CÆCOPLICATION.

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In a patient with pain in the right iliac fossa occurring in attacks or as a dull ache, with tenderness at or near McBurney's spot, irregularity of the bowels, and vague digestive disturbances, the diagnosis of chronic appendicitis is usually made. Appendicectomy, in the large majority of cases, leads to relief of the symptoms and great improvement in the patient's general condition.

There is, however, a residuum of cases where this operation fails to relieve the patient, the pain continuing as before. The explanation of this in some of these cases may be, that the appendicitis was only part of a general colitis; in others, that some other organ, as, for example, the ovary or tube, kidney or ureter, was at fault. These symptoms are sometimes loosely diagnosed as due to adhesions. While adhesions may account for pain in this region if they obstruct the passage of the intestinal contents, this explanation will not meet the whole case. Many patients, for example, after a severe suppurating appendicitis, in whom it is certain adhesions are abundant, are perfectly comfortable, while in other cases where the symptoms have been attributed to adhesions laparotomy often proves that none are present.

But even when all such sources of error are eliminated there is still a group of patients which present all the symptoms commonly ascribed to a chronic appendicitis, in spite of the fact that this organ has been removed. These cases, being far from uncommon, have recently attracted a good deal of attention and have been studied by a number of surgeons.

It is pretty generally recognised that in such cases we have to do with some affection of the cæcum, which is usually found to be voluminous and abnormally mobile. This condition has been called by a variety of names, such as cæcum mobile, typhlatony, typhlectasis, and voluminous cæcum—according to the observer's view of the precise cause of the symptoms—Wilms laying stress on the excessive mobility, Blake on the distension of this part of the bowel.

Anatomical Considerations.

The three longitudinal bands of the colon are continued on to the cæcum, where they meet at the attachment of the vermiform appendix. The innermost of these runs upwards to join the termination of the small intestine, the other two run in front and behind the cæcum respectively; between these bands the bowel wall is thrown into a series of

FIG. 1.—Schematic outlines of cæcum: A, in fetus; B, in adult.

irregular sacculations. The bowel wall between the anterior and posterior (or postero-external) band usually forms a single simple sacculation which, even when undistended, is larger than those in the other segments between the longitudinal bands.

The cæcum primitively formed a symmetrical cone at the commencement of the large bowel (Fig. 1 A), but with the growth of its right wall, especially of the sacculation between the anterior and posterior bands, this organ becomes asymmetrical, its morphological apex, the origin of the appendix, being displaced upwards to the left, the sacculation in question forming a sort of pouch at the

fundus of the cæcum (Fig. 1 B). This pouch tends to increase in size as life advances, and in many patients, especially in those whose symptoms we are considering, there is a tendency of the cæcum to prolapse into the pelvis, especially when it is distended. This prolapse and mobility constitute what is known as "cæcum mobile," and are sometimes so marked that an actual volvulus of the cæcum may occur. Many surgeons have come to the conclusion that this prolapse and mobility of the cæcum are the cause of the train of symptoms we are considering.

FIG. 2.—The operation of cæcoplication. The first row of sutures has been partially inserted.

The observed facts of physics show that when a hollow structure is distended by gas or fluid, the pressure is equally distributed over its walls, and therefore, with a given constant pressure, the larger this structure the greater the tension on the material of which it is composed. This means that an increase in the lumen of the bowel produces a greater strain on the bowel wall, stretching of its sensory nerves, and consequently pain. Although the strain on the bowel wall is equally distributed, the structure of the bowel is such that this is not equally well borne; the part of the bowel supported by the longitudinal bands being stronger and more resistant than the sacculations; and the large sacculation between the anterior and posterior bands, being the most unsupported, feels the strain most of all.

The cæcum seems to be the part of the large bowel which yields most readily to distension. This was well seen in a case recently operated on in King's College Hospital. The patient was suffering from acute intestinal obstruction, due to an annular carcinoma of the pelvic colon. The transverse colon was not distended, but the cæcum, which occupied the greater part of the pelvis, was enormously distended and so thinned that it ruptured when an attempt was made to bring it up into the abdominal wound.

That which occurs to such a marked extent in gross obstruction probably occurs also to a correspondingly lesser degree when the distension of the colon is merely caused by atony and constipation; and since, as we have seen, the weakest spot in the wall of the cæcum is the space between the anterior and posterior bands, it is just in this spot that we should expect to find the most marked effects. This argument is amply borne out by clinical observations.

Further, this distension of the cæcum, involving as it does the retention of its contents, will interfere with the drainage of the appendix and predispose to, if not actually produce, appendicitis. It is not unreasonable, therefore, to expect to find the two conditions existing together, and here again the clinical evidence corresponds.

Causation of Symptoms.

Wilms, of Basle, considers that the *mobility* is the most important factor. He considers that by its position the cæcum drags on its mesentery and indirectly upon the mesenterium of the appendix, causing pain by the

stretching of the nerves in these structures. On this hypothesis he treats such cases by "cæcopexy"—that is to say, fixation of the cæcum to the abdominal parietes. At first he recommended that this should be done by simple suture, but in his later paper⁷ he advises that the peritoneum of the iliac fossa should be stripped up to form a sort of pocket

FIG. 3.—The operation of cæcoplication. The first row of sutures has been inserted and the second row nearly completed.

into which the cæcum could be inserted and so held firmly in place. He reports good results from this operation.

Other surgeons, notably Blake¹ and Klemm,⁵ consider that the symptoms are due to the stretching of the bowel wall, and recommend that the size of the lumen should be diminished by "cæcoplication"—that is, by sewing together the anterior and posterior bands.

Cæcoplication.

Cæcoplication relieves the stretching of the nerve-fibres in the walls of the bowel by diminution of the size of the lumen of the bowel; hence, a rise of pressure within the colon has a smaller effect on its wall. Further, at the

FIG. 4.—Diagrammatic transverse section of the cæcum before and after plication. The dotted portion shows the region of the cæcum affected by the operation.

part where the bowel tends to bulge and become thinned a firm buttress of tissue is formed, well adapted to resist this strain, and protect therefore the contained nerve-fibres. Delbet has utilised the formation of this stiffish buttress of tissue to prevent the recurrence of intussusception of the cæcum.

We are inclined to accept Blake's view rather than that of Wilms, but it may be noticed that each operation fulfils in part the purpose of the other, cæcoplication drawing the fundus of the bowel up out of the pelvis and rendering it less mobile; while it is difficult to see how the bowel could be inserted into a retroperitoneal pocket without both reducing its lumen and supporting its wall. Oppel⁸ has also realised the value of this method and states that he plicates the wall of the cæcum as a routine accompaniment to appendicectomy wherever possible.

When, therefore, a case of chronic appendicitis exhibits a long lax cæcum it is a good plan to combine cæcoplication

with appendicectomy. This adds practically nothing to the risk of the operation, and the post-operative discomforts of the patient are, if anything, diminished, so that there need be no hesitation in performing it in any case.

Blake performs his operation by suturing the muscular bands with a continuous suture of fine silk, each stitch being drawn tight before the next stitch is passed, so that not only is the lumen of the bowel diminished, but also, owing to the puckering of the stitches, the fundus of the cæcum is drawn up.

We recommend that the operation should be done as follows:—

The suture is commenced where the stump of the appendix is invaginated, and we prefer a fine catgut to a silk stitch. The needle is passed through the adjacent edges of the anterior and posterior bands, which converge at this point, and these edges of the bands are then united by a continuous suture (Fig. 2) extending upwards for three or four inches towards the hepatic flexure. At first the sacculations of the colon tend to bulge between the stitches, but as the end of the suture line is approached this becomes less and less, until, as a rule, the whole lies quite smoothly. If there is any tendency of the bowel wall to bulge over the end of the suture line, this can be counteracted by picking up the bowel wall, between the bands, in the last stitch. The suture is then reversed and carried downwards towards its starting point, this time, however, picking up the edges of the bands which were originally farthest from each other, as shown in Fig. 3, and the suture is continued until the starting point is again reached. In this way the whole of the bowel wall between the bands is invaginated and held in place by union between the surfaces of the bands which have been sutured face to face. (This is shown in diagrammatic transverse section in Fig. 4.) The result of the operation is seen in Fig. 5, where the dotted line represents the outline of the bowel before the operation, and the continuous one the outline after; it will be seen that the bowel is drawn up, and that the backwater formed by the sacculations of the cæcum is obliterated.

Illustrative Cases.

Two cases have recently been operated upon which show the value of this operation, apart from appendicectomy.

The first case was a temporary naval rating who had

had his appendix removed in a civil hospital. He complained of great pain, occurring in attacks, in his right iliac fossa, and tenderness. X-ray photographs showed that the cæcum was distended, and as the scar of his previous operation was rather high up it was thought that perhaps the appendix stump had become adherent to the abdominal wall. Accordingly an operation was undertaken in the hope of freeing such adhesions as might be present. Everything, however, was found to be perfectly satisfactory; the appendix stump was cleanly healed, and there were no adhesions whatever. Cæcal plication was performed, as a result of which the patient made an absolutely perfect recovery. Even in this case the effect of suggestion and of a second operation might be invoked to explain the recovery, but the second case is even more conclusive.

A young woman was admitted to the Great Northern Central Hospital with the usual symptoms of chronic appendicitis; the appendix was removed, but with no relief

FIG. 5.—Diagram showing the results of cæcoplication. The dotted line represents the bowel before the operation, the unbroken line the condition which obtains on its completion.

of her symptoms; there were still pain and tenderness in the right iliac fossa. A radiogram was taken and showed a shadow in this region, which was diagnosed as having been produced by some calcareous glands in the mesentery. The abdomen was opened a second time, the calcareous glands were discovered. Although such glands very rarely give rise to symptoms, it was considered possible that they might be the cause of her pain and they were accordingly dissected out, fortunately with no injury to the blood-vessels of the mesentery. Still her pain persisted with considerable severity, so much so, indeed, as to completely incapacitate her. It was thought that this might be neurosis, and a Paquelin's cautery was applied over the tender area, again without result. During this time the patient was under very careful observation in hospital, and there was no doubt as to the genuineness of her sufferings. It seemed impossible that anything could have been overlooked after two laparotomies, but it seemed imperative to do something. On opening the abdomen for the third time the sites of the previous operations were found soundly healed without adhesions, but this time her cæcum was plicated and relief of her pain was prompt and complete.

Remarks.

These cases show the value of this operation and, we consider, demonstrate successfully the connexion between distension of the cæcum and chronic right iliac pain. It might be supposed that this procedure would add considerably to the post-operative discomfort, but this is not the case. We have made careful inquiries of the nurses who have been in charge of these cases during the first few days, and it appears that the patients are certainly no more uncomfortable, and, if anything, suffer less from post-operative flatulence.

The operation takes but a few minutes to perform, and as in cases in which it is necessary the colon is always fairly mobile we have found it possible in most cases to perform it through the ordinary appendix incision. Except where abdominal exploration is required we prefer a muscle-splitting operation on the lines of McBurney's incision. As originally practised this did not give very much room, but a modification of this is now used which gives greater accessibility without abandoning any of the excellent principles upon which it is based. In this the skin is incised transversely, the external oblique split in the direction of its fibres, which are well retracted, and the internal oblique and transversalis split up to the outer border of the rectus sheath, which in its turn is divided transversely, the rectus muscle being displaced inwards. By this incision excellent access can be obtained to the peritoneal cavity with very little injury to the abdominal wall.

Since being convinced of its value we have for some years past performed this operation frequently and freely as a complement to appendicectomy, whenever there was any sign of distensibility of the colon. Such good results are occasionally obtained from appendicectomy that it is a little difficult, apart from the cases which we have quoted, to be sure how much of the patient's improvement is due to the plication; but it does seem quite clear that after the operation chronic constipation is lessened, and even when the patient's bowels act infrequently abdominal discomfort is less and the symptoms of intestinal intoxication are markedly improved. For these reasons we consider that this operation deserves a wider application: that it adds practically nothing to the severity of the operation, and greatly increases the patient's chance of complete recovery.

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BRITISH RED CROSS SOCIETY.—The director of the City of London Branch of this society arranged recently for a recruiting week with the particular object of getting more members for working in auxiliary hospitals, and also for general service work. With the approval of the Bishop of London, the clergy were asked to appeal from their pulpits for members. At the central examinations held during the month of April, of 112 candidates 100 passed in first-aid, of 93 candidates 86 passed in home nursing, and of 19 candidates 17 passed in hygiene and sanitation.

The Red Cross in Mesopotamia.—Colonel J. S. Wardlaw Milne has proceeded to the United States on a lecture tour descriptive of the Red Cross in Mesopotamia.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

THE FUTURE OF THE MEDICAL PROFESSION UNDER A MINISTRY OF NATIONAL HEALTH.

A GENERAL meeting of the Fellows of the Royal Society of Medicine was held on June 5th, Sir RICKMAN GODLEE, the President, being in the chair, when the discussion on the Future of the Medical Profession under a Ministry of National Health was resumed.

Basic Principles.

Surgeon-General Sir BERTRAND DAWSON said that it had been suggested that debate should be confined to the question of the Ministry of Health. He disagreed with this because success depended not only on the formation of a Ministry of Health but upon what it did. It should voice the ideals and aspirations of the whole profession, and it must unite the profession; it must represent the whole of the profession, or it would fail, and it must unite the preventive and curative sides. When formed it would group together many existing services, but there would be two predominant partners, the Local Government Board and the Insurance Commission. These would represent very important bodies of opinion, but a Ministry based on them alone would not unite and lead the profession of medicine. Increasing numbers of medical men felt that the present system was outworn, but they were still seeking for the lines that reconstruction should follow. We should work out and seek agreement on the basic principles which should underline any plan of reconstruction, so that we could speak with authority when the opportunity should arrive. Curative medicine had ceased to be the work of the individual, and success was now only possible by team-work; therefore medicine must be coördinated. There was nothing new in the words "State Service." There were two meanings attached to it. By some it was regarded as a service in which every member was occupied the whole of his time and had a salary; to others it meant a part-time service, members of which would earn a greater proportion of income by salary than formerly. Every conception of State service involving whole-time salary would crush progress and be the death of all that was best in the profession, but we must not forget that the same thing occurred by heaping up the routine of daily life so that a man had no energy or soul to carry on, which was the danger of continuing along the present road. The basic principles he outlined were as follows:—

1. There must be an approximation between preventive and curative medicine both in teaching and treatment; there was no longer any solid ground for separating them. Who was to say in tuberculosis and typhoid where preventive ends and curative begins? The general practitioner would widen his outlook and his functions. It would be as much his duty to prevent as to cure disease; he would take a part in the health services of his district; he would be a leader of the people; he would have specialists to refer to, but he would be the court of first instance with wide discretion.

2. The general practitioner was at the centre of the success of any scheme, and we should do all that was possible to attract into the profession those of a high standard of intellect, training, and character.

To do this we must give each of them opportunities for the best work within his own sphere, suitable equipment, opportunities for observation, self-education and research, an adequate remuneration, and adequate repose. Consultants and specialists must be available to aid him, but they must never replace him so as to degrade him to the function of a clearing-house. There must be no importing of full-time people from without to run clinics. He must furnish the services and influence the opinion of his own district. The treatment of disease must in all classes of the community be increasingly institutional. This was necessary because more and more it was not individual work but team-work which was needed, and equipment was essential. What was true of preventive medicine to-day would be true of curative to-morrow. Such institutions were growing up all over the country. We now had pre-natal and maternity clinics, school clinics, tuberculosis and venereal dispensaries. The local doctors should staff the institutions of their districts; there the doctors would do a necessary proportion of their work to the advantage of the patients and of themselves. To fill these posts by outside whole-time, salaried officials would take the heart and interest out of the local men. Such posts could only be eligible to men who had passed a post-graduate course of study; local men would qualify and get