lost his life, and from which he never made a complete recovery. There was a tender lump left in the right iliac fossa, which became the seat of pain and swelling on movement and after any error in diet. The appendix was found buried in a dense mass of fibrous tissue, adherent to the abdominal wall. It was difficult to demonstrate the abdominal cavity, and in order to remove the appendix, which was inseparable from the adhesions around it, some of the muscular tissue of the belly wall had to be removed. The mass removed was the size and shape of a large walnut. The buried appendix contained pus. The omentum was adherent. The operation occupied an hour and a-half. The great difficulty was in entering the abdominal cavity. A speedy incision would have involved the cæcum, which was adherent immediately under the surface wound. The patient's recovery was delayed by a small abscess which appeared in the wound after a definite exposure to cold and after the patient was about again, two months after the operation.

CASE XI. *In which a Stony Concretion was found.*—The patient was a boy of 10. The operation was performed in December, 1894. A year previously he had had a very severe attack of localised peritonitis, which at one period closely resembled typhoid fever. Subsequent to this he had eight definite attacks of perityphlitis, two of which were very severe. The boy was rendered an invalid. The operation was much complicated by adhesions, which extended as far as the median line. The cæcum, terminal ileum, appendix, and free end of the omentum formed one confused mass. The appendix was discovered with difficulty. It was buried in a clump of adhesions derived from the omentum. Its tip was represented by a slough. Its cavity contained muco-pus and a small hard stony concretion the size and shape of a cherry stone. The patient made an uninterrupted recovery.

CASE XII. *The Appendix Closed by Bending.*—A lady, aged 24, whose appendix was removed on January 9th, 1895. The first attack was four years ago; since then there had been twelve definite attacks and many minor ones. The patient was rendered more or less of an invalid. The operation was very simple. There were no adhesions except those on the appendix, which was acutely bent upon itself as in Case IX. The tube beyond the bend contained pus. An enlarged lymphatic gland near by was removed. The patient has made a good recovery.

CASE XIII. *In which it was impossible to Remove the Appendix.*—Operation January 17th, 1895. The patient, a lady of 25, had her first attack four years ago; since then she has had on an average eight attacks in the year. The adhesions were as extensive as in Case VIII. The cæcum was lost in the pelvis among old and tough adhesions. I was unable either to bring it into view or to discover the appendix. Many feet of the ileum were matted together in great confusion. The omentum was adherent. I divided as many of the adhesions as was possible, but left many untouched on account of the bleeding. The patient has made an uninterrupted recovery, but it is as yet impossible to say what effect the operation will have upon the attacks.

CASE XIV. *A Simple Case.*—A gentleman, aged 24. Appendix removed January 24th, 1895. First attack in January, 1894, was moderately severe; second and third attacks laid him up two and four weeks respectively; fourth attack in November was very severe, and the recovery was slow and interrupted. The operation was simple. The appendix, as shown by its mesentery and the ulceration in its interior, had evidently been twisted upon itself. There were no adhesions except about the appendix, which was, however, free from attachments. The patient's recovery has been rapid and uneventful.

CASE XV. *Three Concretions in Appendix; Perforation in Cæcum.*—London Hospital. Operation May 14th, 1894. Man, aged 48. Three attacks of perityphlitis, all of some severity. The appendix was found in the ileo-cæcal fossa. It was adherent to the cæcum, and contained three small stony concretions. In setting it free from the cæcum a perforation in the viscus was made evident. This hole was closed with a double row of sutures, and the appendix removed. The patient made a perfect recovery.

CASE XVI. *Appendix Distended with Pus.*—London Hospital. Appendix removed June 1st, 1894. Woman, aged 32. Patient had had eight attacks of perityphlitis within the previous nine months. During this time she had been confined to her bed almost continuously. The lumen of the appendix was occluded close to the cæcum. The tube beyond was distended with pus. There were no adhesions, and the operation was most simple. Patient made a sound recovery.

CASE XVII. *Appendix Distended with Pus.*—London Hospital. Appendix removed September 28th, 1894. The first two attacks of perityphlitis were respectively eight and six years ago. During the last twelve months the patient had had four attacks, making six in all. The lumen of the appendix was occluded, and the tube beyond was filled with stinking pus. There was some difficulty with adhesions. Perfect recovery.

CASE XVIII. *In which the Appendix was Adherent to the Rectum, and contained a Faecal Concretion.*—London Hospital. A woman, aged 27. Appendix removed January 11th, 1895. The patient had had eleven attacks of varying severity, and which had confined her to bed for periods varying from two days to three weeks. The operation was attended with considerable difficulty. The omentum was adherent to the apex of the cæcum, and was divided between ligatures. The appendix, after some search, was discovered in the pelvis, where it was adherent to the rectum. Much time was occupied in separating the little process from that viscus. I was afraid there might be a perforation into the rectum which (at the depth at which it lay) might be difficult to close. The bowel, however, was sound. After clearing away the remaining adhesions the appendix was removed. It contained a faecal concretion, composed of concentric laminae of various tints, about the size of a Spanish nut. It was readily cut with a knife. The operation occupied over one hour. The patient has recovered without a bad symptom.

THE Departmental Committee appointed by the Home Secretary to inquire into the various processes connected with the mixing and making of brass and kindred amalgams paid a visit to Glasgow last week. Evidence was taken and various brass foundries were visited.

REMARKS

ON
EXCISION OF THE RECTUM, WITH A REPORT OF
FOURTEEN CASES, AND A NEW RECTAL
TRUSS.¹

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PERHAPS one of the best recent advances in the operative treatment of malignant disease is the gradual replacement in cancer of the alimentary canal of operations affording only temporary alleviation by those which have for their aim not simply the relief, but the cure of the patient. Thus I find in my practice excision of the rectum and colectomy are gradually replacing colotomy. In time possibly pylorotomy may supersede gastro-enterostomy; but gastrostomy for cancer of the œsophagus, if doomed to disappear, must fail on its own merits, as it is hardly likely that a radical operation can ever take its place.

Excision of the rectum, except in the minor degree, has not been warmly advocated by surgical writers in this country. Even the pioneer, Harrison Cripps, out of an experience of 400 cases of cancer of the rectum coming under his notice, has only actually operated in 38 (1892), and does not appear to approve of the major operation. Treves² does not even mention the name of Kraske or Alexander in connection with the subject. He states that the term proctectomy is misleading, "as the rectum is never excised, but only a comparatively small part of it." He mentions 3 inches as the usual limit, and considers that "in no case should the peritoneum be deliberately opened." Jacobson³ only mentions the high operation to condemn it, but American and Continental surgeons regard it with much more favour. The writer's experience, very much more limited than that of Mr. Cripps, is that the most extensive operations upon the rectum for cancer are in every way more hopeful than those performed for much less advanced disease in the mouth, and which almost all surgeons would consider it a duty to undertake.

In the same way that cancer of the tongue requires different procedure for its removal, in accordance with the situation and extent of the disease, so proctectomy varies considerably, and a different operation will be called for in each of the four following classes of case:

1. Carcinoma of the lower end of the bowel all within easy reach of the finger.
2. Growths which have commenced high up, but are or have come down to be within reach of the finger.
3. Extensive growths commencing low down, but the limits of which cannot be defined.
4. Growths too high to be recognised without laparotomy.

Of the first class Cases I, II, and IX were satisfactory examples. Cases VIII and XI were more of the nature of class 3; that is, the tumours were large, but the upper edge was within reach of the finger. In these five cases the lower part of the rectum was removed by the operation advocated by Mr. Cripps. First an incision is carried from the anus to the tip of the coccyx, splitting the rectum in the middle line posteriorly. If the disease is placed quite low down, incisions are next made round the anus, which is removed with the growth, otherwise it should be left. When the above incisions are completed the lower part of the bowel is freed on all sides with scissors well beyond the limits of the growth, great care being taken of the urethra. During this stage hæmorrhage is free and is I think best dealt with by operating rapidly whilst an assistant does what he can with sponge compression. Finally the bowel is divided. This was formerly effected with an *écraseur*, the wound being left to granulate. Recently, since Case II, more bowel has been drawn down, cut through with the scissors, and sutured to the posterior angle of the wound when the anus has been excised, but to the latter when it is left. In Cases VIII and XI it was necessary to remove a part of the posterior wall of

¹ Read before the Liverpool Medical Institution on February 14th

² *A Manual of Operative Surgery*, 1892.

³ *The Operations of Surgery*, 1891.

the vagina. They were not very satisfactory, though the result was much better than colotomy. In XI there were infected lymphatics in the form of fine cords running up the wall of the bowel beyond the line of division. This is in my experience very unusual in rectal cancer, and may perhaps be accounted for by the fact that the growth was pure colloid. The patient died of internal recurrence ten months after the operation. Case VIII was only 29 years of age, and as is well known, the younger the subject the more malignant the growth. At first she was very well pleased with herself, so much so that she married; but subsequently I saw her with recurrence in the pelvis, not in the parts originally affected nor in the liver, but apparently in the cellular tissue. She was last seen in this condition two years after the operation, and I did not think it probable then that she would live many months longer.

The second class of cases may sometimes be very satisfactorily treated by operation. The method adopted has been to remove the coccyx, and if necessary a part of the sacrum, then excise the growth through an incision in the posterior wall of the rectum. Cases X, XII, XIII, and XIV were of this description, XII and XIII verging into class 3. Case X I was very pleased with, as I was able to carry out the true principles of Kraske's operation. The patient was a man, 64 years of age. He had a malignant ring stricture of the upper part of the rectum, which was invaginated so that it could be reached by the finger. I was able to draw the tumour out of the wound made in the back of the rectum, and there to excise it after having passed sutures through the bowel in the manner adopted by Maunsell, of Dunedin. Two inches of bowel were removed which was completely invested with peritoneum. It was not thought wise to close the opening through which the excision had been performed, in order that the sutures in the bowel might run no risk of being burst asunder by a collection of faeces retained by the anus; but this wound, allowed to remain open for a temporary purpose, continued as a permanent fistula. In every other respect he made a rapid and good recovery. Five months later as the fistula was still open, and as the rectum examined through it proved to be quite free from recurrence, a plastic operation was done, and he was sent home with the lower bowel performing its functions in a perfectly normal manner. In order to avoid such a fistula on a future occasion, it would probably be better to divide the posterior wall of the rectum the whole way up from the anus, closing it again to within an inch of the latter after the growth was excised. The opening left would paralyse the action of the sphincter, and if it did not heal by granulation could be very readily repaired. This was done in subsequent cases. It might be sufficient to place a large tube in the anus.

In Case XII the growth commenced $1\frac{1}{2}$ inch above the anus and extended beyond reach. Through a similar incision a segment of bowel about 4 inches in length was removed, and the upper and lower portions reunited. He made a good recovery, and exactly a year later his doctor wrote me that he was quite free from recurrence, comfortable, and had control over his motions.

Case XIII occurred in another old man of 64. The malignant ulcer was situated on the anterior wall of the bowel. It commenced $2\frac{1}{2}$ inches above the anus, and extended upwards for nearly 3 inches, consequently its limits could not be defined with the finger. It was removed through a similar incision with a good margin of healthy mucous membrane. The remaining portions of rectum were dovetailed together, but the lower part of the posterior incision was left unsutured, as in the other cases, in order to prevent retention of faeces in the rectum during healing. He recovered without any bad symptoms. Seen fifteen months after the operation, he was found to be troubled with prolapse and the mucous discharge which goes with it. A small plastic operation would probably have mended matters, but as he was now 65, and a truss which answered well had been discovered in the meantime, it was decided not to operate again at present.

Case XIV was admitted for severe intestinal obstruction, for which immediate and simple relief was imperative. Inguinal colotomy was done, and he soon recovered. The cause of the obstruction was a small but tight malignant stricture high up in the rectum, so high that it could only just be touched. The patient was not a good subject, having been much

pulled down by the obstruction, and he was 60 years of age; however, I was tempted by previous successes to try and remove it for him. The operation was performed as before through the posterior median incision of Kraske. It was not nearly so easy as in Case X, in which Nature had conveniently invaginated the bowel for me, and the hæmorrhage was rather free. The end of it was that he became too weak for me to complete the operation by suture, so the upper end of the bowel was brought out of the top of the wound, a glass tube ligatured into it, and the patient put back to bed as quickly as possible. Unfortunately, the shock continued, and he died in eight hours. Had this patient been in ordinary health I feel sure he would have recovered. It was an error of judgment; under the circumstances I ought to have declined to operate.

The cases included in Class 3 are much more hopeful than would be supposed. Such patients, unless they elect to remain as they are, must choose between colotomy and the high operation. I unhesitatingly recommend the latter whenever possible, even although it may be doubtful if the entire growth can be eradicated. What we have to look to are the comfort and the subsequent duration of the life of the patient. Can these be improved without undue risk? From what I have seen of death from cancer of the rectum, I believe it to be incomparably more distressing than death from internal extension or recurrence of the growth, so that if the local disease can be removed it is at least a gain to the patient's comfort whilst he lives. Colotomy affords less relief than excision, and for a much shorter period. Moreover, the patient always prefers the artificial anus to be somewhere near the site of the natural orifice, and with the help of a new truss, to be described further on, I have found it easier to retain the faeces or a prolapse after excision than after colotomy. The mortality of Kraske's operation must, of course, be higher than for such a simple proceeding as inguinal colotomy, but it really seems to be much less than one would suppose from its apparent severity.

Cases III, IV, V, VI, and VII were of the nature of Class 3; that is, the growth extended upwards out of reach, and all the rectum below it was excised. The rectum was in all more or less fixed, but in none hopelessly immovable, nor could any secondary deposits be detected, otherwise I should not have operated. The amount of bowel removed varied from 5 to 8 inches. The duration of life in these cases was as follows: One 11 days, one 10 months, one 1 year, one $2\frac{1}{2}$ years, and one is still living $3\frac{1}{4}$ years after. The mode of operating is to place the patient on the left side with the knees up. Then make the first incision from the anus directly backwards to the middle of the sacrum, rapidly clear the soft tissues from the sides of the coccyx and lower half of the sacrum, divide the latter with saw and forceps, and tear the bones away with lion forceps and a few touches of knife or scissors. The bleeding is free and should be at once stopped with compression forceps or sponges. Next the lower end of the rectum is detached with knife and scissors. First one side is cleared and plugged with sponges, then the other, care, of course, being employed in detaching the bowel from the neighbourhood of the urethra and back of the bladder; from the hollow of the sacrum it shells out with the greatest ease. At this stage the bowel hangs loose, and it is convenient now to ligature the vessels which have been plugged with sponges. This having been accomplished, the higher part of the rectum is liberated by opening the peritoneal cavity, and dividing as much of the meso-rectum as is necessary. In the latter there are very large vessels which should be clamped or tied before being cut. When plenty of bowel has been drawn down, the rent in the peritoneum may be loosely closed with a few fine sutures, and a large glass intestinal drainage tube plugged with wool is inserted into the bowel and ligatured above the growth. If the intestine is loaded with faeces the tube had better be introduced below the stricture and forced up—to the detriment of the specimen—as it is very difficult to avoid some escape of faeces when this powerful bowel is opened under high pressure. The tube having been fastened in, the diseased part is cut off and the stump sutured to the top corner of the wound—the higher the better, as less gut needs to be drawn down, and the orifice is in a more favourable position for the truss. There is no tension on

the sutures in this operation. The remainder of the large wound cannot be closed, or only in part; it is therefore filled with antiseptic dressings through which the tube from the bowel projects. When there is much pressure of faeces, they are caught in a basin for the first few hours, and subsequently in a waterproof bag containing antiseptic wool; but when there is no such collection the bag only is used. The advantages of the tube are that it keeps the wound aseptic for a few days, and enables all the large vessels in the rectal walls to be closed with a single ligature, whilst the advantage in discarding it would be that one could fashion a smaller and better artificial anus. The former considerations have seemed to me to outweigh the latter. The tube generally sloughs out on the fourth day, and the wound takes about eight weeks to heal. Subsequently a special rectal truss is required to prevent prolapse and incontinence of faeces. A small plastic operation will considerably improve the anus; but when a good deal of bone has been removed some more rigid support than skin is necessary for comfort.

The chief danger of this operation is shock. It is the only one I have met with so far, and is almost entirely due to hæmorrhage. The patients are generally rather old, and they are already reduced by the disease. If the operator stopped to ligature every vessel as it was cut, the length of time employed would prove an equally fruitful source of shock. Expedition is necessary, and I think the best success is attained by bold and rapid operating, whilst the ready fingers of an assistant compress the vessels with sponges as they are cut.

The fourth class, in which the tumour can only be discovered on opening the abdomen, is not represented in my cases. Supposing such a growth to be suitable for removal, I should deal with it by one of two methods, according to the condition of the patient and the accumulation of faeces above the stricture. The safer operation, suitable for those patients in which the symptoms of obstruction are pronounced, would be to doubly ligature and divide the bowel above the growth, taking the upper end out through a small separate wound in the inguinal region, where subsequently a tube could be inserted and an artificial anus established. Then excise the diseased portion of the rectum, and invaginate and close the lower end. If the patient were in better condition, and there were no great accumulation of faeces, I should simply excise the growth and approximate the cut ends with Murphy's large sized metal button. This ought to be a favourable position in which to use it.

Mortality.—The number of deaths from the operation in these 14 cases was 2, or equal to 14 per cent. Both occurred in somewhat unfavourable subjects operated upon by Kraske's method. If cases were selected the death-rate would be greatly reduced. Mr. Cripps records a death-rate of between 7 and 8 per cent., his cases including none operated on by Kraske's method, but from reasons which may be gathered above I have declined operating in none but absolutely hopeless cases. The simpler ones all recovered.

Duration of Life.—Of the 12 patients who recovered from the operation 6 have since died from recurrence of the growth, the period of death varying from ten months to two and a half years, and giving an average of exactly one year and eight months. Of the 6 still living, the time elapsed since the operation ranges between ten or more years and one year and a-quarter, giving an average duration of between three and a-half and four years. The absence of exactitude is due to the fact that the earliest case left for work in America four years ago, hence, if still living, it would be fourteen years since his operation. Most of the hospital cases who present themselves for treatment with cancer of the rectum have had symptoms of its presence for from nine months to a year, and sometimes longer. Now what is their expectation of life? This is a question I am not prepared to answer definitely, but so far as I can gather from experience in my own practice and that of my friends, and from the results of colotomy, it would appear that the average expectation of life in those who are sufficiently bad to apply for relief cannot exceed a year even when colotomy is performed. Now my cases of excision taken as they stand, including the whole 14 with 2 deaths, show an average period of life of upwards of two and a-quarter years since the operation, which is probably more than double their expectation under any other treat-

ment; and this without counting the fact that 6 patients, including some of the most hopeful, have a prospect of living for some years to come, and thus adding considerably to the success of these statistics. During their survival all my patients have returned to work, with the exception of two ladies, who had no work to do, so that the result of the operation has been not only a gain in life but a gain in usefulness, and also a gain in comfort.

Other Results.—One patient only suffered from stricture consequent upon the operation, Case II. In the earlier slight cases I followed Harrison Cripps in not stitching the bowel to the skin. Under these circumstances the funnel-shaped wound cicatrices, and is liable to contract and form a stricture. Case I could retain faeces except when attacked with diarrhoea. Cases III, V, VII, IX, and XIII suffered from more or less prolapse of the bowel and mucous discharge. In VII I excised the prolapse with very little benefit, as it soon returned. In IX, a slight case, I narrowed the opening, and he subsequently had very good control over the bowels. Case IV had a preliminary colotomy done, so of course was not troubled with his rectum. In Cases X and XII the upper and lower parts of the bowel were approximated, and the normal characters of the rectum restored. It is only in the more severe operations where the cut end of the bowel is stitched to the skin that a bad prolapse takes place. This is due to the absence of the support natural to the parts by the loss of a portion of the sacrum, the coccyx, and the levator ani and sphincter muscles. Complete excision of the prolapse does not touch the cause, and therefore does not cure it. I felt this prolapse and constant mucous discharge from it to be the weakest element in the results obtained by the operation, and therefore every effort was made by our instrument maker to remedy it by means of rectal trusses, but without success. They not only would not retain faeces when liquid, but often allowed the prolapse to escape beside the pad. As a matter of fact, no instrument tried maintained a constant pressure in the ordinary varying positions of the body. I therefore requested Mr. Reynolds, of Liverpool, to make a rectal truss to my design, shown in the accompanying figure,

New rectal truss designed by the author for use after excision.

which he satisfactorily accomplished. We tried it first on Case VII, the worst, and he at once said it was the very thing he had been wanting for the past two years. Poor fellow, he had been steadily going on with his work, which involved constant walking about with a large prolapse, and now that he was made quite comfortable in this respect he soon began to show signs of recurrence, from which death occurred six months later. The truss has since been used in Cases V and XIII, and in both has proved very satisfactory. The special feature of the instrument is that counter-pressure is obtained by continuing the spring supporting the rectal pad above the waist belt to end in a circular pad in contact with the base of the spine. The rectal pad is made to a cast of the orifice, and is covered with indiarubber. Messrs. Down Brothers, of St. Thomas's Street, S.E., have undertaken to manufacture the truss if required in London, and they suggest that the spring action may be improved by using a spiral spring in the upper pad, which I think very probable. Of course careful measurement and accurate fitting are essential, and it will be found that the higher the cut end of the rectum has been implanted the better the truss will answer, as the rectal pad will be more out of the way when sitting down. I think the same principle may be useful in other affections for which a rectal truss is required, and as

TABLE OF CASES.

Case.	Date.	Sex.	Age.	Situation of Tumour.	Operation.	Amount Removed.	Result.	Died Since.	Living.	Remarks.
	1881	M	47	Low down behind	Simple excision	Inches. 2½	Recovered	—	Years. 10 to 14	Seen several times, but left for America in 1891 for work.
II	1888	F	56	Low down all round	"	2½	"	2½ years	—	Had stricture.
III	1890	F	37	Sarcoma 2½ in. above anus, extended out of reach	Kraske	7	"	1 year	—	Had complete obstruction at time of operation.
IV	1890	M	46	1½ in. above anus, extended out of reach	"	6½	"	10 mos.	—	Preliminary colotomy, left ureter infiltrated.
V	1891	M	41	1½ in. above anus, extended out of reach	"	7	"	—	3½	At work ever since, had prolapse, now cured by truss.
VI	1891	F	55	1 in. above anus, extended out of reach	"	5	Died	—	—	Died on 11th day, gradual exhaustion with delirium.
VII	1892	M	56	3 in. above anus, extended out of reach	"	8	Recovered	2½ years	—	Prolapse, excised, recurred, cured by truss.
VIII	1892	F	29	Near anus and extended upwards for 3 inches	Simple excision	4	"	2½ years	—	Part of vagina removed, very well at first, got married.
IX	1893	M	59	Near anus	"	3	"	—	2	Very well, good control over bowels.
X	1893	M	64	Ring stricture high up, invaginated	Kraske approximation	2	"	—	1½	Very satisfactory result, rectum functionally normal.
XI	1893	F	42	Lower 3 inches	Simple excision	4	"	10 mos.	—	Part of vagina removed, rapid recurrence owing to infected lymphatics.
XII	1893	M	56	1½ in. above anus, extended out of reach	Kraske approximation	4	"	—	1½	Rectum functionally normal.
XIII	1893	M	64	2½ in. above anus, extended out of reach	"	4½	"	—	1½	Rectum incomplete behind, considered too old for plastic as truss acts well.
XIV	1894	M	60	Ring stricture high up	Kraske	4	Died	—	—	Patient debilitated by previous acute obstruction and colotomy, died shock same day.

the spring carrying the pads may cross the waistbelt at any angle, I do not see any difficulty in applying the principle in cases of colotomy. I must quite dissent from the view expressed by some German writers that a new sphincter is developed, or that the act of defecation can become normal again after the lower end of the rectum is excised. Solid motion gives no trouble; liquid always runs away. When the whole rectum is removed even solid motion is passed unconsciously. Hence the great value of Kraske's operation, with approximation, and the use of the truss in other cases.

Recurrence.—As in all other cases of carcinoma, unless taken very early recurrence is the rule, and the exceptions are not numerous in cancer of the rectum. Case I was a genuine cure, having survived upwards of ten years. I think Case IX, and possibly X or XII, may also prove to be cures. Case V has passed the critical three years, but his was a very bad case to commence with, and he has made some complaint of sciatic pains, which are certainly suspicious. But even if recurrence occurred in every case it would not influence the favourable view I entertain of excision as compared with colotomy or simpler palliative measures, so long as the mortality of the operation continues low. And should it tend to rise it may at any time be met by a more rigid selection of cases; of late I have accepted quite 75 per cent. Recurrence is most frequent in the liver and lumbar glands, where it causes gradual exhaustion with but little pain. It has also a somewhat marked tendency to occur in the pelvic cellular tissue, where it is liable to invade the sacral plexus, and give rise to a painful sciatica. Contrasted with cancer of the tongue the recurrence is much more favourable, as the latter is just as distressing and dangerous to life in the neck as it was at first in the mouth.

Age.—Cancer of the rectum extends over a wide period of life. The respective ages of my patients were 47, 56, 37, 46, 41, 55, 56, 29, 59, 64, 42, 56, 64, 60. The youngest patients whose growths I have examined microscopically were 23 and 25, but I once saw, with Mr. Reginald Harrison a boy of 14, who had a malignant tumour of the rectum possessing all the features of carcinoma. Colotomy was performed, but he died within six weeks with extensive secondary deposits in the liver.

Sex.—Seventy-eight per cent. of the patients were males and 22 per cent. females. Roger Williams⁴ gives the liability of the sexes to rectal cancer as equal, but I have certainly seen many more cases in men than in women.

Minute Structure.—The histological features of the tumours are not without interest. Eleven were specimens of the usual

⁴ Influence of Sex in Disease.

cylindrical-celled carcinoma of this neighbourhood, a few showing early colloid change. Some might be mistaken for so-called scirrhus if roughly and partially examined. The old and degenerated tracts of growth often have a round-celled appearance; but the young growth when in columns is always cylindrical-celled, and when in masses has a row of columnar cells round the periphery. The exceptions were Cases III, VIII, and XI. The first was a round-celled sarcoma of the outer coats of the bowel, commencing 2½ inches from the anus, and attaining the size of a large lemon, with the mucous membrane quite intact passing through the middle of it. The growth was very hard, and had produced a tight stricture. Recurrence took place in the internal organs and in the skin of distant parts, the latter being a condition I have never met with in rectal carcinoma. Sarcoma in this position is distinctly rare; this is the only case which has come under my observation. It resembled sarcoma of the stomach and small intestine in appearance and distribution. Both are equally rare. Case VIII was very interesting. It commenced six years before coming under treatment as a polypoid tumour about the size of a large filbert, which could be projected through the anus on straining, but was easily returned. Apparently malignant growth commenced in connection with it about five years later, when it became fixed, and remained up until three months before operation. At this time it gradually began to protrude again, but could not now be returned. When seen, the projecting part was merely a small polypoid portion of a rectal carcinoma growing from the mucous membrane well within the anus, the latter not being even infiltrated. The oldest part of the growth was situated on the posterior and lateral parts of the rectum, but it had extended round to the front, and was fixed to but did not penetrate the vagina. Notwithstanding its position, this growth was a squamous-celled carcinoma. The cells were very bright and clear, reminding one more of bladder than skin epithelioma; but an epithelioma it unquestionably was, and one which had commenced in the rectum not the anus. I explain its anomalous character on the ground that it had the same origin as dermoid cysts of the rectum, namely, in a tract of sequestered dermal tissue. This is the only case of the kind that I have heard of. Case XI was one of pure colloid carcinoma. The lymphatics were freely involved and could be traced up the wall of the bowel. Naturally symptoms of recurrence showed themselves somewhat early. Slight-colloid change in the ordinary cylindrical-celled carcinoma is quite common, and even the advanced condition is not rare. I have seen several examples in the rectum and colon.