ILEO-COLIC INTUSSUSCEPTION IN A CHILD OF FOUR MONTHS: RESECTION: LATERAL ANASTOMOSIS.

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It is generally acknowledged that recovery after resection of an irreducible intussusception in infancy is rare. Below the age of 1 year successful cases may be considered almost as surgical curiosities. It is probable that the one described below is the youngest on record.

A discussion on intussusception, introduced by Mr. C. P. Childe in an able paper at the Children's Section of the Royal Society of Medicine in 1910, brought to light much interesting information on this point. Childe himself had resected on three occasions without success; Greig on three with a like result. At the Edinburgh Hospital for Children, out of 59 cases of intussusception, 15 were resected without a recovery. Similarly there was no successful case in children at the Glasgow Royal Infirmary in a large series of cases. Clubbe reported recovery in a child aged 11 months; Frank in one of 9 months.

Clogg¹ described 16 cases of acute intussusception in children; there were two resections, both ending fatally. In the discussion following the paper Douglas Drew mentioned two cases of recovery after resection at the Queen's Hospital—one at the age of 4 years and another under 2 years. Waterhouse (1907) resected with success in a child of 10 months at Charing Cross Hospital. Fairbank saved a child aged 7 months by resecting under spinal anaesthesia (1910). Quite recently² E. G. Gauntlett reported a case in which he resected successfully by Barker's method in a child of 10 months.

History.

The patient, James P., aged 4 months, was taken ill late on Sunday night, December 21st, 1913. He had a severe screaming attack and appeared to suffer from acute pain in the abdomen. The mother stated that until this date he had been free from any ailment and was a very healthy, well-nourished baby. Vomiting of greenish-yellow material occurred soon after the onset of pain. On the morning of December 22nd blood was noticed in the motion; later in the day the child was taken to a doctor and given a soothing mixture. In the evening it seemed better and vomiting ceased, but it would not take the breast and the bowels were not opened. On December 23rd vomiting recommenced and the general condition became much worse. On the afternoon of the 24th he was brought to the Queen's Hospital and admitted.

Condition on Admission.

The condition when seen by me at 4.30 p.m. was as follows: Well-nourished child; face pale, eyes sunken; temperature 100°, pulse 140. There was vomiting of foul-smelling, brownish material. He made no sound and lay quite passively on his back. Abdominal examination revealed a tumour in the left iliac region. On making a rectal examination the anus was found without muscular tone, and through the anterior rectal wall a soft mass could be felt. The finger on withdrawal was stained with watery sanguineous mucus. The child seemed too ill to resent rectal examination.

Operation.

Anaesthesia by open ether, administered by Mr. S. P. Rowlands. A longitudinal incision about 2½ in. in length was made just to the right of the umbilicus, and the abdominal cavity opened. Turbid serous fluid escaped. The intussusception was felt in the left iliac fossa. A portion was reduced intra-abdominally and the remaining mass brought outside. With considerable difficulty the intussusception was further reduced, mainly by expression from below, and the caecum and appendix appeared, making it clear that the invagination had commenced as the ileo-colic variety. All attempts at further reduction failed; the serous coat of the large bowel began to split in many places so that resection had to be decided upon. Two intestinal clamps were placed on the ileum above, and two on the colon below the invaginated bowel, and the intestine divided between. As rapidly as possible the mesentery was clamped with artery forceps and the intussusception removed; vessels were ligatured; the ends of the ileum and colon were tied off, and the stumps buried by purse-string sutures.

The small intestine at this stage was so distended that the serous coat ruptured in two places, and it was deemed advisable to tap the bowel to give relief to the pent-up contents. This was done through one of the peritoneal rents, and a considerable quantity of gas and fluid faeces escaped. The opening in the bowel was closed by two layers of sutures. Next intestinal clamps were applied to large and small intestine, and a lateral anastomosis performed in the usual manner. Finally, after washing the bowel with saline, the abdominal wound was closed with interrupted fish-bone sutures through all layers.

After-History.

There was considerable shock for twenty-four hours after the operation, but the child rallied under the energetic treatment of the house-surgeon, Mr. A. M. Aspinall. Subcutaneous saline was given, and pituitary extract every two hours. Profuse watery evacuations occurred about six hours after the operation, and there was considerable vomiting for a day. Convalescence was uneventful except that a small abscess developed in the left breast at the site of the subcutaneous saline injection. The child was discharged on January 15th, 1914.

Description of Parts Removed.

Examination of the parts removed (see figure) showed clearly that the intussusception was of the ileo-colic variety. Even after removal it was found impossible to unravel the intussusception.

Apparently the large bowel was removed as far as the middle of the transverse colon. On incising the intussusciptions, the intussusceptum (ileum) was found very oedematous and of a deep purplish colour. There were no enlarged glands in the mesentery.

According to the textbooks the ileo-colic variety of intussusception is very rare, 8 per cent. of all cases being the common figure quoted. There would appear to be considerable doubt as to whether this statement is correct. Clogg in his series of 16 cases had 4—that is, 25 per cent. Out of 10 cases I have operated upon in the last three years at the Queen's Hospital, all of which were successful, 4 were of the ileo-colic type—that is, 40 per cent.

A very noticeable feature in these ileo-colic intussusceptions is the watery nature of the rectal discharge, and it is possible that the diagnosis of the type of intussusception is often indicated in this manner. The discharge in the ileo-caecal variety, where the large bowel is mainly oedematous and congested, is usually markedly mucoid.

About three weeks after being discharged from hospital the child was brought to the out-patient department, and seen by Dr. E. Bellingham Smith, who found it suffering

A, Appendix; B, rod inserted into ileum; C, caecum.

from whooping-cough and bronchopneumonia. In spite of treatment death occurred a few days later from this chest trouble.

REFERENCES.

¹ *British Journal of Children's Diseases*, 1908. ² *Lancet*, February 14th, 1914.

FURTHER EXPERIENCES IN THE TREATMENT OF IMPERFECTLY DESCENDED TESTICLES.

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SOME months ago I was asked by a colleague how I treated cases of imperfectly descended testicles now, and appreciated clearly how impossible it was to give an answer sufficiently concise to be clear enough to satisfy the hearer. Going home I communed with the records of such cases which I had done in the last ten years—that is, since I published a full account of my opinions and practice on the subject. In the number of the *BRITISH MEDICAL JOURNAL* of June 4th, 1904, I published a paper on "The value of the imperfectly descended testicle, the advisability and value of the operations performed for its relief." Since then a period of ten years has elapsed, bringing much experience, which must of necessity have modified the conclusions arrived at in 1904. The advance of time has increased my interest in the subject, whilst the further experience has added to knowledge of the pathology of the condition and the results of treatment.

The imperfect descent of the testicle is in almost all cases a congenital malformation or deformity, due to some condition (or conditions) which, by depriving the gland of its full power of development, has arrested it in the course of its descent. The congenital malformation under consideration is practically always associated with arrested development of the tunica vaginalis, leaving a hernial sac (potential at least). In the associated deformity the tunica vaginalis remains in communication with the peritoneal cavity, a condition disposing to the development of a hernia, a total congenital hernial sac.

Fig. 1.—A, Congenital hernial sac. B, Acquired hernial sac. C, Infantile hydrocele. T, Testicle.

Upon being confronted with a patient with imperfect descent of the testicle it is often impossible to decide whether the condition of imperfect descent is temporary or permanent—that is to say, whether the testicle is merely belated in its descent or not. Various persons arrive at the same stage of development at very various times. So long as no hernia is present there need be no hurry in determining the answer to this question. Neither need there be any hurry if the malformation is unilateral.

This expectant attitude is terminated either by:

- (1) The recognition of a hernia accompanying the imperfect descent; or
- (2) The recognition that the imperfect descent is not mere tardiness.

Either of these two occurrences terminates the period of waiting, and indicates the need for active treatment by operation. As these factors are only two in number it is well to consider how and why they indicate the termination of the period of inactivity and initiate that of activity.

Hernia.

The presence of hernia in association with an imperfectly descended testicle indicates the fact that operation is necessary for its cure. Indeed, there is no other treatment for the hernia; a truss would press on the testicle or its vessels. Moreover, the non-separation of the tunica

vaginalis and peritoneum prevent the testicle from descending, even if it were capable of doing so. The hernial sac holds the gland up. Hence the cure of the accompanying hernial sac, by nature or art, will aid the testicular anomaly to be cured. In separating the sac from the cord great care must be exercised to avoid injury to the vessels, for such an injury is known to militate very greatly against the testicle subsequently having any physiological value.

The Persistence of the Deformity.

When the testicle has been imperfectly descended for sufficient time—say, until the patient is 7 years old—to show that the condition is a permanency and no temporary anomaly of a gland belated in its descent, it is necessary to operate. Such a proceeding may, in the main, be done in one of three ways:

1. The accompanying hernial sac may be divided and stripped of the cord, allowing the testicle to descend into the scrotum. Any but the mildest scrotal fixation is merely a prelude to failure, anatomical or physiological. Such an operation is called an orchidopexy or an orchidopexy.

2. The gland may be removed, as advocated by many. This line of treatment is specially indicated when the imperfect descent is unilateral. It is satisfactory in its after-results. The operation is an orchidectomy.

3. Especially when the condition is bilateral, the gland may be returned to the abdomen intraperitoneally. Any internal secretion which the gland may have is retained and will aid the patient to develop sexual characters, such as hair on face, male voice, male body, energy of mind and body. Such an operation is an orchidocoeleoplasty.

Which of the three operations shall be performed must to a great extent be decided by the surgeon at the operation. The great principle is, that should the testicle be unable to furnish an external secretion of its own power, no amount of surgical art can make it do so. Clinical experience has shown how very prone surgical art, in some form of orchidopexy, is to be followed by atrophy or fibrosis, the gland losing any power it might have possessed of developing any secretion, external or internal, which before the operation it might have been capable of doing. Hence it may be laid down that orchidopexies, except in unusual instances, rob the patient of something. Sufficient years have gone by for many workers and many patients to have proved this. As yet, surgeons have no great or extended experience of orchidopexy. But some—myself amongst them—can witness that it is sometimes followed by growth and descent of the gland; most often the descent is not as great as is normal, and very occasionally I have seen atrophy. But I can say that the more experienced a surgeon is with these cases the less likely he is to do an orchidopexy in an unsuitable case, and to incur a failure. Still, as surgeons can only work with the material supplied them, it is impossible to attain perfect success always. Imperfect success may be the greatest success that the provided material allows. In such doubtful cases an orchidocoeleoplasty is best. The results of this last operation are difficult to estimate. Though it has been done for about fifteen years, there is nothing much to be said, except:

(a) It has been urged on theoretical grounds that the returned testicles are prone to become malignant. This is not so.

(b) It has been urged that in the intra-abdominal position such common diseases as gonorrhoeal orchitis endanger life. This is not so.

(c) Apparently the intra-abdominal position abolishes any external secretion, but preserves and encourages the internal secretion. A very important point, as it is in the internal secretion that practically the whole value of the imperfectly descended testicle lies.

It is the operation more frequently done in these cases than any other. In my own work for the last ten years the percentage has been:

Orchidopexy ...	...	about 10 per cent.
Orchidocoeleoplasty ...	...	about 50 per cent.
Orchidectomy ...	...	40 per cent.

The infrequency of the performance of the operation of orchidopexy is the result of an extended experience of the results of that operation, not only when done by myself, but also when done by others. These may be very shortly