INTRA-ABDOMINAL CRISES

KENNETH D. KEELE

M.D., F.R.C.P.

Consultant Physician, Ashford Hospital, Middlesex (Staines Group)

and

NORMAN M. MATHESON

F.R.C.S., M.R.C.P., F.A.C.S.

Consultant Surgeon, Ashford Hospital, Middlesex (Staines Group)

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PREFACE

ONE of the commonest anxieties of doctors in practice is that produced by a patient with abdominal pain and vomiting. There is no way of telling at first whether such symptoms are mere trivialities or of more serious significance. Only the next few hours will tell. These anxieties are not confined to the patient in his home; they go with him if he is sent to hospital, and it is here that we have experienced the difficulties and disquiet aroused by such problems.

We have called acute cases of abdominal pain and vomiting and so forth intra-abdominal crises; often they are emergencies but not always so. In this book it has been our object to analyse the problem, and to indicate the lines of early management.

For our present purpose an intra-abdominal crisis is considered to exist when the symptoms suggest an abdominal emergency. In such cases the urgent diagnostic questions are first, whether the symptoms arise within or outside the abdomen; and secondly, if within, what is the nature and site of the acute disease?

The first problem is one of diagnostic exclusion, one which has received too little attention in relation to abdominal emergencies. But it looms so large in the early stages of abdominal symptoms that we have given it careful consideration.

The second question provides the main theme of the book. For generations intra-abdominal crises have been considered the concern of the surgeon, the physician usually intervening when the surgeon does not wish to operate or when the possibility of extra-abdominal disease arises. We feel that in many cases this practice is not desirable. The more the techniques of radiology and biochemistry advance, the more often do they play a part under conditions of crisis. The significance of their results involves wide possibilities of anatomical and pathological interpretation, just as do other symptoms and signs, with a broadening of the problems of differential diagnosis. Moreover, the assessment of investigations has frequently to be made under far from ideal conditions. Such situations should resolve the different attitudes of physician and surgeon into urgent medico-surgical synthesis.

We would emphasize the truism that abdominal crises do not arise with diagnostic labels attached. Those who deal with them in their earliest stages know this best. The customary classification of such

crises into " medical " and " surgical " is therefore not of great assistance, and is, in fact, conducive to a recognized brand of dangerous misdiagnosis.

Since the earliest hours of such crises are diagnostically the most difficult, they hold the greatest dangers. We have concentrated, therefore, on the data available at this stage, and on management during the period when diagnosis is being reached. We have not entered into details of surgical techniques.

A system has been devised since World War II of a structure of doctors, nurses, ambulances and hospitals, which spreads its network throughout the country in such a way that few patients are more than an hour's journey from a well-equipped centre. We have given some attention to the use of this service in emergency conditions.

It has been well said that in emergencies the eyes, ears and wits can carry the doctor a long way, and sometimes they still have to take him all the way in diagnosis and management. But this does not exonerate us from a thorough appreciation of the facilities in laboratories and x-ray departments now so plentiful in the country. We have therefore given special attention to the use and abuse of such special facilities in intra-abdominal crises.

We ourselves have worked in a hospital taking acute cases " off the street " unselected for purposes of interest, age or speciality. This has given us the impression that there is a need for the presentation of the problem of intra-abdominal crises in this form. We consider it likely that our experience agrees with that of most hospitals. It is our hope, therefore, that this book will be of use to those doctors in general practice, or in the hospitals, who perform the vast bulk of general medicine; for it is they who have to bear the brunt of that most anxious of problems, the intra-abdominal crisis.

We are very conscious of the shifting sands on which antibiotic procedure is at present based.

Procedures vary in different countries, even localities, according to variations in the incidence of resistant bacteria, particularly staphylococci phage type 80; also with the emergence of new antibiotics such as penicillanic acid derivatives. We have therefore recommended antibiotic procedures with which we have had long practical experience, and which are in our hands still effective at the time of writing.

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KENNETH D. KEELE
NORMAN M. MATHESON

CONTENTS

CONTENTS

PART III

Intra-abdominal Crises as part of General Disease

CHAPTER I

THE BACKGROUND

A PATIENT afflicted with symptoms of an intra-abdominal crisis is so overwhelmingly distressed and astonished that his judgment is usually disturbed and his actions are often irrational. From this moment there arises a chain of events which, in the course of the next few hours or days, may even prove fatal. It is therefore of the utmost importance to consider the events which are amenable to control during this critical time. This control is exercised by the persons responsible for dealing with the situation; systematically considered, they are: (1) the patient himself; (2) the first person present after the onset of symptoms, usually a relative or friend; (3) the general practitioner; (4) the ambulance team; and (5) the hospital doctors (*a*) on admission, and (*b*) in the wards.

The very fact that the chain of responsibility for management of an emergency possesses so many links is its gravest weakness, for when time is vital each link is an unavoidable source of delay, and a possible source of confusion. It is often of the greatest importance that this emergency bridge from home to hospital be crossed as quickly and as safely as possible. It is relevant, therefore, to consider more fully the part played by each link in the chain.

THE PATIENT

The existence of an emergency situation can only be appreciated if symptoms are made manifest by the behaviour and speech of the patient. Under certain circumstances his response to the stimuli of abdominal catastrophe may either be absent or so modified as to be misleading. In such conditions the suspicion of emergency conditions must remain high even in the presence of apparently trivial symptoms.

Infants are not only devoid of the power of speech but appear to be relatively insensitive to pain. Up to the end of the first year they lack the ability to localize pain by gesture. The pain from peritonitis thus produces a picture of distress very similar to that from the point of a safety pin in a misapplied nappy.

At the other extreme of life, in the aged, similar insensitivity to abdominal catastrophe often leads to absence of complaint until the mechanical effects of the lesion appear.

Psychotic patients, disturbed as they may well be with regard to sensation, behaviour, and speech, provide a common and sometimes unavoidable field for delayed diagnosis.

Patients suffering from neurological diseases affecting any part of the sensory paths in peripheral nerve, spinal cord, or cerebrum, may fail to detect the most violent visceral or peritoneal irritation. This is particularly important in cases of neuro-syphilis (tabes dorsalis) and syringomyelia. Following sympathectomy, too, visceral pain ceases to be conducted from the denervated segments.

Drugs such as alcohol, morphine and so on, acting at a cortical or reticular level, by interfering with perception, behaviour and speech, obscure the manifestations of abdominal disease. Similar difficulties arise in acute infectious diseases with their element of delirium, and in severe metabolic crises such as occur with uraemia, diabetes mellitus and adrenal disease.

Individual sensitivity to pain is so great that some persons with normal nervous systems experience only what they describe as " discomfort " with perforation of the appendix, and do not therefore bother to inform others. Minor symptoms in such persons deserve major care.

In short, in the many conditions in which the patient's sensory awareness and behaviour are altered from the physiological norm, early manifestations of an abdominal catastrophe are obscured both from the patient and his doctor, with the result that there is loss of valuable hours in making a diagnosis.

It must be remembered that even in persons with normal neurological and psychological functions, the abdominal crisis itself may be such as to cloud consciousness. This particularly applies to haemorrhage which may well present as mental confusion, especially in the elderly.

THE FIRST OBSERVER, NEAREST RELATIVE OR FRIEND

To achieve an early diagnosis the attitude of the first person to observe the patient is vitally important. This attitude depends upon the observer's intelligence and sympathy.

In the case of parents, sympathy is often more in evidence than intelligence, the natural emotional disturbance on such an occasion being great, and sometimes precipitated by trivialities. Such an irksome example is the mother who takes her infant round to the doctor's house at midnight on account of its " constipation " during the day. Such events, irritating in themselves, are deplorable for the danger of " crying wolf " once too often, as well as for imposing

unnecessary fatigue on the doctor who may well need all his wits in the next few hours for a true emergency. The wise practitioner does well to forestall them by education of parents, which should also be extended to the general public, preferably in the form of a simple code of behaviour. Such rules as " Pain in the belly lasting more than four hours calls for a doctor " are surprisingly absent from most books on home nursing and first aid.

In some instances we have found tragic delay caused not only by ignorance but by surprising lack of sympathy. The most impressive examples of this have nearly always concerned mothers, for whom grown children sometimes show little concern. One such mother was allowed by her family to vomit with abdominal pain throughout the night, aided only by derisive calls from her eldest son's bedroom. By morning, still apologising for disturbing her son, she was *in extremis*. If relatives sometimes fail to act by reason of ignorance and lack of sympathy, how much more may this be expected of the casual observer? There is an almost universal tendency amongst British people to conceal from others their physical distress, especially if it occurs in a train or bus, or whilst walking in the street. This may account for the frequency of the passer-by just ignoring someone in distress. Sometimes, particularly during a festive or convivial occasion, symptoms of distress are attributed to the effects of alcohol, as happened to a man of 43 years who, falling on the floor at a party, was poked and slapped by his friends for some minutes before it was realized that he was dead from cerebral haemorrhage.

Night is danger time for the abdominal case. Since sleep clouds the judgment it is seldom safe to leave a relative to observe the patient through the night, even though he is instructed to call the doctor if symptoms worsen. In such cases the morning often finds a shocked patient, a shattered relative, and a shaken doctor.

THE GENERAL PRACTITIONER

The general practitioner is the first to feel the burden of any confusion and delay produced by errors of judgment on the part of the patient and his friends. Only his personal knowledge of his patients, his positive emotional attitude towards them, and his familiarity with their domestic problems, can minimize these causes of delay. With the practitioner the problem of management includes that of diagnosis, which becomes paramount. In acute diseases diagnosis comprises two clear stages; first, the detection of the existence or otherwise of an emergency, and secondly, the nature of

the emergency. The first is diagnosis with a view to immediate action, and is therefore the more important of the two, but no effort should be spared in attempting to reach the second stage, for it will confirm and perhaps modify significantly the action taken.

Most intra-abdominal crises arise from perforation, obstruction or haemorrhage involving hollow viscera. Perforation and obstruction usually produce their characteristic pain patterns, which persist, and this feature at once serves to classify the case as an emergency. But haemorrhage is often more deceptive, particularly if it is intermittent, when loss of blood may give little clue to the location of its site.

In most cases it is possible to make a diagnosis at the first visit, but if the doctor is called early, as happens more often since the advent of the National Health Service, it may be justifiable to keep the patient under observation for a few hours. In the past, troubles generally arose from seeing a case too late. In recent years, difficulties are increasingly due to seeing the patient too early, before significant symptoms have had time to develop. Unless a second visit is planned, false confidence bred from the negative findings of the first may lead to serious delay in establishing diagnosis.

In practice, observation of the patient has its own dangers; these arise from the time of day, the day of the week, even the season of the year, at which the symptoms appear. A call to a patient with abdominal pain and vomiting at 11 p.m. is a particular hazard. Such a patient may well have been out for his evening meal, and may attribute the symptoms to his own indulgence in favoured but risky dishes, like jellied eels. After an hour's distress he considerately calls the doctor to make sure there is nothing seriously wrong. The doctor's position is difficult. He examines the patient carefully, and finds nothing incompatible with the patient's suggestion that his evening indulgences have upset his stomach. But he knows that in a few hours, about 3 a.m., if these symptoms do not subside the picture may be very different. Observation, incurring a second visit about that time, is obviously an unwelcome thought; such a visit may well be quite unnecessary under the circumstances, a waste of everyone's sleep and peace. He may warn the patient's relative to telephone if the pain does not subside. The patient and relative, reassured, settle down, the relative falling asleep. Not until morning may the patient be found with well-developed signs of peritonitis. It follows that the case that can safely be observed at 11 a.m. is a major risk if seen at 11 p.m.

Similar difficulties in observation are produced by off-duty days and times, and the decision to observe the case further has to

include this factor, as well as the patient's possible refusal to go into hospital, a common event with a mother faced with the certainty of ensuing domestic chaos.

The season of the year is of particular importance in relation to two factors—the state of the roads and public holidays. Combination of snow, fog and night may offer almost insuperable difficulties, not only to the transport of the patient but to the arrival of the doctor. Much as we may criticize our weather forecasters, their prognoses should be kept well in mind by a doctor visiting an abdominal case in an inaccessible part of the country—and inaccessibility is not only due to distance. In our district a number of people live on small islands and house-boats reached only by lane or tow-path, and transport by rowing-boat, though it has been known to be life-saving, is hardly ideal.

Public holidays are of importance because of the inevitable disorganization of normal routines which constitute their very essence. Of all festive seasons, Christmas is the most dangerous to the acute abdominal case, for whom there is a double risk at this time. The alimentary tract is submitted to exceptional qualitative and quantitative stresses from food and drink, the latter exerting its influence also on the judgment of the patient, his friends and relatives. All these factors may well combine to incur delay in management. Only by conscientious planning of duty times in both general and hospital practice may the risks be minimized.

The object of examination at home is diagnosis. Though time may be short and diagnosis obscure, it is most important that the clinical findings should be recorded. They will be of great value at subsequent examination, either in the home or in hospital. Such findings should, of course, be reported in the letter accompanying the patient to hospital. Practitioners should realize how closely their notes are scrutinized in order to establish the time of appearance of some sympton or sign. Brevity is inevitable, and a short statement of symptoms and their times of onset, a brief description of physical signs at a recorded time, with a note as to treatment given, can save a great deal of confusion later, as well as being of immense diagnostic value in a difficult case.

With clear diagnosis of an emergency at first examination, transfer to hospital will not be delayed. With diagnosis uncertain, responsibilities may be shared by a consultant on a domiciliary visit. Unless diagnosis has been clinched, and accepted by those who will be responsible for the management of the case, analgesic drugs such as morphine or pethidine should be withheld, because of their

well-known masking effect on symptoms. If given, such treatment should always be recorded in the note to hospital.

THE EMERGENCY BED SERVICE

If a doctor is told on telephoning the nearest hospital that there is no bed for his patient, he may meet the difficulty in two ways; either by using the Emergency Bed Service (E.B.S.) or by calling in a consultant to share the responsibility of diagnosis and management.

Use may be made of the E.B.S. by telephoning the nearest Bureau. The clerk at the Bed Bureau makes contact with a referee in one of the regional hospital Groups, by whom the case is allotted to a particular hospital, where admission is arranged. Such a procedure, though effective, has certain disadvantages, for the hospital in which the patient finds himself may be some distance from his home, and he is surrounded by doctors who are strange to him and unacquainted with his past medical history. Though many cases are smoothly allotted by the E.B.S., personal co-operation between the patient's own doctor and local hospital staff is usually a happier solution.

Emergency Bed Bureaux exist in many parts of the country; they serve to emphasize the seasonal risks mentioned previously in that many of them are closed on Christmas Day.

THE AMBULANCE SERVICE

When the diagnosis of an abdominal emergency has been made, transfer of the patient to hospital is the next step and in this there are two dangers due to movement and pain; these are particularly relevant to cases of intra-abdominal haemorrhage. The unavoidable movement involved in transport may well exacerbate bleeding, and pain aggravates shock. It is not usual for the same doctor to see the patient both at home and on arrival in hospital. When he does so, he will often be surprised at the change in the patient's state, and fully appreciate the value of skilled stretcher-bearers, the warmth of the ambulance, and smooth driving on the road. Transfer by ambulance is therefore almost always preferable to transfer by private car, and is worth the slight delay involved. Only with children and less urgent adult cases is it justifiable to use a private car.

Should a doctor be confronted with an emergency at a time when he is without his equipment he may, on telephoning for the ambulance, request that the Emergency Equipment Box be sent. This contains morphine, Coramine and adrenaline, with syringes for injection, and is issued for the use of doctors only, on special

demand. For shocked or cyanosed patients the ambulance will also be issued with a " Novox " resuscitation apparatus, consisting of an oxygen cylinder and mask, extremely simply to apply. Carbon-dioxide cylinders are not carried.

Ambulance drivers are instructed to take an emergency case to the nearest hospital suitable for the particular case as judged from the doctor's diagnosis. If the patient wishes to go elsewhere because, for example, he has been attending another hospital, the doctor must decide the issue.

If the patient has been seen at home by the consultant it may be decided that a plain x-ray film of chest or abdomen is necessary. In this case, by pre-arrangement with the X-ray Department the ambulance may deliver the patient there, on his way to the ward. Essential diagnostic information may thus be made available by the time the patient is examined in the ward.

RECEPTION IN HOSPITAL

Casualty.—Hospital reception first involves Casualty Officers who should be of considerable medical seniority. Their duty with regard to an already diagnosed case is to facilitate entry to the correct ward. With an acute case brought in off the street the position corresponds with that of the general practitioner in the patient's home, except that it is easier, since more facilities are usually available to the Casualty Officer for observation. Certain problem cases, however, tend to find their way to the Casualty Department. Patients who have " collapsed " may find their way straight to hospital, the underlying pathology being possibly intra-abdominal bleeding or perforation of a viscus, though a cardiovascular cause is more common. Such cases, if not obviously suitable for the general ward, need to be carefully observed for a period of hours. For this purpose they should be kept in a small Observation Ward.

A second clinical pitfall commonly met with in the Casualty Department is abdominal trauma. Wounds that perforate the abdominal wall present an acceptably serious problem, but those that do not are a perpetual menace, since with minimal bruising a viscus may yet be ruptured. Again, safety of the patient physically and the Casualty Officer legally, lies in a period of observation in a ward provided for that purpose.

Cases of poisoning, whether by alcohol or some other substance, are also brought to Casualty. Whether the patient has vomited or not, whether he says that some suspected tablets were taken hours ago or not, the stomach must be washed out as a routine.

This procedure must never be omitted on the grounds that it is too late to be useful.

In exceptional circumstances Casualty Officers, on being requested to admit an abdominal case, may agree to examine the patient but not necessarily to admit him. This practice is only justifiable as long as the Casualty Officer is fully aware of all the factors which may modify the clinical features in the interval between the two examinations—for example, the silent post-perforation interval with a peptic ulcer, or the effects of antibiotics or analgesics administered; and as long as he informs the practitioner of his decision. On occasion Casualty Officers have been known to accept the diagnosis and the case on the telephone, and reject the patient on examination in Casualty, an action that is not justifiable however little he agrees with the diagnosis. In these circumstances the patient should be admitted for observation, otherwise he is left without medical supervision, as the practitioner will probably not know that his patient has been sent home.

In difficult cases the Casualty Officer should review the findings to the stage of reaching a reasonably accurate differential diagnosis, since it is his concern to decide whether the patient goes to a medical or surgical ward. Erroneous distribution to the wards is the commonest cause of delay within the hospital. Most doctors can recall a diabetic abdomen the diagnosis of which was delayed by reason of referral to a surgical ward; more commonly, perhaps, this occurs with the acute appendix which has found its way into medical wards.

The House Officer.—He is responsible for prompt assessment of the case. He often has the first opportunity to take and put into writing an accurate history of the illness. In taking this he should never forget to keep any accompanying friend or relative until all information has been obtained and confirmed, particularly as to the time of onset of symptoms, and their order of appearance. This first history is often more accurate than those taken subsequently, by which time symptoms have been suggested by previous questions and fears have been aroused by doctors' attitudes. Likewise examination on admission may reveal signs which are later modified, rendering it as important in assessment of progress as the earlier examination of the general practitioner.

The houseman also has the task of mobilizing any necessary special investigations, involving X-ray Department and Pathological Laboratory. It is obviously of first importance that adequate arrangements for a 24-hour service be made in both these departments. Particularly valuable is co-operation with the

Haematological Department in regard to blood grouping and arrangements for transfusions, and the Biochemical Department in providing rapid electrolyte estimations.

Though the houseman has to perform these tasks, the responsibility for their evaluation may be too great for a newly qualified man. This is done by the registrar, who usually will take the case to a firm diagnosis and institute appropriate treatment, whether medical or surgical. The majority of abdominal emergencies, however, find their way into surgical wards before they are completely diagnosed. It is often, therefore, on the surgical side that differential diagnosis from medical conditions becomes vital. It commonly happens that a proportion of such diseases as pneumonia, pleurisy, cardiac infarction, Crohn's disease, dysentery and so on are first examined in surgical wards. Their differentiation may be as difficult as it is important, and it is the registrar's responsibility to recognize first, that the difficulty exists, and secondly that there is need of consultant opinion, medical, surgical, or both. As the population becomes older there is an increasing number of persons over 70 years of age. This means that there is an ever increasing incidence of multiple pathology, and the questions in diagnosis becomes not simply is this A *or* B, but could this be A *and* B? Differential diagnosis in elderly folk presents problems in management which call for co-operation between physician and surgeon. They may tax to the utmost the combined powers even of the most elect.

CHAPTER 2

PRESENTING SYMPTOMS AND ABDOMINAL PAIN

EARLY diagnosis, so vital in patients presenting with abdominal symptoms, can be achieved only through an accurate history and correct interpretation of events. These two steps towards diagnosis pose their own problems: to obtain an accurate history under emergency conditions is by no means always simple; interpretation in its turn requires the marshalling of a knowledge of anatomy and physiology as well as the exercise of inductive capacity in building up the data into a diagnosis.

THE HISTORY

More errors in diagnosis are made from deficient histories than from any other cause, and this derives very often from lack of attention to the rules of taking evidence. Three witnesses with significantly different points of view must always be considered, the patient, the patient's relative, and the patient's doctor.

The first witness, the patient, frightened and in pain as he is, can often give vital information as to the existence and location of symptoms, but is often grossly inaccurate over times and associated events. Statements on such matters should be checked by other witnesses, such as husband, wife, or parent, who has accompanied the patient to hospital. The relatives should in many cases be questioned as carefully as the patient, and should stay in the hospital until a firm diagnosis has been made, and the doctor responsible for treatment of the case is satisfied that no further history is required.

The third invaluable witness is the general practitioner; it is he who constitutes the keystone of the arch between home and hospital. Not only is he the first skilled witness capable of taking a history of the case and diagnosing it, but he has observed the present condition and is responsible for the subsequent management. The most satisfactory way of utilizing his services is by consultation, either in the patient's home, or in certain circumstances in the hospital. Short of this it is often useful to contact him by telephone. On many occasions liason between practitioner and hospital is

effected by a note accompanying the patient. This note is expert evidence, and in compiling it appreciation of its importance is best shown by its accuracy and completeness.

HOW ILL IS THE PATIENT ?

The problem that a doctor first poses himself on seeing a new case is: How ill is the patient? This is by no means always easy to answer. Three criteria will help him to reach a correct assessment: the appearance and behaviour of the patient, the nature of the main symptoms, and the presence of shock.

The appearance and behaviour of the patient.—General observation of the appearance and behaviour of the patient should be made before the detailed examination. Such observation consists essentially of a search for deviations from the patient's norm, which will be more obvious to someone who has known the patient previously in health or sickness. Here the general practitioner has an advantage over the doctor in hospital, and a mother or wife an advantage over both, particularly with regard to subtle changes of behaviour or personality vaguely covered by such words as " not himself ". To notice and describe these abnormalities is more important than naming them, particularly in their earlier, slighter manifestations. These observations on general appearance can be made at the bedside whilst ostensibly engaged in trivial conversation or in taking the history. During these brief minutes of inspection note should be made of such points as the posture in bed, whether it is normal or not; movements, such as the restlessness of colic or the stillness of peritonitis; the skin, its flushing or pallor, its hot dryness or cold sweatiness; the expression of the face showing pain or apathy; the voice, so expressive, particularly in infants, of a state of vigour or weakness; the nature of breathing, deep or shallow, with or without movement of the alae nasi; and from his words one may assess the patient's mental state. Such observations may well add up to the diagnosis of an emergency before beginning detailed examination. On the other hand, it is easy to miss such a diagnosis if one first examines the patient's belly rather than the patient.

Many of the features noted in the preliminary inspection are components of the syndrome of shock; others carry more specific significance as, for example, the hissing respiration of diabetic acidosis. These will be described later. Here the value of the bird's-eye view is stressed. Just as aerial survey reveals patterns on the