different forms of cystic tumour of the jaw just mentioned. In support of this hypothesis, I may further add that all the different peculiarities in the number and form of the teeth are distinctly hereditary.*

PARTIAL EXCISION OF THE RECTUM: RECOVERY.

By ARTHUR E. BARKER, F.R.C.S.Eng.,

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REMOVAL of a considerable portion of the rectum for malignant growths being still a somewhat rare operation, the record of the following, though it be but a single case, may prove of use in view of the scarcity of data we possess at present for judging of the actual and relative risks of the operation and also its ultimate results.

J. T., aged 58, a whitesmith, was admitted into University College Hospital under my care on September 6th, 1881. He complained that since the beginning of summer he had noticed blood after his stools, and had suffered much from *pruritus ani*, stitch in the side, and flatulency, the distension of his abdomen requiring him often to undo his clothes for relief; he had also lost a little flesh lately, and noticed that he did not pass urine quite so well as usual.

His family history was good; none of his relatives were known to have had any tumours.

On examination, an irregular, flat, nodular growth was felt one inch and a half up the rectum, reaching from this point upwards for about another inch and a half, and laterally over the posterior and right aspect of the gut to a somewhat greater extent, but leaving the left and anterior part of the circumference free for fully one inch. The finger could be passed thus all around the margin of this flat growth, which was felt to be freely movable on the structures lying outside the rectum. No glandular infiltration could be detected anywhere. Blood was passed after each motion, and the patient complained of a bearing down pain; there was also much constant dull aching in the sacral and lumbar regions, groins and testicle, aggravated by standing long and by defæcation. There was no history of constipation alternating with diarrhoea, but then the bowels had been habitually relieved by laxatives, the motions being either liquid, or firm and small; there was no purulent or slimy discharge from the bowel.

The history of this case and physical examination of the rectum leaving no doubt that the case was one of epithelioma of the bowel (a view shared by my colleagues), the desirability of excision of part of the gut at once suggested itself, for the following reasons. 1. The growth appeared to be of comparatively recent formation, and was plainly limited to the wall of the gut, being freely movable with the latter on subjacent structures; no glandular infiltration was felt, or indeed to be expected, in view of the growth being so young, as cancers of the rectum go. 2. The patient was not too aged, and, except for some loss of flesh due to suffering and anxiety, appeared to be in fairly good health. 3. The growth was well within reach on all its aspects, and lay chiefly on the least dangerous aspect of the rectum.

I therefore removed the implicated portion of the rectum, as follows, on September 14th. A silver catheter was first passed into the bladder, and the patient placed in the lithotomy position. Along the finger passed into the rectum a sharp-pointed bistoury was introduced, and, being thrust directly backwards at the tip of the coccyx, was made to lay open the rectum from this point forwards directly in the middle line. In the wide chasm thus produced, the growth was brought well into view. I then divided the greater part of the circumference of the gut on its right, front, and posterior aspect, at a point midway between the lower margin of the growth and the border of the anus. Then, clearing the wall of the rectum from the surrounding structures with knife and scissors upwards at a full half-inch from the margin of the epithelioma, I finished the excision by a crescentic incision with Paquelin's cautery-knife above. Several vessels of considerable size were divided in this dissection, and bled freely, but were controlled finally with hemp ligatures. Being satisfied that all the growth was now removed, I placed a plug of salicylated wool on the wounded surface, to arrest a good deal of oozing which still persisted; this, with a drain-tube in the angle of the median wound, completed the dressing.

The growth, which appeared to have been completely removed with a good margin of sound tissue around it, presented all the characters of epithelioma of the columnar kind, as found in the rectum. The specimen is now in University College Museum.

* For further illustrations of the multilocular cystic tumours, the reader is referred to the plates indicated.

The subsequent course of the case may be briefly summed up. On recovery from the chloroform, a good deal of pain was complained of, but the patient slept fairly well during the evening. At 10 P.M., the urine was drawn off with a catheter, and one-third of a grain of morphia was given. Later on, the abdomen became very painful and distended, and remained so for some days. This condition, which gave rise to suspicion of peritonitis at first, was relieved a few days later by small doses of oil of cajuput, and proved to be nothing more than a return of the same flatulence from which the patient had suffered occasionally for some months. There was no real tenderness or rigidity of the abdomen, and no effusion of fluid, and the other evidences of peritonitis were absent. Nevertheless, this painful distension was disquieting while it lasted, and led me to the use of morphia freely, perhaps more so than was good for the patient's digestion. All troublesome symptoms soon disappeared, at all events, on its discontinuance. The temperature, during the first week, was above normal, ranging from 100° to 102.6°, the average being 101°. After this, it soon sank below 99° permanently. For the first few days, the urine had to be drawn off, and was found to contain a trace of blood, but this soon disappeared.

The wound was washed out regularly two or three times a day with Condy's fluid, followed by a solution of salicylic acid in spirit and water, a drain-tube being left in the intervals for the escape of gas and discharge. On another occasion, I should not plug the wound with wool, the removal of which gives some trouble when caked with clotted blood.

On the 6th, a little fæces came away, and continued to do so freely from the seventh day, with much relief to the patient.

From this time on, there is little to note, except that the patient made a steady and good recovery. He got up on the thirteenth day, and regularly after that, and left hospital on the twenty-eighth day. At this time, the whole wound was not completely healed, but had much contracted, being only about three-quarters of an inch broad from the margin of the anus. Above it, there was marked narrowing of the rectum, the finger only admitting the forefinger, but this without force or producing bleeding. There was incontinence of fæces when the motions were loose; otherwise, he had some control over them.

After this, I saw the patient from time to time, and gave him a bougie for occasional use, to prevent any further narrowing of the gut.

In May 1882, I asked him to come up from the country for inspection, and was agreeably surprised at the improvement in his general appearance and health. He stated that the bowel gave him no trouble now, except when he was constipated, when there was a little difficulty in evacuation; also that there still was a little incompetence of the sphincter when the motions were liquid, but only to the extent of allowing some moisture to escape. On examination of the bowel, no trace of recurrence could be detected anywhere; but I was surprised, after what he had stated in regard to the comparative ease with which he passed his motions, except when hard, to find a very marked narrowing of the gut about an inch from the anus. I could hardly believe his statement that it gave him no trouble. The posterior wall of the gut appeared to have shrunk greatly, and to have been drawn over tightly against the anterior and left side, where, it will be remembered, a small portion of the circumference of the level had not been removed. In this way, a narrow slit was produced, which only admitted the tip of the finger, and through which there was a difficulty in inserting the latter, owing to the valve-like arrangement of the contracted part behind. This arrangement, I think, explained the fact that the patient complained of no great difficulty in defæcation; for the fæces pressing against this valve from within would distend the gut, and force it away from the anterior wall, and so enlarge the slit, whereas the finger found a great difficulty in getting round the edge of the valve when pressed upwards against the anterior wall.

Having the patient in hospital, I advised him to let me seize the opportunity for dilating the narrow part, to which he consented. I therefore notched the valve on each side with a bistoury, and then inserted bougies of increasing size for a few days, after which he left hospital, feeling relieved. His reason for allowing the bowel to contract as described (for I had given him a bougie for his own use when he left the hospital) was, that he had feared incontinence of fæces if he kept the opening too large. Anything of this kind was peculiarly unpleasant to him, as his work obliged him frequently to go up and down ladders.

I saw the patient on August 23rd, 1882, almost a year after operation, when he came up to hospital at my request, that his rectum might be examined. He looked and felt in the best of health, and

complained in no way of the bowel, except when constipated, when he also had a little pain at the upper part of the sacrum. There was no trace of recurrence anywhere, but a little recontraction had taken place since last seen in May. The bowel, however, still admitted the index finger well beyond the narrow spot, and above this all was healthy.

This case appears very encouraging, as showing, like many others recorded, in the first place, the possibility and desirability of an early diagnosis of cancer of the rectum; and in the next, the feasibility of its complete removal with safety to the patient in properly selected cases.

I have requested this patient to present himself occasionally at hospital for examination, and shall report further as to his condition, should there be any recurrence.

NOTE ON THE PRACTICAL APPLICATION OF SPONGE-GRAFTING.

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As from time to time since I wrote my paper on "Sponge-Grafting" in the *Edinburgh Medical Journal*, cases have been recorded in the *BRITISH MEDICAL JOURNAL* and elsewhere, in which its application for the purpose originally intended has been successful or unsuccessful, I think it may not be uninteresting if I add a few words in addition to what I have already written on the subject in regard to its practical application.

The first experiments I made were by placing a thick slice of sponge in the wound, sufficient to at once fill up the gap caused by the loss of tissue. There are several objections to this procedure, the chief being that a mass of sponge three-quarters to one inch thick placed over a suppurating wound becomes soaked with pus, and prevents any free drain from taking place. The pus so accumulated is almost sure to putrefy, and so interferes with the process of organisation going on in the deep layers. The danger of contact of such a putrefactive mass with an open wound, although less in the case of one that is granulating, is probably not to be underestimated.

I have, accordingly, generally found that in such cases it is necessary to cut off the superficial parts of the sponge, leaving the thin layer, which had become infiltrated with organising tissue, adherent. All this inconvenience can be avoided by adjusting the sponge in successive thin layers over the wound. These layers are not more than an eighth of an inch thick, and must be cut in large slices with a perfectly regular surface. The only method I know by which this can be accomplished is by means of a freezing microtome. I happen to possess a large microtome suited for the purpose, which I employ for cutting sections of the entire brain. It holds an entire Turkey sponge; and, when the latter is frozen, the whole mass can be cut into perfectly regular slices, of any desired thinness. Such a layer can be laid with the greatest facility over the wound, so as to fit into all its irregularities. In a few days, the first layer becomes organised. A second can then be placed over this, and so on, a mass of tissue being thus, in course of time, built up. There is no bagging of pus by this method of applying the sponge, and the danger of putrefaction occurring is reduced to a minimum.

Another precaution that is necessary is, to see that, where the wound is granulating, the edge of the layer of sponge does not come into contact with the pellicle of young epidermis at the side. If so, the epidermis will undermine it, and cause displacement. There ought to be one interval of about an eighth to a quarter of an inch between the edge of the epidermis and that of the sponge.

Dr. Sanctuary, in the *JOURNAL* of December 16th, makes the remark that firm pressure is a *sine quid non* in obtaining adhesion. I agree with him so far that, when first applied, there ought to be firm and equable pressure all over the surface; but I question, after adhesion has once taken place, whether pressure exerts a salutary influence in promoting organisation. On the contrary, I should consider that the interstices of the sponge would fill up quicker if the vessels of the granulating part had free play. I should almost say that, in the treatment of a granulating wound of the lower extremity, it would be advantageous, when the sponge has once taken firm hold, to allow the limb to hang downwards, and probably to encourage the patient to take gentle exercise. By this latter means, the circulation through the granulation loops will be rendered active, and a certain amount of vascular turgescence is what is really required.

As regards Dr. Ferguson's observation (*BRITISH MEDICAL JOURNAL*, December 16th, 1882) that, in a case where he applied a

layer of sponge, a quarter of an inch thick, to a wound of the calf of the leg, and where, after organisation had taken place, the new tissue proved to be sensitive, I may say that this might quite well be accounted for by small branches of nerves being carried into the interstices of the sponge by the granulation-vessels.

LARGE CYST OF THE MESENTERY SIMULATING AN OVARIAN CYST: OPERATION: DEATH.

By CHARLES H. CARTER, B.A., M.D., B.S. (Lond.),
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Cysts of the mesentery are exceedingly rare. At present only a few such instances have been recorded. Dr. R. Watts (*American Journal of Obstetrics*, 1879, xii, p. 333) describes one which was mistaken for an ovarian cyst, and operated upon: the patient died; also Péan (*Tumeurs de l'Abdomen*, pp. 1,111, 1,112, and 1,115) describes three such which were operated upon, one of the patients recovering. Mr. Spencer Wells speaks of what he considers to be one in a note on Mesenteric Cyst and Tumours in the *JOURNAL* of December 9th; and Mr. Knowsley Thornton, in the *JOURNAL* of December 23rd, describes another, which, at the time of operating, he considered of ovarian origin, and included in his list of ovariectomies. The following is an account of a cyst which sprang from the left side of the spine in the lumbar region where the mesentery is attached, and either rose between its folds, or from the subperitoneal tissue below it. Its fluid content was peculiar, and differed from that which has been found and described in the few recorded cases. It was about sixteen pints in quantity, a thin, clear, slightly opalescent fluid, alkaline, specific gravity 1009, giving, on boiling, no deposit, but on adding a few drops of nitric acid a very slight film, redissolved on adding more; no change at the line of junction on pouring some of the fluid on a layer of nitric acid; on adding a 10 per cent. solution of nitrate of silver a very copious white precipitate. The fluid, therefore, contained no albumen, but a large amount of chlorides. Dr. Murchison (*Clinical Lectures on Diseases of the Liver*, p. 61) says these are characters which apply to no other fluid in the body, whether healthy or morbid, but to the fluid from an hydatid cyst. The fluid was carefully examined under the microscope, but no hooklets or anything characteristic could be seen; unfortunately the part of the cyst wall removed was not at once examined to see if it presented the laminated appearance of an hydatid cyst wall. Fluid somewhat similar to this is also found in so-called cysts of the broad ligament.

The following is the history of the case. A. B., aged 44, married twenty-five years, and never pregnant, attended at the Out-patient Department of the Hospital for Women, May 18th, 1882, and was seen by Dr. Mansell Moullin, who found the abdomen distended by a tumour which presented all the characteristic marks of an unilocular ovarian cyst. The patient had noticed the abdomen enlarging for two years. She was admitted under my care June 22nd. With the exception of one brother having died of consumption, her family history presented no marked features. The only illnesses to which the patient referred were one which she called inflammation of the bowels twenty-five years ago, and a second six years ago, when she had "bilious fever" and a second attack of inflammation of the bowels. Her present illness began two years ago, when she noticed a lump in her abdomen, about as large as a good sized orange, about the level of the navel; it appeared to move from side to side with the movements of the body; it gradually enlarged, and as it did so it became less movable; it had grown more rapidly during the last six months. She had had no pain till recently, and that only "a bearing down;" no trouble or difficulty with micturition; the bowels were constipated. She was regular every four weeks, but scantily. On examination, the abdomen was distended, and especially on the left side, where there was dullness on percussion far back; on the right side there was resonance up to the line of the insertion of the rectus muscle. Fluctuation could be distinctly felt all over the front of the abdomen in every direction; in the middle line, dullness extended six inches above the umbilicus. The abdominal measurements were, at umbilical level 38 inches, 3 inches above umbilicus 36 inches, 3 inches below umbilicus 38 inches. The distance from the ensiform cartilage to the umbilicus was 9 inches, from the umbilicus to the pubes 8½ inches: from the umbilicus to the iliac crest, on each side, 10 inches. The vaginal examination showed that the cervix was drawn over to the left side, the fundus lying towards the right foramen ovale; the sound passed 2½ inches; the uterus was movable: nothing of the cyst could be felt by internal examination. The case was diagnosed as an unilocular ovarian cyst, and on July 13th she was operated upon. An