NOTES ON APPENDICITIS IN GENERAL PRACTICE

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Opportunities for general practitioners to practice surgery have almost vanished under the N.H.S. to the disadvantage of both patients and doctors. It may therefore be worth while recording some observations on appendicitis as seen in general practice in a way that the specialist surgeon virtually never sees it. This is largely because of undue reliance on radiography and other physical investigations which overlook the fact that a person's own sensations are much more sensitive than any except the most specialized tests. A general practitioner who has to rely on his careful assessment of the patient's symptoms and history should be able to make a much more accurate diagnosis, in the majority of cases, than the one who relies on less exacting examinations. A personal example will make this clear.

About twelve years ago I asked an old friend, a senior surgeon of great experience, to come and operate for me on a woman of 78 who had, I thought, a Richter's hernia of the obturator foramen. He much doubted my diagnosis, and when he found exactly what I had diagnosed he said that he would not have believed it possible to make such a diagnosis if he had not seen it. But to a general practitioner it was not only possible, but it must have been pretty simple or I should not have done it. Watching the patient for over 24 hours and ruminating over her symptoms really left no other diagnosis possible, nor would the signs have been detectable to a stranger with whom she would not relax or permit an examination in the way she would for one whom she had known half her life. A general practitioner, as it were, sees the whole drama through; the expert is rather like the one who has to judge the story by looking at the stills outside a cinema. Careful continuous observation can more than make good lack of expertness.

These considerations are very important in this particular study, for a general practitioner is in a much better position to judge the

benefits or otherwise of an operation than a hospital doctor. The general practitioner knows how his patient has been for months or years before the operation, and also watches him for a long while afterwards. In this way symptoms which might easily be missed in a short period become quite obvious on a long acquaintance, nor is this shortcoming made up by the very good follow-up programmes of many surgeons. They examine the patient, but they very seldom if ever, ask the doctor for his opinion about progress. And it is following up these cases for twenty years or more that gives me confidence to support a view of appendicitis which was much more common forty years ago than it is today when psychosomatic jargon dominates diagnosis.

It is almost impossible to make the classic distinction between signs and symptoms without a lot of repetition. Pain is, of course, the symptom that the laity associate with appendicitis, but this is a very variable quantity.* If the appendix is lying just under the abdominal wall there will usually be some local pain, and also tenderness may be fairly well marked. But if the appendix is lying free in the abdominal cavity pain may be entirely absent, even with quite an acutely inflamed organ. If the appendix is lying deep on the ilio-psoas muscle there may be some pain felt low down in the right loin and even some tenderness there, but, with children, a much more common symptom is a stitch down the right leg when running. This is presumably due to the vigorous contractions of the muscle irritating the mildly inflamed appendix, or perhaps the appendix causes slight inflammation of the muscle on which it is lying. This causes what is one of the fairly common results of a mild undiagnosed appendicitis, namely that the child does not play games like other children. This again may cause some personality changes in children. Feeling subconsciously that they are not quite the same as other children and not able to join in with their fellows without an often unrealized discomfort, they become shy, retiring, fretful, and " nervy ". Of course many of them get genuine mild attacks of acute appendicitis also which causes vomiting, labelled by the mother " bilious attacks " and by the physician " acidosis " (I do not suggest that every case of acidosis is an undiagnosed appendicitis, though most of them are). Actually any case of undiagnosed appendicitis is liable to make its owner nervy, particularly if she is a female, and I think the mechanism is as follows. Everyone knows how an undiagnosed and unfamiliar sound at night will disturb sleep until one realizes what the cause is. In just the same way the sufferer from a grumbling appendix realizes subconsciously that there is something wrong, something indefinite

*I do not here refer to the pain of acute appendicitis due to distension of the organ.

to which she cannot put a name, and the result is just such an edginess of the nerves as the scratching of a mouse will cause at night. I have not the skill to describe exactly the form this takes, but after one has seen dozens of these cases it is often possible to diagnose the trouble from the symptoms before any physical examination, or even any questions about indigestion, and so on. This irritability is a factor of considerable social importance for it is one of the commonest causes of unhappiness in the early years of married life, and I always tell my young women who are about to get married that they have a duty to their husbands to get rid of this trouble before marriage. I know many who have been most grateful for the advice, and many also who have regretted not taking it. One case, which reads like a novel, may illustrate the point.

I first saw Emily, aged 24, when attending her husband for influenza. The house was in a mess, Emily lying languidly on the settee, and her husband—who ought to have been in bed—doing what he could to look after both. I found her like this several times, and eventually the man asked me to look at his wife also. She was an obvious case of mild appendicitis and I told them both the trouble. However, she would not hear of an operation at the time, nor for several years afterwards. Then I attended her for an influenzal cold and on my last visit I was surprised to find her weeping in distress. Enquiry showed that a neighbour had just told her that her husband was carrying on with a girl on the long bus journey home, and she was preparing to tell him what she thought about him. Instead of sympathizing, I repeated what I thought about her and gave her some good advice, which she actually followed so well that three months later she turned up saying that she had missed two periods and wanted to have her appendix out. To see Emily and her husband proudly pushing the pram a year later was a forceful reminder of the social importance of appendicitis and its correct treatment.

To return from this digression. Pain, as I say, is very variable and often completely absent, and this is also true of tenderness unless the pressure is so deep that one is often uncertain whether the tenderness is abnormal or not. More important is muscle rigidity or guarding. Many find this a somewhat equivocal sign to elicit, for they are liable to misjudge their own sensation, and with this I agree. Yet it is a very real sign to those who can diagnose it, and in reality can be proved, I think, by a sign which is not generally recognized as having any connection with appendicitis; I refer to drooping of the right shoulder. This is usually ascribed to weight bearing, muscular weakness or many other causes, yet after examining many hundreds of patients I have no doubt of the connection with a chronic appendix. In practically every case where I have observed it, there have been clear signs of appendicular trouble, or where this was absent there have been fairly clear indications of some other cause. Usually this has been a history suggestive of an unresolved pneumonia in childhood with diminished movement, and so on, and such a history, or a frank empyema operation on the left side may, of course, cause drooping of the left shoulder

even though an appendicitis may be present. A curious experience may drive the point home.

The only time that I have clinically examined three unrelated persons in my surgery was when three girls were sent to me from a camp with suspected scabies, and they refused to be seen except together. After confirming the diagnosis, one of them told me of her digestive trouble, so I examined her and told her that she had quite a bad appendix. As she rather doubted this, I stood her in front of a mirror and showed her the marked drooping of her right shoulder and told her how it came about. On hearing this, one of the others said that she had a bad droop which neither her parents or teachers had been able to improve, and would I have a look at her? It was quite clear that this girl also had a moderately bad appendix, while her right shoulder was a good two inches below the left. A few weeks later we operated on them both and found that the second girl had actually a much more inflamed appendix than the first, and later on she told me that she never realized that she had been suffering all the time from indigestion until she felt the difference when she was rid of it. Incidentally, three months later her shoulders were practically level, though it is unusual for them to level off so rapidly, if at all.

We now come to what I consider the most diagnostic point about these cases of appendicitis—localized hyperaesthesia known as Ligat's reflex. The text-books usually suggest that this should be sought for by the use of a pin or by pinching with forceps, but this will never discover what we are after, largely for psychological reasons. Any child who is aware of a pin about will be nervous, and adults will share the feeling when they see the forceps. Fingers, as originally described by Ligat, are the proper instruments to use, and if they are used carefully they will often show signs which will prove the patient to be confusing the evidence. This is especially helpful to the consultant who usually only sees the patient once in consultation, as at the first time of asking the patient's replies are often fallacious, particularly from some astute or nervy children and some stout-hearted men. I can recall numbers of the latter who have firmly denied that they felt any pain from a pinch over the appendicular spot, but the next time they have seen me they have said " Good heavens, doctor, whatever you do don't pinch me again. I was sore for two or three days after you examined me last time ". When one asks where the sore spot was, they always point to McBurney's point, or really just internal to it. Had these men been seen by a consultant they would have been written down as having no hyperaesthesia at all, unless they had shown a sign which frequently goes with it. This is that in a number of cases

when one comes near the hyperaesthetic spot, it is noticeable that it is no longer so easy to pick up the skin and subcutaneous tissue for the gentle pinch as in other areas of the abdominal wall. I think really that this is due mainly to the rigidity of the underlying muscles and, while most marked in thin people, it is sometimes noticeable in fatter ones. It is commonly present in children, and examination of these requires special care.

The ideal time to examine a child for hyperaesthesia is when it is asleep in bed. Then, if the warm hand is gently passed several times over the abdomen to get the feel of it and also to accustom the child to the feel of the hand, it is easily possible to pick up and gently pinch most areas of the abdomen without the slightest sign of any disturbance. If hyperaesthesia is present, however, as soon as McBurney's area is approached and gently pinched, the child will draw up its right leg, move its head or make some other movement, and settle down again. This may often be done several times before the child wakes up, the whole abdomen being covered each time with no response except in the one area. This reaction is very delicate and it was by its means that I was able many years ago to postulate an internal rash in the appendix in cases of measles days before the actual rash appeared, an observation confirmed, curiously enough, about the same time by a German pathologist who published an account of measles appendicitis. (Very little notice has been taken of this observation, though reference to the literature shows that an American surgeon once removed an appendix, sent it down to the pathologist, and was astonished to get back the diagnosis of measles a few days before the confirmatory rash and other symptoms appeared.)

If the child is under the age of ten or so, I think the easiest way to examine its abdomen is to nurse it on the knee, if it is willing, or if not on its mother's knee, perhaps give it a sweet to suck, and then gently explore the abdomen as described above. Only the gentlest pinch should be used and, if hyperaesthesia is present, one can feel the young patient tighten its whole body as the sensitive area is approached. Sometimes, of course, it will show nothing but look on the whole process as a general tickle, and sometimes no amount of coaxing will make useful examination possible. In such cases one must just wait and try again later. In the cases I am considering there is no urgency and the mother has no idea of what one is after, for even though an irritated appendix may be discovered that is no reason for suggesting operation or even any special treatment. It is just one factor to be borne in mind in assessing the child's symptoms, and I have had many of these children under observation for years before I have even mentioned

the possibility of appendicular trouble to the parent. A doctor does not need to say all he knows, but he should try to learn all he can, and it is the steady watching of these children through years of development that gradually impresses one with the sometimes unexpected manifestations of appendicular irritation in children as in adults.

One such case specially interested me. It was a child of twelve who used to get very severe attacks of bronchitis and, apparently, asthma. I treated him for about two years and early found he had some trouble with his appendix. In time I suggested that if this were removed his appetite might improve, but it was a long time before consent was given. At operation we discovered half of a tag of a bootlace in the lumen. Not only did his appetite immediately improve, but his attacks of bronchitis and asthma also practically ceased and did not return for about six years.

Foreign bodies are not commonly the cause of appendicular trouble, apart from threadworms which are frequently found. One of my patients, however, had the signs of acute appendicitis caused by two segments of a tapeworm getting into it. (This specimen was shown at the Royal Society of Medicine by my old friend Professor —now Sir—Hamilton Fairley, to whom I sent it.) A curious case was that of a man who turned up at surgery the day after his discharge from the Air Force as psychologically unfit. He said that six months earlier he had suddenly become very constipated and also nervous. Apparently he had spent about half the intervening time in hospital having barium meals, interviews with psychologists, and so on, and was then discharged. I examined him and told him that I was sure that about 85 per cent of his trouble was due to an inflamed appendix. He then said that I was the third general practitioner he had consulted during his illness and that we had each said the same thing, while the radiologist, etc., had denied it. Six days later we removed his appendix, which had in the middle a swelling as large as a hazel nut. Inside this was a huge rose thorn which was surrounded by a sort of mucocoele. His improvement was immediate and for two years he worked hard and happily, though before he left the district he showed some nervous irritability and started to take too much alcohol.

A good analogy to these cases is a motor car in which the brakes are binding slightly. As long as the car is going on the level this does not seem to affect the performance very much, but as soon as an incline is encountered it drops decidedly and one begins to think of poor petrol or poor compression, sooted plugs or blocked jets. But as soon as the brakes are adjusted these fears disappear. In the same way, people with a mildly inflamed appendix get along quite well as long as other things are satisfactory, but when any general strain, or a strain on any particular organ, occurs, all sorts of symptoms arise only indirectly connected with the appendix.

Thus the symptoms may be digestive, and often are, but they may also be nervous or neuritic, bronchial—for a " stomach cough " is a definite clinical phenomenon—or cardiac, though in such cases the gall-bladder is usually also involved. In fact, they may be nearly anything, and it is only after long observation that the doctor can say with any assurance that his patient has a condition in which the appendix is acting as a brake and, if removed, nature will overcome the presenting symptoms. Appendicitis should not be an obsession, but it should certainly be present in the doctor's mind as a possible concomitant cause of recurrent illnesses of many kinds.

A very interesting illustration of the nervous troubles an appendix will cause was that of a charming young woman of 25 who came into my surgery and broke down in tears and sobbed out her story, which was that though she loved her husband and two children intensely, she could not stop losing her temper with them and behaving abominably. I examined her and told her that her trouble was chronic appendicitis. She was most indignant, told me that she was a fully-trained nurse and knew all the symptoms of appendicitis. I gave her the original of this paper to read and a few days later she came back and said " That's me ", but she wished to see her old doctor and get him to operate, if he thought fit. Fortunately, he did, and after it was over she told me that life was absolutely different, with which her husband agreed, and so it has remained ever since.

Though I have stressed the clinical aspect of these cases, the mucous membrane of the appendix practically invariably shows macroscopic evidence of pathological change. As a rule it is not much more than a blush of some parts of the mucous membrane, usually associated with numerous small petechial spots, though I am doubtful whether these are true petechiae as within an hour or so many of the smaller ones seem to fade. They certainly are not artefacts, and all stages may be seen from a few minute " petechiae " to widespread inflammation or conglomerations of such spots to form ring ulcers. I have been impressed by the number of cases in which the contents of the appendix are bloodstained, not infrequently so profusely that the stools would almost certainly have given positive evidence of occult blood. Adhesions are also frequently present.

The main question is, of course, does removal of the appendix in these cases do any lasting good? On this the general practitioner is really able to speak with more authority than the specialist, and I personally have no doubt about it. One has only to notice the way in which so many are constantly needing attention before the operation and cease to need any after convalescence is established. Cases do occur in which doubt arises, but even here one should not judge too quickly. One of the cases in which I had always felt the operation had not been a success is a nice-looking woman whom I know very well. It is curious how many of these cases are, like the rheumatic, well favoured. Her operation took place 18 years ago, and 14 years later we operated on her boy for a sub-acute

appendix. A week later his sister developed a really acute one, which we also removed. Speaking to me a few days afterwards, their mother said that she was so glad that they had had their appendices removed as she had felt so much better since hers had gone. But for the average child there is no doubt whatever; results are immediate and permanent. Particularly is this the case with the shy and rather nervous child who is " picky " with its food and always hangs about its mother's apron strings. It is a safe bet that six months after operation the mother will never know where the child is, for it will always be out playing, while long before that its appetite will have become healthy if not voracious. Very often the effect on the mother will be nearly as marked, for the haunting fear of ill-health and its concomitants will have gone.

Though I cannot give exact figures, there is no doubt that this type of appendicitis is much commoner in girls than boys, and while there is a tendency for boys to " grow out of it " girls never seem to do so, for I have followed many of them from girlhood to womanhood till at last they have come to operation. The clinical picture they present is so typical that one can almost diagnose them at a glance. One amusing case was a woman who came into the district with a letter from her consultant saying that he was sorry for me having to look after Mrs M. because she had been in hospital under investigation for more than six weeks. All the tests had been negative and the psychiatrist thought she might be an early case of melancholia. I saw her, and she certainly was miserable in the extreme, but that night a patient came to surgery and asked me whether I had seen Mrs M. yet. I asked why, and she said " My husband works with her husband, and from what he says I should think that she has a chronic appendix for she is just like I was a year ago ". I said I quite agreed, but the consultant was most annoyed when I told him of how this diagnosis had been made. However, it proved to be correct, and within a month of her operation she was going out to dances and had made a most striking recovery. She was one of the relatively few who was not good-looking.

It is, of course, true that among adults especially there may be a considerable underlying psychological element, but even here I think that operation is usually justified so long as one can keep some control over conditions in hospital to see that they are as congenial as possible. This is really important, for these people suffer from a sense of inadequacy. If one can offer them a reasonable rationale for their deficiency which can be removed, one has at least helped to clear the way for improvement. They also dread hospitals and operations. If, with their doctor's help, they can

surmount this obstacle, confidence tends to rise. Most of them really need a rest, but no one ever got satisfaction from resting for " nerves ". With an operation there is a genuine reason for rest in bed and also a satisfactory reason for a bit of the extra attention they so often crave. But it is also an equally satisfactory reason why this extra attention should be short-lived. I believe in an effective pre-anaesthetic with plenty of sedatives afterwards to ensure adequate sleep, usually until the patients themselves ask for the sedatives to be stopped, which they commonly do after a week or less. I like these patients to get on to a practically full diet in three or four days. Except in old-standing cases, which are usually associated I think with a certain amount of hepatitis if not of actual gall-bladder trouble, there is no difficulty in this, and if there should be discomfort from flatulence, rather than prolong the period of invalid food I give some bismuth and taka-diastase which will stop the carbohydrate dyspepsia, and this can soon be withdrawn. I like my patients to stay in bed longer than is now customary, and fortunately in our cottage hospital we can keep them until they are fit to walk up and down stairs. This is a great help to speedy convalescence as confinement to a small room at home after a large hospital ward is most depressing, and with nervy patients this should be avoided at all costs. By such means I find that adults usually shed most of their symptoms fairly rapidly and easily. Children need little attention except the warning to the mother not to pet them or tempt their appetities in any way. There are the odd slow or difficult cases. Some of these children may be " pre-tubercular " and need more prolonged care. Some adults may prove, as the years pass, to have mild cholecystitis, and yet others to develop a peptic ulcer, but the relation of appendicitis to these conditions is one about which I should not like to dogmatize, though I think it is fairly close.

While I do not think that anything but an operation will really cure any of these cases, it is not always desirable or worth while, and medical treatment can do much to relieve the symptoms. I have always found magnesium trisilicate quite useless to relieve a true appendicular dyspepsia, and it is hardly too much to say that a dyspepsia that is unrelieved by magnesium trisilicate but responds to bismuth and magnesium carbonate in suitable proportions will almost invariably be found to be due to trouble with the appendix. Acid mixtures seem to do no good, and as a general rule " tonics " are badly tolerated, while the bismuth mixture often seems to have a truly tonic effect. If dyspeptic symptoms are marked, the addition of taka-diastase will usually give much greater relief and earn the patient's gratitude, though it is somewhat

expensive. Cases are sometimes met in which symptoms and even pain persist after operation, or recur years afterwards. While some of these may be due to adhesions, many are not. Some may be due to faulty differential diagnosis from other conditions which may simulate appendicular pain, but I incline to the belief that in many there is an extension of the appendicular trouble (whatever its cause is I do not know, but there is often a very strong family history) to the adjoining area of the caecum, for in these cases the typical Ligat's reflex remains very active and the bismuth mixture gives relief, and perhaps our fathers were right after all in referring to " typhlitis ". I do not like to diet my patients for I believe that successful treatment should mean that the patient can eat anything in reason that he desires. At the same time these cases, if untreated, nearly always diet themselves, for it is a common observation that cases of appendicular dyspepsia usually have some articles of diet that they cannot take in comfort; and if an operation has been correctly performed for just reasons, the earlier these patients are encouraged to eat an unrestricted diet the better, lest a dietary neurosis should be created or perpetuated.

As in the middle-aged chronic appendicitis and gall-bladder disease are frequently associated, it is perhaps worth while to draw attention to the points of tenderness on pressure that are almost pathognomonic of inflammation of the gall-bladder though x-ray may not show it. One is just internal to the vertebral border of the right scapula, about the level of the base of the spine. The other is just above the scapula and almost half-way along its length. Either one or both may be present, and though I am not quite sure about it, I have an idea that supra-scapular tenderness occurs with trouble in the distal half of the gall-bladder, while para-scapular tenderness shows abnormality of the proximal part and the associated duct. There is also an area of tenderness about the lower angle of the scapula which is present if there is some hepatitis, or so I take it, and in these cases relief from dyspeptic symptoms is usually slow after appendicectomy. These areas are all small and quite constant in position, though they need fairly heavy pressure to elicit, but they seem curiously neglected as diagnostic aids, for they are very sensitive indications. They are especially valuable in cases of pain which might possibly be anginal in origin, for their discovery will often point the way to correct diagnosis and treatment.

I have not discussed differential diagnosis or pitfalls for the unwary, nor have I referred to acute appendicitis or operative techniques. I will only say that I think the paramedian incision much preferable to the gridiron for it enables the exact position of the appendix to be seen, saves much handling if it is difficult to reach, and also

allows the rest of the abdomen to be searched for odd or unsuspected abnormalities that may be present and need treatment. I have just put together some of the more positive aspects of appendicitis that one meets in general practice, and added some observations on them and the fascinating problems they raise. Where I differ from the more classical picture as taught by specialists and as seen in hospital, I have tried to explain how it is that our outlook should be different, for general practice after all should be expected to deal with less obvious deviations from health than those that get to big hospitals. I believe that such studies are well worth making and I am sorry, for myself, that opportunities for making them are now being taken away by Government hospital policy, to the detriment of medicine and the disadvantage of the patients. I only hope that what I have written will stimulate others to a profounder clinical study of mild appendicitis, and that it may help to restore to health many of those who suffer from symptoms which are not only personally distressing but also often socially disastrous.

I should like to emphasize the social consequence of this disorder, for it is this social aspect that so forcibly strikes the practitioner who enters into the home life of his patients. To the busy surgeon these cases may seem trivial or even unworthy of any attention at all. But the upset they cause in family life is entirely disproportionate to the severity of their pathology, for they seldom develop into an acute appendicitis. Rather they tend to progress into fibrosis and eventual obliteration of the lumen of the appendix, which is probably the reason that most of the cases I have seen have been under 40 years of age. It is easy to find all the usual tests—barium meals, fractional meals, and so on—negative and dismiss the cases as psychological or psychosomatic. At the very beginning I emphasized that our sensations are much more delicate than nearly any instrument, and it is therefore only to be expected that careful attention to a patient's sensations and reactions should discover pathological conditions that our instruments will not register, conditions to which the name dis-ease is most strictly applicable. Out of this welter of vague disorders I have tried to disentangle a symptom complex that seems to focus round a mild inflammation of the appendix, one which no medical treatment I have tried has managed to cure, but which, by operation under appropriate conditions, removal of the organ will permanently relieve with great benefit to the patient, much relief to the family and no little satisfaction to the practitioner responsible.

As in every other procedure, careful attention to detail throughout is essential to success. The surgeon who boasts of removing an appendix in 5 or 6 minutes and leaves everything else to others may

be a brilliant operator, but he will neither discover nor cure the type of case under discussion. Yet in terms of human values there are few cases more worthy of his consideration and skill, and if he looks carefully for the signs I have described he will be surprised to find how clear and how common they are, and with what success they can be removed.

The Health Visitor in General Practice. PINSENT, R. J. F. H., M.A., M.D., PIKE, L. A., M.B., B.S., D.OBST.R.C.O.G., MORGAN, R.H., M.B., B.CHIR. and MANSELL, JOAN M., S.R.N., C.M.B., H.V.C. *Brit. med. J.* (1961), **1**, Supplement, 123.

Dr Pinsent and his colleagues in Birmingham have studied the use of a health visitor in a general practice of about 8,500 persons. The three doctors used a special rating to indicate the potential value of a health visitor in each case (0 = no value, 1 = some value, and 2 = considerable value), and another rating to assess social or environmental influences (0 = no environmental influence; + = some such influence). After a preliminary trial for nine months, during which it was found that a two-stage rating was most practicable for the health-visitor rating, a health visitor was introduced to the practice. She sat in with the doctors and attended their clinics, and gradually developed a case-load of her own in two ways: " introduced cases " were sent to her by the doctors, and " list cases " she found by systematically calling on the persons aged over 70 who were on the practice list.

The first benefit noticed was a return flow of useful information from the health visitor to the doctors, and as she gained confidence she was able to suggest methods of disposal of socio-medical problems which might not have occurred to them. The visitor attended regular clinics for well babies and about three surgery sessions each week, and her work soon came to resemble that of the doctors in its pattern. The well-baby clinics gave her some traditional opportunities, but she also became much engaged in assisting in the provision of social services and help for the aged, and she assisted in other problems of the patients of all ages. She made a valuable liaison officer with nurses, home helps, night watchers, etc., and did much to instruct the patients she saw in preventive measures. Dr Pinsent and his colleagues give many interesting details of the type of case in which the visitor proved most useful. A statistical tabulation of the results is presented.