more than likely that if the boy got another attack of the kind, and the father again stayed the surgeon's hand, the result would be disastrous, and the father might regret that he had ever stood in the way of operation.—The conclusion of an attack of appendicitis is not infrequently associated with regret.

Let me briefly give a clinical sketch of the imaginary case just mentioned:—The boy had been sitting on damp

grass watching a cricket match, and next day he was seized with acute catarrhal appendicitis. The doctor found him with a pulse of about 120; his respirations were quick: he had vomited, and he complained of pain and tenderness in the right iliac fossa. The doctor, perhaps, had recently had a case with like symptoms in which, when an operation was tardily resorted to, a mortified appendix was found in a stinking abscess, and the patient had sunk. He dreaded a repetition of the scene, and he was anxious to be in time on this occasion. And he was right!

It is because of the two-fold uncertainty which must always be associated with appendicitis—uncertainty as to the actual state of the disease, and uncertainty as to the course which it will take—that the surgeon should be anxious to *look and see*. But, as it is, there is no general agreement as to what should be the exact procedure. One medical man may urge treatment by rest and opium, because he has seen several patients get satisfactorily over an attack when thus dealt with. Another may insist that treatment should be by castor-oil or Epsom salts, because he has known it answer well; and a third will swear by starvation, fomentation, and enema. And no one can affirm that in any case the adoption of one of these methods may not meet with success. But after dealing with a few more cases on such lines he would scarcely fail to be pulled up short, and to find his faith rudely shaken.

A whist-player with five trumps in his hand may win the trick although he leads from his short suit, but a fuller acquaintance with the game will prove to him that it is not safe play. In the course of time the experience of the many has been crystallized out into *Rules*, which intelligent players find it to their advantage to observe. And so it is in Surgery: out of the experience of the many, definite principles of practice are constantly being laid down to become in due course accepted as *Rules*. And, judging from what one sees and hears, the Rule is gradually being established in this country that a case of appendicitis should be operated on as soon as ever the diagnosis is made—within the first twelve hours, if possible—that the patient will then not only get well, *almost for certain*, but will get well very quickly.

EXPLORATORY INCISION.

But would it really be a terrible calamity if an incision were made over a suspected appendix in a case in which it was not actually affected? For my own part, I give the question an unhesitating "No." A cleanly-made opening into the abdomen can do no harm, and I look forward to the time when it will be no unusual thing to hear that such and such a surgeon has been looking into an abdomen, or, to be more precise, has been passing his finger into an abdomen for this purpose, and that, after all, there was nothing wrong with the appendix. The dread of advising an incision in a case where the appendix might be found little or not at all affected, is greatly exaggerated. The surgeon's reputation as a diagnostician is of far less importance than the safety of the patient, and if his fruitless act be called a *mistake*, at any rate, it is a mistake on the right side. The surgeon who is haunted by the fear of making a mistake has made an unfortunate choice of his Profession. I can remember the time when a surgeon was afraid to cut into a mass of inflamed tissues lest, by chance, there should be no pus found. He preferred to "wait for fluctuation" (the expression even yet sounds familiar). But now that one understands the danger of acute inflammation and of tension, one unhesitatingly makes a free incision into an area of acute cellulitis so as to end painful disease and diminish the risk of sloughing, and of other effects yet more serious. But the same surgeon is still apt to be content to dally with, and hover helplessly over, an inflamed appendix because he is not "quite sure." In politics the motto "wait and see" may suffice: for the surgeon in a case of possible appendicitis it should be "*Look and See*," and Medicine and Surgery will not be in a satisfactory state as regards the treatment of appendicitis until the prompt making of a small iliac incision becomes part of the routine treatment. An inch incision through the abdominal muscles will suffice if it is made quite early, but an incision of 6 in. or more may prove ineffectual if it is delayed.

I have long since made up my mind what I shall do if I, in my turn, become the subject of appendicitis—I shall forthwith call in a surgical friend, and if he says "Yes, I think that the appendix is at fault," I shall ask him if he would mind my getting another surgeon (not a physician) to come and see me with him for the purpose of confirmation; and on the diagnosis being confirmed, I shall beg him *at once* to operate. And if these principles were adopted in all cases of appendicitis, would not the mortality of the disease be lowered by more than 90 per cent.? I think so.

I have not hurriedly formed the opinion that the greatest safety in appendicitis is in the early operation. And certainly I did not start with that opinion: I have been steadily driven to it. I have seen a fair share of cases of appendicitis, with some of which I have been associated from the beginning of the attack; to more I have been called in when the disease had already made considerable headway, and for others my help has been asked only towards the close of the chapter. And my deliberate opinion is that if it were generally recognized that safety lay in prompt operation, the present high death-rate in the disease, as I have already said, would be greatly lowered.

At various times in our professional life we have to study our bearings, take soundings, and re-shape our course. How greatly thus has our treatment of cancer of the breast, for instance, improved in recent years, for even if there is a slight margin of doubt in that diagnosis we now urge immediate and complete operation. There is no waiting for the appearance of signs which shall render the diagnosis so clear that there is no chance of mistaking a chronic inflammatory thickening for a malignant infiltration; the patient and not the tumour is now given the benefit of the doubt, and the improvement in our results has, in consequence, been most remarkable. In diphtheria, too, antitoxin is injected without a moment's delay; and in the case of suspected renal calculus the kidney is explored for a likely stone even if the *x* rays fail to reveal its presence.

MISLEADING CONDITIONS.

Whether all the views advocated in this paper prove acceptable or not, there is, at any rate, one point which ought to receive a more general recognition: it is the reference to the fact that there may be a comparative absence of clinical signs in the presence of advanced and perilous disease in the appendix. It does not at present seem to be universally realized that the pulse and temperature of a person may be normal in spite of the appendix being gangrenous or perforated; that in some of these stealthy and rapid cases there is absolutely no fullness in the fossa; and that if the chief pathological change in the appendix is gangrene, there need be very little local tenderness—for there is no sensation in dead tissue; that as there is no sensation in a mortified appendix, there need be no reflex rigidity of the abdominal muscles covering the fossa; that there being no excitement of pulse or temperature, and little or no local pain or tenderness, the patient may make light of his trouble and that his aspect may be deceptively cheerful. Thus, in the most dangerous class of cases of appendicitis there may be but little either to cause anxiety or to attract serious attention. Every operating surgeon will bear one out in this, and will agree that, for the happiness of all concerned, the family doctor should never sit pondering over his case of suspected appendicitis, but should *at once* call in surgical aid. If the surgeon then says that because he is not sure he would rather wait a little, at any rate, whatever happens, the doctor will not afterwards have anything to reproach himself with. But I do not think that there are many surgeons who would counsel delay; we have all seen enough of the danger of waiting.

In no respect, I think, has improvement in surgical treatment in the last quarter of a century been more marked than in that of strangulated hernia. Taxis and the hot bath happily have become things of the past. The general practitioner sends his patient into the hospital without hesitation or delay, or calls in the surgeon for immediate operation: and instead of there being now a high death-rate from strangulated hernia, statistics would show a most remarkable improvement. And what, in my opinion, is wanted at the present time is a similar

waking up of the profession with regard to the treatment of appendicitis.

We have heard of the sailor who, when his ship was in action, saw an unexploded shell, with a time fuse attached, land upon the deck. He did not wait to see the development of events, but, taking the shell up in his arms, dropped it over the ship's side out of harm's way. An inflamed appendix is a shell with a lighted time fuse, and though in any case it may happily fail to explode, it is far safer to lift it out at once and drop it overboard.

In the course of this paper scarcely a word has been said as regards alternative methods of treatment, for, in my opinion, *there is no place for the discussion of general measures until after the inflamed appendix is out.*

Whilst waiting for leave to operate, nothing whatever should be given by the mouth, and no fomentation or water-dressing should be used, because wetting the skin spoils the antiseptic effect of the tincture of iodine, which should at once be freely and widely painted over the region in preparation for operation. But there will be plenty of scope for treatment after the appendix has been removed, and especially so in those cases in which the blood or the peritoneum has already been poisoned by absorption.

The discussion at the present time should be directed towards the solution of the important question as to whether immediate operation or temporizing ought to be the rule in the treatment of appendicitis. If the answer is in favour of immediate operation, such subjects as that of the choice of anaesthetic, the routine washing out of the stomach before the patient leaves the table, the administration of opium, or of purgatives, may well be referred to; but the main question should first be settled. And in a meeting such as this the answer will be likely to prove useful towards the drawing up of a Rule for the guidance of the practitioner in the treatment of every case of appendicitis.

THE FUNCTION OF THE APPENDIX AND THE ORIGIN OF APPENDICITIS.

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SHORTLY after his death, which took place so lately, a paper by Mr. C. B. Keetley was published in the *Annals of Surgery* about the function and value of the appendix. Both he and Sir William Macewen regard the appendix as an actively useful and valuable organ not to be sacrificed lightly. Their opinions are based largely upon clinical, and therefore complicated, observations. Other observers, such as Mr. W. J. Mayo, incline to the other extreme—that the value and function of the appendix is so small that it is absolutely inconsiderable when compared to the dangers which it may cause. When the enormous number of people are considered who have had their appendix removed and are in perfect health, one cannot but sympathize with the latter view put forward. Yet as a matter of scientific interest the appendix has a function; and, when removed, that function is undertaken by neighbouring tissue, and the patient is relieved of a passive tube containing actively poisonous material. This view I advocated in the Erasmus Wilson Lectures delivered before the Royal College of Surgeons in 1904,¹ and, in view of Mr. Keetley's recent death, shall content myself with restating them. This is done in four sections: The natural history of the ileo-caecal region, the physiology of the appendix, the development of the appendix, and the pathology of chronic typhlitis and appendicitis.

The Natural History of the Ileo-caecal Region.

Food in the mouth is reduced by the action of the teeth to a more or less pulpy condition, in which state it enters the stomach, where it is further broken into fragments by the action of the hydrochloric acid, pepsin, and churning muscular movements. The casein of our primitive natural food—milk—is precipitated and also fragmented. The