RADIOLOGY OF THE GASTRO-INTESTINAL TRACT.

(THE VALUE OF CO-OPERATION.)

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IN view of the ever-increasing demands for radiological investigations, it is time to consider the proper place of the radiologist in the clinical team. The day is past when the radiologist was a peculiar person—half doctor, half mechanic—who took pictures in an atmosphere saturated with mystery and ozone when told to do so. The clinician placed his own interpretation on the resultant radiographs, and did not expect any comment from the radiologist.

The position to-day is very different. Apparatus is now almost fool-proof, and what the radiologist must have is wide clinical experience. He must understand the difficulties of the clinician and, without having of necessity a specialised knowledge in any particular branch of medicine or surgery, he must learn to discuss with sympathy and understanding the cases of general practitioners and specialists equally well. It is suggested, therefore, that if the radiologist is worthy of the name, he should be treated as an assistant, and his advice as to the correct approach to the investigation of any case obtained before any *x*-ray examination is ordered. This statement applies more particularly to examination of the gastro-intestinal tract.

The investigation of the gastro-intestinal tract can hardly be considered complete to-day unless the help of the radiologist is obtained. In spite of this fact, there is little real liaison between the radiologist and the general practitioner or specialist, as the case may be. A closer mutual co-operation would be productive of more satisfactory results, would obviate unnecessary expense to the patient and, above all, would put an end to those demands for re-examination and cautious vague reports which are complained of, and for which the specialist and general practitioner are equally to blame.

Perhaps the most common group of diseases met with are those of the gastro-intestinal tract. Symptoms suggestive of disease in this region affect young and old, poor and rich, and bring to the physician's consulting room more often the hypersthenic lover of good things than his paler brother who, while missing the pleasure of high living, accepts the fullness occasioned by hypo-acidity as his due.

The treatment of these diseases, in particular the dyspepsias, up to comparatively recent times was, to a great extent, based upon trial by error. By this I mean that having decided after clinical examination that the patient suffers from hyper-acidity, one prescribed an alkali. If, after a short period, there was an unsatisfactory result, the procedure was reversed.

The pendulum has now swung in the opposite direction, and the

physician now has so many laboratory and accessory aids to his diagnosis available that he is almost embarrassed by their multitude. It is the purpose of this article to discuss the place of radiological examination of the gastro-intestinal tract, not so much for its value as a diagnostic aid, but rather for its place in the sequence of specialised examinations, and also to put forward certain suggestions which, if followed, should result in considerable saving in the time required to complete the examination, and give the physician a more positive diagnostic result.

It is apparent that *x*-ray examination of the gastro-intestinal tract is often ordered in a very haphazard fashion. It is not suggested that this arises from carelessness, but rather from a lack of knowledge of the proper approach to such an examination. The physician who orders a barium meal has often little knowledge of the technique, little sympathy with the difficulties of the radiologist who attempts the examination without the complete history, little faith in the eventual result of the examination, and usually gets what he deserves—little help in diagnosis.

There are certain conditions in which the radiologist cannot help the diagnosis, but with modern technique, full consultation with the physician, and proper preparation of the patient, the radiologist should be able to give an accurate diagnosis in 99 per cent. of cases.

Patient's History.—Under this heading must be considered not alone written history, but also whatever information the patient's doctor gives the radiologist. How often is the radiologist faced with the usual printed requisition form for *x*-ray examination containing headings for everything blank save for the words "Examination of gastro-intestinal tract." His position then can only be compared to that of the general surgeon faced by an anæsthetised patient with abdomen ready for incision, who asks his house surgeon what is the clinical diagnosis, and is told: "gastro-intestinal tract, sir." Imagine his frame of mind were there a surgeon foolish enough to proceed, wondering as he examined each coil of gut and opened the duodenum to ensure that there was no ulcer on the posterior wall, what portion of the gastro-intestinal tract he should examine with meticulous care so that he can say with confidence that the area is normal or pathological, as the case may be. The history or the consultation is of paramount importance when it is decided that the clinical evidence points to the necessity of particular attention being paid to a definite portion of the gastro-intestinal tract. It is of enormous help to the radiologist. Under these circumstances he should in most cases be able to give a definite opinion. The complaisant radiologist who fits his findings to agree with the clinical findings or of the clinician's own opinion, has no place in the clinical team. He is a "yes-man." Fortunately, amongst radiologists there are few of these. Caution has been bred in some by lack of co-operation, but given the full history or the full confidence of the consultant, the latter may expect a helpful, complete, and uncompromising report.

The matter of history and consultation goes still further. It

embraces that most important question, namely, the most advantageous approach to the problem to be solved from the radiologist's point of view. All doctors—be they specialists or country practitioners—have patients from time to time who are able to remain in the city only for a few days. These patients have vague abdominal symptoms, and if the radiologist is not consulted beforehand, time, which to the patient is important, will be wasted. To be more specific, it should be understood that the examination of the large and small bowel are two different entities. The administration of a barium meal does not assist in the diagnosis of lesions in the large bowel to any great extent. If the large bowel is under suspicion, it should first be examined by barium enema. If the upper intestinal tract is suspect, it and the gall-bladder can be examined simultaneously. Previous consultation with the radiologist is therefore most advisable—particularly in those cases where the patient can remain for only a few days. The radiologist can always give helpful advice as to the best way of approaching the problem and of utilising the time available to examine the patient in the most advantageous manner.

The physician who, faced with an obscure case, finds it necessary to summon to his aid the resources of the laboratory and *x*-rays, is sometimes at a loss or does not perhaps realise that the order of employing these aids to diagnosis is important. It is sufficient to state here that *x*-ray examination of the gastro-intestinal tract or gallbladder should be the last employed. It is not proposed to go into the various reasons. Sufficient to say that the results of test-meals, tests for occult blood, or organisms in the fæces, should be accepted as inaccurate once barium or bismuth has been administered, and that this holds good for probably as long as three weeks after the injection of these substances—particularly bismuth. It is a simple rule and renders other laboratory results reliable: "Examination by Radiologist Last."

Should the advice above be followed, the physician will probably have a definite idea from the test-meal as to what portion of the gastro-intestinal tract he requires the greatest attention paid. If that be so, the matter is simple. He need only tell the radiologist that he requires such a condition either excluded or confirmed. On the other hand, he may be still in a dilemma, and can only state either that (*a*) the pathology is upper intestinal, or (*b*) the whole of the gastro-intestinal tract is suspect. This is important, as the radiologist's approach to these two problems would be entirely different. In dealing with the first case—and they are common—a vague dyspepsia with nothing definite in the test-meal—the writer believes and has obtained very satisfactory results by examining the gallbladder and upper intestinal tract at the same sitting. In other words the patient, having had a non-residual diet, takes Opacol that evening and goes fasting to the *x*-ray room next morning. The gallbladder is then visualised, and the usual barium meal carried out. At one sitting, therefore, the upper intestinal tract can be completely examined. On the other hand, should the physician

require the whole intestinal tract examined, a more correct approach would be to examine the large bowel first by barium enema. The gallbladder and upper intestinal tract can then be examined the following morning. Apart from the real danger of causing acute obstruction where there is any possibility of obstructive lesion in the large bowel, there is less chance of residual barium preventing satisfactory subsequent investigations. The thicker barium used for upper intestinal tract investigations tends to be retained for some time, while the thin barium used for examination of the large bowel is readily removed. It will, perhaps, still further encourage the physician to open his mind more freely when I state that in most cases the routine examination of the upper intestinal tract does not of necessity mean that the small bowel has been carefully examined in its entirety. If the physician suspects small bowel obstruction or terminal ileitis, he should say so, and put the radiologist on the " qui vive," so that particular attention may be paid to these areas.

Finally, what preparation is necessary for these various examinations? For the upper intestinal tract examination, no special preparation is necessary, but it is important that the patient come fasting to the *x*-ray room—not even a drink of any kind must be taken from midnight the night before. It is occasionally necessary, if an accurate diagnosis is required and there is a large amount of fasting fluid present, to wash out or at least empty the stomach before giving the barium meal. Quite large gastric ulcers can be missed in the presence of fluid in the stomach.

The preparation for gallbladder examination or, at least, the method of taking the drug, is of greater importance, and instructions must be carried out with the greatest care. If they are, satisfactory examination and report on the gallbladder can be accomplished in practically 100 per cent. of cases.

Proper preparation is perhaps of greatest importance in the examination of the large bowel. It is essential that all fæcal matter be removed, and this sometimes entails repeated colonic lavage. If the mucous membrane is to be demonstrated, this must be done thoroughly, and many conditions will be missed if proper preparation is neglected. The large bowel should not be examined immediately after the use of the sigmoidoscope, and enemata or wash-outs should not be given on the morning of the examination, as these procedures tend to leave some gas in the bowel which prevents the barium from flowing freely. There is no objection to a light breakfast before the barium enema examination and, in fact, it is an advantage, as it stimulates the ileocæcal valve to contract, and prevents regurgitation of the enema into the small bowel, a fact which sometimes obscures the sigmoid.

Many doctors are unfamiliar with the proper radiological approach to the diagnosis of gastro-intestinal conditions, and while anxious to give help, do not quite know how to proceed. Closer co-operation between clinician and radiologist will ensure more accurate diagnosis.