the swelling is about half the size it was prior to the operation, and the wound being completely healed the patient was dismissed, being now practically well.

April 7th.—Since the patient was dismissed he reported himself on several occasions. When examined to-day the renal swelling is found to be about one-third in size to what it was on admission in December of last year. The patient now complains of no pain, but still has a sense of weight in the lumbar region.

The loose perirenal adipose tissue, situated as it is in direct contact with the kidney, is very liable to secondary infection, either from the kidney or from distant parts. That it is prone to suppuration has long been recognized, but Rayer was the first writer who gave a clear and elaborate description of perinephritis. He classified the disease into three groups, namely:—

(a) Primary perinephritis, including those cases where the inflammation arose independently of any fistulous opening from or disease of the kidney.

(b) Consecutive extrarenal suppuration, or abscesses secondary to inflammation of the kidney, but without any fistulous communication between the kidney and the adipose tissue of the capsule; and

(c) Consecutive extrarenal suppuration, where the inflammation was due to a fistulous communication between the kidney and the perinephric cellular tissue.

After Rayer, valuable contributions to the subject were made by Féron, Parmentier, Lemoine, Hallé, Guérin, Trouseau, Kraetschmar, Duffin, and Dickinson. From statistics it appears that perinephritic abscess is most frequently caused by inflammation extending from within the kidney tissue, and it is shown only in a few instances that suppurative perinephritis originates from other causes. This is not only true of general pyæmia, but the statement is even more applicable to localized infective processes. For example, not only has the disease been traced to septic infection in febrile conditions—such as typhus, enteric fever, and variola—but it has also been shown to arise from purulent absorption in cases of inflammation of the connective tissue surrounding the uterus, vagina, or rectum, succeeding parturition or an operation. Trouseau recorded a case in which the perinephritis was of uterine origin, and where he believed the inflammation to have extended by way of the iliac veins. In cases of puerperal perinephritis, which is by no means uncommon as a complication of pelvic cellulitis, an abscess frequently develops in the neighbourhood of the ovaries or Fallopian tubes, and gradually dissecting its way ultimately spreads itself out between the lumbar muscles and the peritoneum. Operations upon the testicle, or upon the spermatic cord, are liable to excite inflammation of the connective tissue surrounding the bladder, especially at its base, from whence suppuration may extend to the perirenal connective tissue. Cases are upon record in which the disease succeeded operations upon the testicle, urinary bladder, and urethra, or formed a sequence to conditions such as hydrocele, varicocele, or haematocoele. In a similar manner operations upon the perineum, rectum, and uterus, or suppurative disease of the gall bladder, liver, and spleen have caused the accumulation of pus around the kidney.

Koenig narrates a case of excision of the rectum in which the suppuration extended upwards from the pelvic cellular tissue along the posterior wall of the rectum to the perirenal adipose tissue of the left kidney, and spread itself out as far as the descending colon.

In the great bulk of cases of perinephritis consequent to the extension of infective material from distant parts, the disease culminates in suppuration. In a few instances, however, such as the case above described, great induration may take place without any suppurating foci forming. Not infrequently an inflammatory process is induced by local injury, but occasionally it may be attributed to the extension of non-pyogenic infection. That this has been so in the present case is very probable. The patient suffered from an acute pleurisy which spontaneously recovered without going on to empyema. That an infective process extended from the cavity of the thorax to the renal tissue around the right kidney seems the most plausible explanation of the case. The pathologist frequently finds cases of non-pyogenic infection of the pleura where there is great thickening of the connective tissue and adherence of the pleural surfaces without any evidence of purulent infection. One can therefore very

easily understand that when a loose, poorly-nourished tissue, such as the adipose capsule of the kidney becomes infected, rapid and extensive induration may be induced.

THE DIAGNOSIS OF DISEASES OF THE SIGMOID FLEXURE AND RECTUM,

WITH SPECIAL REFERENCE TO THE PROCTOSCOPE.

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THE diagnosis of diseases of the rectum and sigmoid colon rests upon symptoms such as pain, tenesmus, discharges of blood, pus, or mucus, protrusion, and abnormal defæcation, etc., aided by local examination. Here let me urge the paramount need for a local examination in all cases where disease of the lower bowel is suspected, for it is a common thing for me to meet with cases of bleeding at stool which have been treated for piles by their medical attendant, possibly for a considerable period, without ever having been examined, and whom I have found to be suffering from carcinoma in such an advanced state as to preclude any attempt at removal, though it is more than probable that had an examination been instituted at an earlier date the disease would have been recognized, excision performed, and lives saved. Again, two or more separate diseases may co-exist in the same patient; as, for example, hæmorrhoids and carcinoma, fissure and piles, fistula and stricture, and so on.

THE DIAGNOSTIC IMPORT OF SYMPTOMS.

In a normal condition of the part, and except during defæcation, no sensations are experienced in the rectum, which serves only as a canal for the passage of the faeces from the colon to the anus. Until shortly before an evacuation this portion of the bowel is normally devoid of faeces, which do not pass beyond the lower end of the sigmoid. When defæcation takes place the peristaltic movements of the colon are communicated to the rectum, in which definite sensations are experienced. These, however, cease soon after evacuation, to recur only when excited in a similar manner.

In examining a patient complaining of rectal pain it is well to inquire what relation the pain bears to the act of defæcation—whether it be spontaneous or be excited by the act in question, and, in the latter case, whether it precedes, accompanies, or follows expulsion.

Pain.

Pain is a symptom of fissure, of hæmorrhoids, of ulceration, and of certain morbid growths within the rectum. In fissure the pain is very severe and out of all proportion to the size of the lesion, and often lasts for several hours.

In hæmorrhoids the pain varies according to the condition of the parts, that is, whether they are inflamed or not. A thrombotic pile always causes pain, as do internal hæmorrhoids when prolapsed and inflamed.

In ulceration, whether simple or carcinomatous, there is every variety, the amount depending to a great extent on the site of the lesion—less when high up, more when low down in the sphincteric region.

Hæmorrhage.

Hæmorrhage comes next in order of frequency as a symptom of rectal disease. When due to fissure, it is usually insignificant in quantity, and is brought on by straining at stool, as in the case of piles; but in the case of internal hæmorrhoids a considerable amount of blood may be lost. In these cases the blood is usually venous, but may be arterial, and it generally ceases when the piles are returned. Ulceration of any part of the gastro-intestinal canal may be attended with hæmorrhage, in some cases to an alarming extent. The character of the blood will vary according to the time it has been retained in the intestine. Carcinoma of the bowels is usually attended with some hæmorrhage, the faeces being streaked with blood, though at times, owing to ulceration into a vessel, it is severe enough to produce fainting. It must not be forgotten that the stomach is sometimes

the source of blood expelled from the rectum. A case of this kind was under me in St. Mark's Hospital some years ago. There had been a discharge of blood from the rectum for several days before admission, and the patient was thought to be the subject of haemorrhoids. He had not been in hospital long before another severe bleeding took place, which proved fatal. The source of the bleeding was an ulcer of the stomach opening into the gastric artery. There had been no gastric pain or haematemesis.

Protrusion.

Protrusion is another symptom which should be inquired about, especially in reference to the act of defaecation or to other exertion, and whether such prolapse has to be replaced, or if it returns of itself. Piles, polypi, villous growths, and prolapsus recti have all this symptom in common.

The Stools.

The nature and form of the stool is sometimes characteristic, but too much reliance must not be placed upon this symptom for the diagnosis of stricture, as when the contraction is high up the faeces may accumulate between the lesion of the sphincter, and when voided may be of normal size. Again, the motion may be flattened or ribbon-like, due, not to a stricture, but to a spasmodic action of the sphincter.

Discharge of Pus, Mucus, and of Mucous Casts.

These are of much importance as a means of diagnosis. Pus indicates the presence of abscess or blind internal fistula, ulceration, and stricture, or of an acute proctitis, such as a gonorrhoeal inflammation.

The escape of mucus would lead one to suspect catarrhal inflammation, or possibly invagination or intussusception of rectum. When there is a large watery discharge, something like the white of egg, a villous tumour is almost sure to be present. Mucous casts point to a membranous colitis. Incontinence of flatus and of faecal matter point to stricture, simple or malignant, and to loss of sphincter power due to long-standing prolapsus. It is also a symptom, curiously enough, of that advanced form of constipation known as faecal impaction.

Speaking of impaction gives me the opportunity of uttering a word of warning, which is: Not to trust the word of a patient or even of the nurse too implicitly when inquiring, especially after a rectal operation, as to whether the bowels are open. On several occasions when, owing to some rectal discomfort, combined possibly with a so-called diarrhoea, I have made a digital examination, I have found the rectum packed with masses of faeces, to the surprise of house-surgeon and nurse. The diarrhoea and discomfort ceased at once on the removal of what is really a foreign body.

EXAMINATION OF RECTUM AND ANUS.

The external parts should first be inspected. The patient, if a female, should be placed on either side on a couch, the buttocks close to the edge and the knees drawn up. For males the knee-elbow position is the best. On separating the buttocks the anus will be exposed. Any loss of pigmentation and the presence of external piles, cracks, fissures, eczema, or condylomata will be at once seen. Palpation around the anus with the finger will then discover if any induration exists indicating a deep-seated abscess or blind internal fistula.

The finger, well coated with vaseline, should now be inserted; to facilitate this the patient should bear down as if at stool. Should much pain be caused and the sphincter be found spasmodically contracted a fissure will probably be present. Small polypoid growths due to hypertrophy of the papillae of Morgagni may be felt, or the internal orifice of a fistula usually situated in the mid-line dorsally just above the external sphincter. The condition of the prostate and vesiculae seminales should now be noted. Also any tumour or organ pressing on the bowel. Neoplasms, stricture, and ulceration, if within reach of the finger, can readily be detected, and an extra inch or more can be gained if the patient is placed in the squatting posture, and at the same time is directed to strain out. Internal haemorrhoids are difficult to diagnose by the uneducated finger, but are usually extruded after the administration of an enema, when they are easily seen, as is the

case with prolapsus recti and polypi if attached near the anus.

For examination I am in the habit of relying on the finger alone for the majority of rectal cases, but for some the use of the speculum is not only desirable, but necessary. The various rectal specula, such as Gowland's, Davy's, and Allingham's, I hardly ever use now for purposes of diagnosis, though a bivalved speculum is useful when douching the rectum or when making applications to the anal canal. I use now almost entirely Kelly's tube—or, as he calls it, the proctoscope—which I had made about four years ago to my order by Mr. Montague of Bond Street, from a description by Dr. Kelly.¹

The Proctoscope.

The instrument consists of metal tubes of various lengths fitted with obturators. The shortest, used for the examination of the anal canal, is equal in circumference to a No. 10 rectal bougie, and is 2½ in. in length, whilst the longest is 14 in., and has a calibre of a No. 9 bougie. By this long tube one can in many cases examine the whole length of the sigmoid flexure, but I must confess that it is not so readily passed as are the other tubes; luckily it is not so often required.

The two medium-sized tubes I find of most use. By the one measuring 5½ in. one can practically examine the whole of the rectum; whilst the other, which is 8 in. long, suffices for an examination of the upper rectum and lower sigmoid for this purpose, passing above the pelvic brim. In addition to the tubes there are applicators of various lengths for carrying swabs of cotton wool; also a scoop for the removal of faeces, etc.

The proctoscope is used in the following way: The bowel being empty, the patient, whether male or female, is placed in the genu-pectoral position, and all tight garments, such as corsets, etc., loosened or removed. The tube selected is warmed and smeared with some lubricant such as vaseline. As the instrument is being inserted, the patient is directed to strain out a little in order to relax the part and facilitate its passage. As soon as the tube has fairly entered the rectum the obturator is removed, and the air rushing in causes ballooning of the bowel, a phenomenon aided by the genu-pectoral position, which allows the intestines to gravitate towards the diaphragm.

The rays from a good electric head or hand lamp are now cast up the tube, and the interior of the rectum is brought into view, being seen as easily as is the throat when illuminated by means of a good lamp. No anaesthetic is necessary,

in fact proctoscopic examination is far easier without it. The position, however, is a constrained one, so that, if the examination is prolonged, it is well to give the patient a rest during the performance by allowing him to raise his head and chest for a minute or two.

In the normal rectum by this means the mucous membrane appears of a pale pink colour, and one or more crescentic folds of mucous membrane stand out prominently. These are Houston's folds, and are said to give the faecal mass, in its downward course a spiral twist, as well as to prevent its too rapid descent to the anus. They are attached from one-third to half way round the bowel, and, measured at their centre, they project into the gut from $\frac{1}{2}$ to 1 inch. Their free border is crescentic and thin. They vary somewhat in position as well as in number, but the most prominent is usually about 4 in. up on the right side. An inch below this on the opposite side is the second, often also, well developed, while the third, if present, is on the same side (the left), and 2 or 3 inches above it. The ballooning of the rectum brings these folds prominently into view, but this ballooning is limited to the rectum, and does not seem to affect the sigmoid.

On withdrawing the tube the anal portion of the canal comes into view, when the anal valves are seen separated by the columns of Morgagni more marked in some cases than in others, and varying in number from 6 to 8. These columnae recti project above the surface of the mucous membrane, and are of a paler colour. They become pointed in an upward direction, but increase in breadth towards the anal margin. The sides of adjacent columns meet and join below, forming a series of semilunar pouches, the concavities of which are directed upwards.

Ball, of Dublin, believes that a fissure is usually caused by the tearing down of one of these pouches or valves; be that as it may, a minute foreign body may lodge behind such a valve, and give rise to a small and very painful ulcer. The upper extremities of the columns of Morgagni may become hypertrophied, forming a variety of rectal polypus—the so-called polypoid growth which is generally multiple.

The pathological lesions to be seen through this instrument include all diseases involving the mucous membrane of the lower portion of the large intestine, that is, of the sigmoid flexure and rectum.

During the past four years I have been able to diagnose and to treat successfully afterwards cases of tuberculous, dysenteric, and follicular ulceration where the lesion in some of these cases has been quite beyond the reach of the finger. I have also seen 3 cases of stricture of the sigmoid, and in one case I was able to assure my patient that there was no stricture of the upper rectum or sigmoid, a condition for which bougies had been passed at stated intervals for about twenty five years.

Dr. Tuttle³ in a most interesting paper on the subject says:

The only conditions which prevent the use of the instrument are constriction of the calibre of the gut through organic disease or by pressure from without, and extreme tortuosity of the sigmoid flexure with adhesions. Volvulus, faecal impaction, or intussusception might also limit its application, but it would still be useful in diagnosing these conditions, and thus serve the very purpose for which it was designed.

In speaking of non-surgical diseases Tuttle says:

There are three types of catarrh of the rectum, sigmoid, and colon—namely, simple acute catarrh, hypertrophic catarrh, and atrophic catarrh.

If by simple acute catarrh an acute proctitis is meant, I have seen a few of these cases, though I have not had an opportunity of examining them with the proctoscope, for the simple reason that no case has presented itself since I have been working with this instrument. The distinction which the above-named author makes between atrophic and hypertrophic catarrh appears to be that whereas in the former the mucous membrane is red and dry, with fissure-like cracks in it, and with little masses of faecal matter adhering to the rectal wall, in the latter the mucous membrane appears pale, oedematous, and boggy, and is covered with a muco-purulent secretion. There is persistent moisture about the anus, marked flatulence and indigestion, with loose stools, whilst constipation is a marked feature in the chronic atrophic variety.

A description of the examination of the rectum and sigmoid would not be complete did I omit to mention bimanual manipulation. For this to be of real use, the patient should be well under the influence of an anaesthetic in order that the abdominal parietes may be fully relaxed. The lithotomy

position is the best when this method is employed. With the index finger, sometimes supplemented by the second finger of the right hand, passed into the rectum, pressure is made upwards at the same time that downward pressure is made with the other hand applied to the hypogastric and right and left iliac regions. In this way the finger in the rectum can feel the sacral promontory, often with ease, whilst the pelvic contents can be mapped out and examined pretty thoroughly. This was the method relied upon before the introduction of Kelly's tubes, and is now a useful adjunct in cases of high-lying stricture, neoplasms, and tumours pressing upon the bowel from without.

I will conclude these remarks with a brief notice of a few cases in which I have found the use of the proctoscope of the greatest service.

CASE I.—Miss A., aged 50, seen with Dr. Clemow, of Earl's Court. Tendency to constipation, small and grooved motions; no blood or pus, but discomfort in left iliac region. Digital examination discovered nothing. Kelly's 8-in. tube passed into sigmoid shows a contraction, possibly muscular as the mucous membrane was healthy. I advised dilatation with bougies made in vulcanite of especial shape. This was carried out by Dr. Clemow with marked benefit. I was able also to allay the patient's fears as to the question of cancer, thereby possibly to some extent alleviating symptoms.

CASE II.—Mr. H., aged 50, had suffered with diarrhoea and a discharge of blood and mucus for some months. He was getting thinner. I passed the 8-in. tube well above the pelvic brim, and found the upper rectum and lower sigmoid the seat of several small ulcers, the majority being equal in size to a large pin's head. After the use of chinolol injections, at first twice a day, for two months, combined with a bismuth mixture and careful dieting, he reported himself well.

CASE III.—Mr. G., aged 50, just returned from India, where he had contracted dysentery. He was still suffering with diarrhoea, and the passage of blood and slime; urgent call to stool every two hours; has not passed a solid motion for weeks; is wasting rapidly. Digital examination shows nothing abnormal. Proctoscopic examination: A number of separate and irregular-shaped ulcers in upper rectum. Treatment as in previous case, with a like result, excepting that after two months he had a slight relapse, owing to neglect of himself.

CASE IV.—P. S., a male, aged 34, was brought to me by a former nurse at the West London Hospital. He had suffered with diarrhoea, and the passage of blood, pus, and mucus for seven years. He had on an average twelve actions of the bowels in twenty-four hours. Had got so thin and weak that he was obliged to give up all work. Digital examination discovered nothing, but with an 8 in. Kelly tube a tight stricture was seen at 7 in.; ulceration was present. I strongly advised colotomy.

CASE V.—Lady X. seen in consultation with Dr. Playfair. The patient, a stout lady of middle age, had been passing blood at intervals for some time. At times the bleeding was severe. There was no particular pain nor marked protrusion. Examination with the proctoscope revealed a small cleanly-cut ulcer about 4 in. up. This was cauterized, and chinolol injections 1 in 600 prescribed. I heard subsequently that the patient did well and had no more bleeding. The note of this case is from memory.

CASE VI.—J. D., male, aged 48, sent to me by Mr. Wallace of Stamford Hill. The patient complained of constant uneasiness, amounting at times to pain, in the left iliac and suprapubic regions. Bowels irregular, but no discharge of blood or pus. Mr. Wallace suspected disease of the sigmoid. Digital examination detected nothing, but there was an ill-defined sense of resistance in the iliac region. A few days later I examined with the proctoscope and found carcinomatous ulceration on a level with the pelvic brim. The disease was well seen by Mr. Wallace and his brother, Mr. Frederick Wallace, also by others who were present. Bimanual examination under ether revealed a deep-seated tumour in the sigmoid region, which at a subsequent operation proved to be malignant disease of the sigmoid colon. I had hoped to be able to perform excision, but finding the growth firmly fixed to the pelvic brim with involvement of the neighbouring glands I rested content with the formation of an artificial anus. The patient has recently left St. Mark's Hospital much relieved.

I think these few cases will go far towards proving my contention that the proctoscope is not only of practical value, but that it is indeed a most important adjunct to the means at our disposal in the diagnosis of rectal diseases.

REFERENCES.

- ¹ *Annals of Surgery*, No. 20. ² *New York Medical Journal*, July, 1898.

CLINICAL OBSERVATIONS ON THE ACTION OF SOME SUPRARENAL PREPARATIONS.*

By STEPHEN G. LONGWORTH, L.R.C.P.I.,

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[After some introductory observations Dr. Longworth said:]

The chemistry of the suprarenal bodies is very complex, but they contain an active principle secreted entirely by the medullary portion of the gland which up to the present has not been satisfactorily identified. Several workers claim to have isolated various substances under the name of suprarenalin, epinephrin, etc., possessing in a greater or less degree

* Read before the East Anglian Branch of the British Medical Association.