EXAMINATION OF THE RECTUM.

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A description of the examination of the rectum falls naturally into two parts:

- (I) Examination of the rectum itself;
- (II) Examination of the pelvis and, under certain conditions, of some abdominal organs through the wall of or from within the lumen of the rectum.

The latter should always be made to include the former, and no examination of the rectum *per se* can be considered adequate unless it also includes the whole pelvis.

I.—Examination of the Rectum.

(A). **Position of Patient.** The more common use of the right hand, and especially of the right index finger, as a means of palpation would appear to have established the position in which a patient is placed for examination of the rectum, and of the pelvis and its contents via the rectum.

The common practice at the present time is to ask the patient to lie on his left side (Sims' position), and for the clinician to use his right index finger. If the anatomy of the patient is considered rather than the predilection of the diagnostician for the use of his index dexter, ordinary rectal examination will be performed with the *left* index finger, and with the patient in the *right* lateral position, as much additional information may be gained.

The right lateral position would appear to have been neglected by many, but has been found to be of great value in bringing several inches of the large intestine above the rectum within reach of the finger. All structures which it is possible to examine in Sims' position are detected with equal ease in the right lateral position and, in addition, this important segment of bowel.

The anatomical facts which govern the additional advantages of this method are as follows:—

The pelvic colon begins at the medial margin of the left psoas major muscle and turning over the brim, enters the pelvis, the cavity of which it crosses from left to right. It then leads backwards along the posterior wall of the pelvis, towards the median plane, where it turns down and becomes the rectum.

In cases where the pelvic colon is unusually long, in returning from the right side of the pelvis it crosses the median plane, going even as far as the left wall, and then turns back a second time towards the middle of the sacrum, where it joins the rectum at the usual level, thus making an S-shaped curve within the pelvis. On the other hand, when the loop is short (a not infrequent occurrence), all its curves are abridged, and it fails to pass over to the right side, but runs directly downwards, backwards, and to the right to join the rectum.

It is completely covered by peritoneum, and is furnished with an extensive mesentery—the pelvic mesocolon—which permits of very considerable movement.

The loop of the pelvic colon, therefore, is subject to numerous and considerable variations, which are chiefly dependent upon its length and that of its mesentery. In length it generally measures 16-17 inches, but it may be as short as 5 inches or as long as 35 inches.

If the patient lies on the left side (Sims' position) the pelvic colon dips to the left and upwards away from the true and towards the false pelvis, and away from the examining finger. With the patient on the right side, however, the pelvic colon falls downwards and to the right and tends to 'invaginate' itself, as it were, over the left index finger in the rectum. It is therefore possible to palpate the wall of bowel several inches further up than when the patient is lying on his left side.

It might appear at first sight that a rather long pelvic colon, the terminal loop of which passes from right to left, would render this statement untrue. In actual practice, however, it is found that the whole pelvic colon drops to such an extent and is shortened concertina-like in the right lateral position, that the examining finger easily reaches beyond the last flexure of the pelvic colon and the tip of the finger reaches the interior of the proximal or highest loop of this portion of the bowel. This means that sometimes an additional twelve inches of bowel are palpable.

Clinically this has been found to be true in a large number of cases but in order to establish more definite proof a series of radiographic examinations has been made.

Each patient was prepared by means of an aperient followed by enemata until the lower part of the bowel was emptied of its contents. Then through a short tube about one pint of a very weak solution of bismuth or barium was allowed to run into the rectum and pelvic colon until this filled the whole of the sigmoid and pelvic colon and rectum. The index finger of each hand was wrapped round with a strip of lead foil 1 mm. in thickness, then covered by a fingerstall and the hand inserted into a rubber glove. When the finger was passed into the rectum and a radiogram taken, the finger shadow could be distinctly detected as being more radio-opaque than the weak barium solution, and the relation of the tip of the finger to the bowel was readily ascertained. The X-ray tube was placed in front of the patient's pelvis and the sensitive plate held behind the sacrum.

With the patient lying in the left lateral (Sims') position the right index finger was inserted into the rectum. A radiogram taken in this position showed that the pelvic colon had dropped to the left and that, although the finger reached to the level of the second piece of the sacrum, less than two inches of bowel wall above the pelvi-rectal junction were palpable.

Another radiogram was taken with the patient lying on the right side, and with examiner's left index finger inserted into the rectum.

The difference between the radiogram obtained in this position and in the first was most striking. Almost the whole pelvic colon was seen to be dropped towards the right side. The examiner's index finger was seen to pass up as far as the highest flexure of this part of the bowel. The pelvic colon was seen lying closely coiled up in the pelvis and any portion of its length could be felt either directly by the finger in its lumen, or indirectly through the wall of an adjacent loop.

Depending upon the length of the pelvic colon, therefore, from two up to even ten inches more of the pelvic colon are palpable in the right lateral position than are palpable by the usual routine method of Sims' position.

A second factor which is of importance in rectal examination is with reference to the palpation of internal hæmorrhoids. When a patient is lying on his left side the blood tends to drain away from the pile-bearing area, and any hæmorrhoids become empty and small. This accounts for the statement that "it is a mistake

to suppose that piles can be felt with the finger''. This is true with the patient lying in the left lateral position, but when he is lying on his right side, the venous return is impeded by the downward pressure of the pelvic colon, and piles become congested and swollen. Their distension can be increased by voluntary straining on the part of the patient, and in the right lateral position it is very rare not to be able to feel internal hæmorrhoids, when they are present. In the examination of the rectum, nothing therefore is lost, which would have been learnt in Sims' position, while an important piece of bowel, namely several inches of the pelvic colon above the pelvi-rectal junction, is brought within touch of the examiner's left index finger with the patient lying on his right side.

This may prove to be of the greatest importance as will be seen from the following case, which is typical of many similar ones.

Case—On 19/6/24 I was asked to see a patient, Horace S., aged 54, by Dr. R. W. Annison. He had complete intestinal obstruction. General examination failed to reveal any cause for the condition. Four doctors had made a rectal examination in the left lateral position and were unable to detect any abnormality. In the right lateral position we could all feel *per rectum* a hard mass in the pelvic colon which appeared to be a malignant growth. Enemata failed to improve the condition and in spite of all argument and persuasion the patient refused operation and died three days later.

Post-mortem examination revealed a carcinoma of the pelvic colon eight inches above the pelvi-rectal junction with complete occlusion of the bowel.

(B). Inspection. It is always advisable to wear a pair of rubber gloves. They need not be strictly sterile, and provided they are boiled, dried and powdered after each examination, they are ready for immediate use for the next case. Draw the buttocks apart, and carefully inspect the anus. Corrugations of skin, sogginess of skin, skin-tags, purple swollen blood-clots beneath the skin, worms, warts, ulcers, etc., may all be seen and carefully inspected and palpated.

Having inspected the peri-anal and anal skin in the normal quiescent position, place the two thumbs, one on either side of the anus, and try to draw it gently open, stopping immediately any pain is caused. Look especially at the posterior aspect where the lower edge of a fissure always becomes visible with gentle traction. This position is marked by a small oedematous piece of mucous membrane, the so-called, but erroneously named, 'sentinel pile.'

(C). Palpation. Palpate all the anal and peri-anal region, not only for obvious ulcers or warts, but also feel for any induration in the ischio-rectal fossæ or at the anal verge. Then cover the examining finger with a water-soluble lubricant and incidentally one which is also transparent. Vaseline fulfils neither of these conditions, and either lubafax or K-Y jelly should be used. For hospital practice a cheap useful cream is made by the dispenser using mucilage of tragacanth with one in a thousand oxycyanide of mercury. In order that the finger may pass easily into the anal canal, not only its anterior or palmar aspect should be lubricated, but also the dorsum, and this must never be forgotten. Press gently with the pad of the finger against the anal aperture, and insert the finger extremely slowly into the anal canal. This procedure should take at least sixty seconds. The more successful the proctologist the longer he will take to insert the finger into the rectum.

The distance to which the examining finger can be inserted into the rectum depends upon two factors: (1) The fatness of the patient's buttocks; (2) the configuration of the examiner's hand, which includes the length of his index finger, and the degree of flexion which can take place at the metacarpo-phalangeal joint of his middle finger. The latter can be improved upon enormously by manipulation and constant practice. When the finger has reached the extent of the anal canal, i.e. one and a quarter to one and a half inches, about half the average finger-length, rotate the finger extremely slowly, feeling for irregularities in the normal smooth lining of the anal canal, and for the presence of partially prolapsed internal piles in this position. Enlarged anal papillæ, polypi and some fissures can be felt. Then push the finger completely into the rectum, to its full length, and again employ the rotatory movement of the finger, to palpate each and every wall of the rectum in turn. This rotatory movement in the long axis of the finger is of the utmost importance in all examinations of the rectum.

As the examiner is dependent solely upon the impressions obtained by the pad of his finger, he must palpate most carefully each portion of the rectal wall in turn. This must include the higher reaches of the rectum with steady pressure upon the perineum. Although it is true that the anal canal is some one-and-a-half inches long, and the rectum some five inches long, yet with the two curves taken by the rectum and anal canal, and the degree of 'concertina-ing' which can take place by pressure from below, although the examiner's finger is only some three inches long, it is no uncommon thing to be able to feel the sphincter at the junction of the rectum and pelvic colon, or even a little beyond it. This can best be attained by careful attention to the position in which the patient is lying.

(D). Instrumental Examination.

1. Proctoscopy.
2. Sigmoidoscopy.

1. *Proctoscopy.* The accompanying illustration (Fig. 1) shows a satisfactory proctoscope for examination of the anal canal and lower inch or two of the rectum. When the obturator is withdrawn, the lateral fenestrum, which occupies one third of the distal two inches of the wall of the speculum, allows

FIG. 1.—Proctoscope with Lateral Fenestrum. (Clifton's).

a clear and uninterrupted view of approximately one quarter of the lumen of the bowel. At the same time the wide mouth of the speculum allows ample light and the manipulation of instruments. There is no slide, or other portion, to shift and subsequent cleaning of the instrument is quite simple. The right lateral position is the most satisfactory, for reasons given already, for examining

FIG. 2.—Proctoscope with terminal aperture. (Kelly's).

the anal canal or the lower part of the rectum. A small electric bulb may be attached to the handle and is most useful where satisfactory distant illumination is not present.

The same instrument may be used for examining the upper part of the rectum, but in this case the patient is best placed in the knee-elbow, or the knee-chest, position. Or for this purpose, a speculum having a distal aperture only, is preferred by some examiners (Fig. 2). The first instrument is by far the most satisfactory for carrying out the injection treatment of hæmorrhoids.

FIG. 3.—Proctoscope with terminal aperture with eye-piece.

In certain conditions, for example, stricture of the rectum, it is essential that air distension can take place. In this case the speculum needs an attachment for blocking the distal end of the tube, and for inflating with air (See Fig. 3).

2. *Sigmoidoscopy.* Any modern sigmoidoscope is satisfactory for examining the upper part of the rectum and the pelvic colon. A detailed description of the instrument is out of place here, but one is shown in the accompanying diagram (Fig. 4).

FIG. 4.—Sigmoidoscope. (Strauss's).

Either proximal or distal illumination may be used, but the most important factor is a careful preparation of the part of the bowel to be examined. A thoroughly conducted low colon irrigation is the best method. An aperient taken overnight is apt to produce a watery state of the lower bowel, and render the examination futile.

Sigmoidoscopy may be carried out in either the left lateral position, in which case the pelvic colon tends to straighten itself and drop towards the left loin, or the right lateral position, in which case a little more manœuvring will be necessary to get the end of the sigmoidoscope around the bend in the bowel, or if a lot of fluid fæces are present the knee-chest position is the best, as the fluid is not continually running down on to the eye-piece of the instrument.

The instrument, well lubricated, is insinuated gently into the anal canal, the obturator withdrawn, the eye-piece attached, and the inflating bulb gently squeezed. Under direct vision the instrument is passed slowly, and each and every wall of the rectum is closely examined. The end of the instrument may be carefully guided past Houston's valves, and any curves in the rectum and pelvic colon, always keeping the lumen in view. If this is done conscientiously, and if the progress of the instrument is stopped immediately a right-angle bend is met with, no possible harm can result.

(E) X-ray Examination. X-ray examination of the rectum after this has been distended with a barium enema is, in itself, an almost useless undertaking. Many cases of carcinoma of the rectum have been missed because a radiogram has failed to reveal any abnormality, and palpation and inspection have been neglected. We would enunciate that only from the recto-sigmoid junction upwards is X-ray examination after a barium enema of any value. Not only must the patient be examined with the fluorescent screen when the bowel is full of barium, and a radiogram taken, but the bowel should be emptied, and the enema replaced with air or oxygen, and a fresh radiogram taken, before an adequate idea of the state of the pelvic colon can be ascertained by this method.

II.—Examination of the Pelvis per Rectum.

It has already been pointed out that not only the rectum and lower part of the pelvic colon, should be borne in mind when a rectal examination is made, but an examination of the whole pelvis should be undertaken as far as possible. With different organs under examination, different positions may help.

For example, the left lateral position may be of value where the appendix or cæcum is under suspicion.

The Supine Position. Here the patient lies upon his back, with the head, the upper part of the trunk and the thighs partly flexed, and the examiner uses one finger in the rectum and the other hand upon the lower part of the abdomen. Thus the lower genito-urinary tract may be palpated with ease, in all except very obese subjects, as the lower end of the ureters, the bladder, prostate and seminal vesicles tend to drop directly backwards upon the examining finger; while at the same time, relaxation of the muscles of the anterior abdominal wall facilitates this bimanual examination. Provided the bladder is empty, with a little practice it is found possible to feel the intrarectal finger with the fingers placed on the anterior abdominal wall. If careful palpation is carried out from one side to the other, certain structures may in some cases actually be rolled between the tips of the fingers, namely, the obliterated hypogastric artery, the ureter, the vas deferens and the urachus. Thickening of the ureter, peri-ureteral thickening and ureteric stone may often be felt. Almost the whole bladder can be carefully palpated, and tumours, calculi and other abnormalities, especially intra-vesical enlargements of the prostate, can be detected which were quite impalpable in either lateral position.

The prostate, seminal vesicles, bulb of the urethra, Cowper's glands, and posterior aspect of the symphysis pubis are also felt to better advantage by the intrarectal finger with the patient in the supine position.

In the female the vaginal walls and through them the urethra, may be palpated. The os, cervix, and body of the uterus, are easily felt, also the parametral structures, fallopian tubes, and ovaries.

The Knee-Elbow Position is often of use in the examination of the anus, anal canal and the interior of the rectum, but it is comparatively useless to attempt to perform any intra-pelvic examination by this route because the main structures which are to be palpated tend to drop directly away from the examining finger. It is, however, useful for the inspection of the rectum with the proctoscope.

The Right Lateral Position is by far the best for the ordinary routine digital examination of the rectum, as, in this position, a most important area of the large intestine also comes within reach of the finger.

Conclusion.

If only the simple instructions concerning palpation of and through the rectum are followed, the oft neglected and too frequently futile P.R. examination will be full of interest for the clinician and benefit for his patient. This will naturally lead to the more early recognition and treatment of painful and distressing conditions of the anal canal, and of malignant conditions, not only in the rectum, but even in several inches of the large intestine immediately above. It is one's misfortune frequently to see patients with symptoms of 12 or 18 months' duration who have an inoperable growth which is easily within reach of the left index finger. If these patients had been submitted to a rectal examination several months earlier, they would have had the advantage of the 69 per cent. cure rate which attends the modern treatment for carcinoma of the rectum.