fixed in this position. We should then get a union something like Maunsell's method. I tried it in one case, but the union was too near the anus, and therefore too fixed to invaginate. It would be more suitable for union high up the rectum.

As a rule there has not been any amount of shock after the most severe forms of the operation, even though it may have taken a very considerable time, and many of the patients were elderly men—half were 60 to 70 years of age. If the operation is done with the patient almost prone, very little blood is lost, because almost all vessels are clamped with the surrounding tissue before division. In one case (that of an elderly woman) the pulse was very bad at the end of the operation, and I was very much alarmed as to her condition, but directly we got her on her back again it improved so much as to completely relieve our anxiety. I see in my notes that one of the younger patients, a man aged 44, with no disease other than the rectal cancer, did suffer severely from shock, whereas the greater number of those between 60 and 70 had almost no shock at all with the same kind of operation.

I find the best position for drainage for patients in the sacral operation is on the back. They cannot, however, bear pressure on the wound, and you must take the pressure off by so arranging pillows beneath them (one under the back and another under the buttocks) that a hollow is left corresponding to the sacrum. But I see no object in keeping the patient rigidly on the back for any length of time. During the first twenty-four hours, when oozing is free and the peritoneal cavity is getting shut off by adhesions, I think it very desirable. After that I think it should alternate with the lateral position.

An interesting question in connexion with the results of operation is as to the amount of control over the evacuations which the patient possesses. As a rule the result is much what it is after a colotomy on the left side. The bowels act once or twice daily, and leaking is, as a rule, very slight or absent, unless the patient gets an attack of diarrhoea. As I have already said, after circular union the action of the bowels may be that of the normal rectum.

With regard to the age of the patients, I have just stated that half the total number of patients were 60 to 70 years of age, one Kraske case was 69; another case, a partial excision of the anal segment of the rectum and the inguinal glands, was 76. Neither of these two elderly patients suffered from shock. One woman with most extensive adenoid cancer (microscopic examination) of the rectum (the fatal case from shock) was only 26, and another, also with very extensive cancer, was only 28. It is sometimes stated that the prognosis as to recurrence is very bad in cases under 50, but one of my patients, who has gone three years without recurrence, was only 44 at the time of the excision, and the growth was so extensive I had to remove all the lower end of the rectum and make a sacral anus; and the case in which there was no evidence of recurrence until six years after operation was only 39 at the time of the operation.

I have not yet said anything about the method which I employ for draining the bowel in those cases in which a sacral anus has to be formed. There is no doubt that it is a good thing to conduct any faecal discharge right away from the wound, as we do by means of Paul's tube and a few feet of soft rubber tubing after a colotomy. But Paul's tube being of glass might get broken if fixed in the sacral region, by the patient accidentally lying on it. I have had a reel made of wood just like a Mayo Robson's decalcified one, and this I fix in the end of the bowel just as we do a Paul's tube, and to the other end a long soft rubber tube is attached. To tie up the end of the bowel, and so prevent the escape of flatus, seems to me objectionable. Neither do I think it wise to tie the rectum before division in excising the growth. I believe it is important first to open the rectum and define from within the exact limit of the growth, for it may run up on the mucous membrane further than we can feel it outside, and we always ought to cut so as to leave a good margin of healthy tissue. I always aim at removing an inch of apparently healthy tissue above and below the growth. A rubber tube can be temporarily clamped round the bowel at the highest point of its exposure before opening it.

There is another matter I have not referred to, and that is the removal of extra-rectal masses of growth in the

sacral region. We not rarely find some enlarged glands, or if not glands, growth, in the fatty tissue outside the rectum, in the form of nodules, a tongue-like projection of the primary growth, and as a rule such growths are readily removable. One great advantage of the posterior method of operating is, I think, that you can the more readily detect and remove them, and I have done so in several cases. The upper attachment of such a nodule high up under the sacrum may be too high up to tie; I have left a long pair of artery forceps on it at the end of the operation. It would be very unwise to cut anything at such a level without clamping, or to take off the clamp when trying to tie, without a good prospect that you can get a ligature to hold well. A bleeding vessel, high up in the hollow of the sacrum may give a great deal of trouble.

What, then, does a study of these 34 cases show? I think it indicates (as does also the study of other published consecutive series of cases) that even including the cases of growth high up, the excision of which necessitates removal of a part of the sacrum and a free opening of the peritoneal cavity, the mortality is not very high. How many of the cases now free from recurrence will remain so I cannot of course say, but it seems possible—indeed probable—that there may never be any recurrence in several, and we know that life has been much prolonged in comfort in many.

CASE OF STRANGULATED FEMORAL HERNIA,

COMPLICATED BY PROLAPSE OF THE CAECUM AND
ADHESION OF THE VERMIFORM APPENDIX
TO THE SAC.

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This case is recorded because it presents features which must be very unusual.

History.

An elderly woman, aged 47, unmarried, was admitted to the Lockhart Hospital, Lanark, on a Sunday about 3 p.m., suffering from a right strangulated femoral hernia. The previous evening, about 6 p.m., she was seized with sudden sharp pain in the right groin, and a small swelling which previously existed there became tense, larger, and very painful; as the night advanced vomiting and hiccough set in. On the following morning her medical attendant saw her, and urged immediate operation, which she consented to. She stated that about three years ago she was seized with pain and swelling in the right groin. She did not consult her doctor at the time. The pain lasted several days and then gradually subsided, although the swelling still remained. From time to time, however, she had recrudescence attacks, and her friends state that she had not been well for years in consequence of such attacks.

State on Admission.

Temperature 99.4° F., pulse 115, thin and feeble. Hiccough was present, and shortly after admission she vomited about 6 oz. of dark-brown material, which had no distinctive odour. There was a hard, tense, and very painful swelling in the right groin, about the size of a walnut, slightly to the inner side of the middle of Poupart's ligament.

Operation.

An incision was made over the tumour and the sac exposed and opened. A knuckle of bowel came into view; it was plum-coloured, lustrous, but could neither be withdrawn nor reduced within the abdomen. The constricted area was so tight that the left forefinger could not be passed into it for fear of damaging the bowel, so a hernia director was passed down into the sac and beyond the constriction, which was freely divided. The bowel, a knuckle of small intestine, was drawn out, deemed to be viable, and returned within the abdomen. The sac still contained gut however, and on examination this was found to be the caecum lying in the mouth of the sac, and the appendix doubled upon itself and firmly adherent for about 2 in. from its free end to the inner wall of the sac near its fundus. The appendix was freed from its adhesions, amputated, and the caecum returned within the abdomen. The sac was closed; cut away, and the opening closed by a double layer of sutures and the skin wound sutured.

After-History.

The patient made an uninterrupted recovery and left hospital quite well several weeks later.

Description of Specimen.

The appendix measured about 3 in. in length, had a well-developed fatty mesentery, was quite patent, admitting an ordinary silver probe and contained faecal matter. It was considerably thickened and congested at its blind end from old inflammatory exudation and adhesions.

Owing to the immediate urgency of such cases, it was considered advisable to operate at once. The delay of an hour or two materially lessens the chances of recovery. The hernia of the caecum and appendix was probably of three years' duration. The finding of the appendix in the femoral canal adherent to the sac and the subacute exacerbations of pain at different intervals, point to attacks of appendicitis. The supervening acute strangulation was caused by a portion of small intestine finding its way into the sac and overriding the original hernia.

The patient states that she was bending down at the time when she was seized with pain, and it was probably at that moment that the small gut was forced into the sac beyond the appendix, and there tightly constricted.

ACUTE FAECAL IMPACTION IN THE RECTUM.

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THE term "acute" has been chosen in order to avoid confusion with those cases of faecal impaction which occur in individuals afflicted with chronic constipation, and which give rise to total or partial obstruction. The subject is perhaps worthy of comment, because all the cases here referred to have occurred in persons normally free from irregularity of the bowels, but in whom a temporary alteration in conditions—more especially in diet—has taken place. In their description of faecal impaction the textbooks confine attention almost entirely to those cases in which it occurs either in the caecum or colon, that is, above the rectum. The reason is, that they refer solely to those cases which are here excluded, namely, the sufferers from chronic constipation. On looking up the *Lancet* for the last twenty years, and the *BRITISH MEDICAL JOURNAL* for ten years, I can find only one recorded case of acute faecal impaction in the rectum. This is chronicled by Mr. E. C. Ibbotson,¹ and refers to a healthy boy, always regular in his bowels, who suddenly became unable to pass anything by the rectum. He was discovered to have a mass impacted in the rectum consisting of undigested tiger nuts, which he had eaten a day or two previously. The condition was relieved by glycerin enemata.

The cause of this condition has, in my experience, always been due to a diet leaving a glutinous residue, associated either with too great a loss of fluid from the tissues or too small an intake. In order to save more detailed explanation, I will describe one or two cases.

CASE I.—A male, aged 44, had severe haemorrhage from a duodenal ulcer. He was fed by the rectum for five days. This feeding consisted of three 9-oz. nutrient enemata and 1½ pints of saline in the twenty-four hours. For the next three days he was given 5 oz. of peptonized milk every two hours, and subsequently ordinary milk, jelly, custard, and soup, on successive days. During the first four days of mouth feeding the bowels acted with enemata. On the sixth day he complained of great discomfort. On attempting to defaecate there was great tenesmus, and nothing passed except a small amount of faeculent fluid. On examination the rectum was found to contain a large faecal accumulation of the consistence of putty. After being broken up by the finger this was easily evacuated by the aid of a soap enema. In this patient the body fluids were deficient, owing, in the first place, to the original haemorrhage, and subsequently to the too small amount of fluid given.

CASE II.—A male, aged 60, had an acute attack of diarrhoea and vomiting. He was kept in bed, and given milk diet and a bismuth mixture. Two days after the diarrhoea stopped, but during the continuance of the slop diet the patient complained of tenesmus accompanied by the frequent passage of small fluid motions. This continued for a week, at the end of which his doctor asked me to see the patient. He was then much depressed, complained that everything he took ran straight through him, and that the pain was almost unbearable when he passed those frequent fluid motions. There was fullness of the ischio-rectal fossae and redness around the anus. On rectal examination a huge mass of putty-like faeces was felt, quite as big as a fetal head. This had to be extracted piecemeal by means of the finger, after which he made an uninterrupted recovery.

CASE III.—A female, aged 40, had an acute attack of diarrhoea with pyrexia. When seen the condition had been present for three days. She was given milk diet and a mixture containing tr. opil. and deco. haematoxyl. etc. After two days the diarrhoea stopped, but remembering former cases of rectal impaction, I ordered a dose of the liquid extract of

caecara sagrada. It was then, however, too late, and the same evening the patient had acute pain in the rectum with violent tenesmus. Examination again disclosed a mass of putty-like consistence, but not of very great size, and this was easily evacuated after being broken up by the finger.

During the past two years I have seen the same condition in three women under treatment for haematemesis. In each case a description would be practically identical with the first case described, and will therefore be omitted. In the last two described cases there was a loss of fluid from the body, due to diarrhoea or vomiting, or both. In all of the cases the most prominent feature was tenesmus, whilst in four of them there was spurious diarrhoea, due to catarrh set up in the rectal mucous membrane by the presence of the faecal mass; the stools therefore consist of mucus discoloured by some small amount of faecal material. The tenesmus is due partly to mechanical stimulation by the impacted faeces and partly to the catarrhal inflammation of the mucous membrane, the one tending to aggravate the other so long as the condition remains unrelieved. The character of the impacted mass was just the same in all the six cases. Globular in shape and pale yellow in colour, it is made up of finely divided particles, with just enough moisture to give a doughy consistence. The formation of such a mass is easily explained when the conditions are considered. In the first place the residue which passes into the large intestine after the digestion or partial digestion of milk, custard, soup, and gelatinous substances, although small in quantity is made up of very finely divided particles. These have a greater tendency to cohesion than have more granular residues, and the small bulk of the substance fails to give a sufficient stimulus to the motive power of the gut.

These factors alone, however, are not enough to cause a faecal impaction, but must be supplemented by the over-extraction of water from the residue. All the cases here recorded were suffering from shortage of fluid arising either from too small an intake or too great an output, and therefore whatever fluid could be extracted from the residue in the large bowel would be taken up by the blood vessels and leave a cohesive mass.

The accumulation does not remain in the colon, as so commonly occurs in cases arising from chronic constipation, but passes on until checked at the anal sphincter, where further addition may be made to its bulk. This onward movement is accounted for by the muscular efficiency of the gut in these cases, as compared with its sluggishness in chronic constipation. The impaction at the sphincter and is purely mechanical. The diameter of the mass is too great to pass through a physiologically dilated sphincter. That the muscular power of the rectum is brought fully into play is emphasized by the painful tenesmus.

In order to avoid the occurrence of faecal impaction during the treatment of conditions requiring a milk diet, or a diet leaving a cohesive residue, it is of prime importance to give a sufficiency of water. A patient fed by the rectum probably does not retain and absorb enough fluid to meet his requirements. I always order 9-oz. feeds and half a pint of saline alternately every four hours, which are well retained. This represents a total of 57 oz. of fluid. The amount, however, is probably not enough, because the conditions which make rectal feeding necessary—for example, severe haematemesis or vomiting—also deplete the tissues of their requisite quantity of fluid. The demand of the tissues for more water is carried through the period of rectal feeding into the initial stages of feeding by the mouth, and it is during this period of slop diet that impaction takes place. The milk should, therefore, be diluted with water or lime water, or, better still, the rectal saline injections continued during the first three days of feeding by the mouth.

In cases of diarrhoea extra fluid should be given by the mouth, and is well taken in the form of lemonade. A safeguard is to give a small quantity of some saline aperient, which tends to prevent the absorption of too much fluid from the bowel. In such cases, whenever there is tenesmus associated with the passage of small quantities of faecal-stained mucus and pain on attempting to defaecate, it is imperative that an examination of the rectum be made.

In one of the above cases days of pain and anxiety would have been avoided had the rectum been examined as soon as the tenesmus arose. Breaking up the mass is a comparatively painless operation, and the immediate relief