

Inversion of the appendix and caecum / by W.J. Greer.

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INVERSION OF THE APPENDIX AND CAECUM.

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BY

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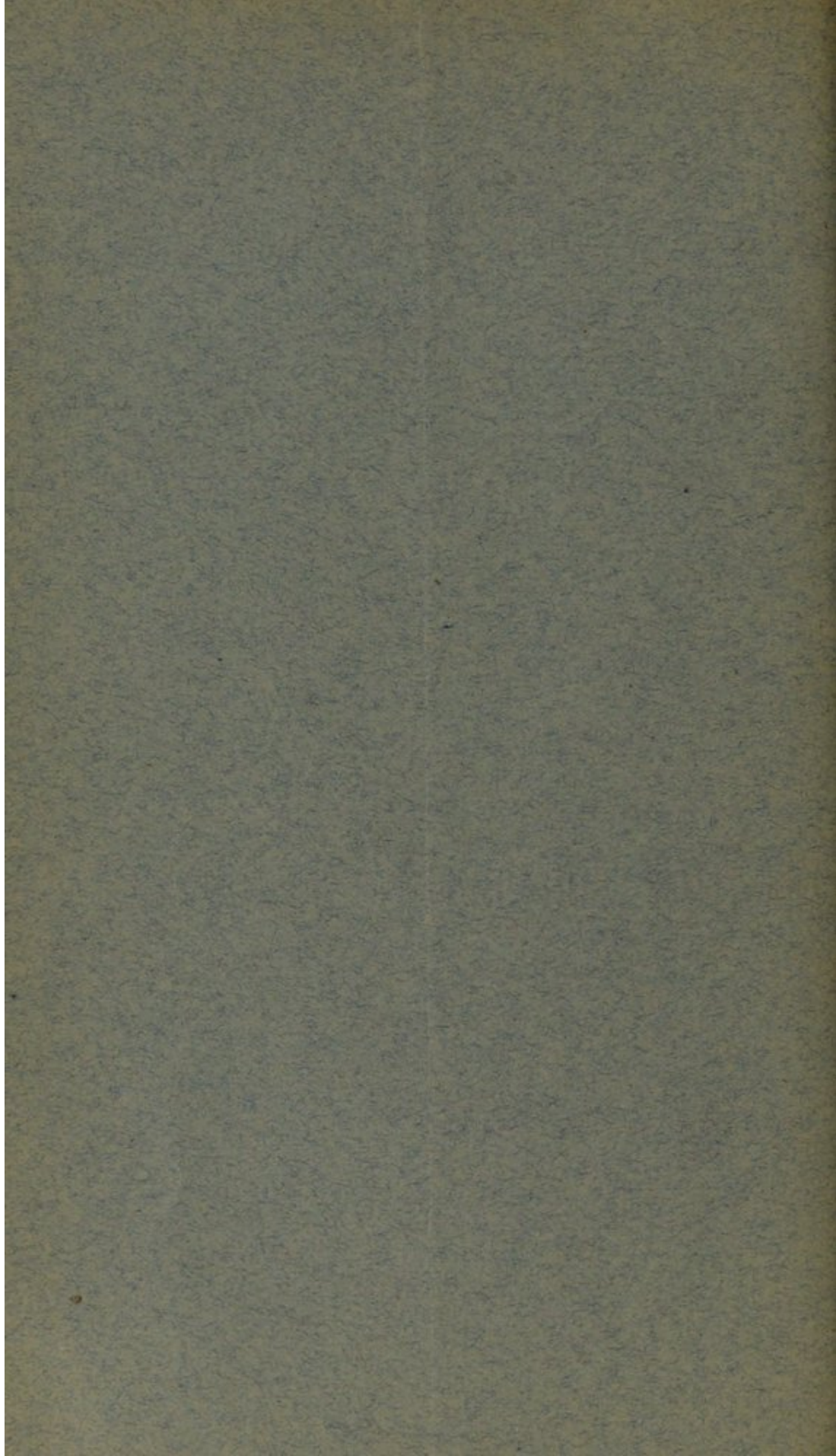


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INVERSION OF THE APPENDIX AND CAECUM.

THE number of recorded cases of partial or complete inversion of the appendix appears to be small, so the comparative uncommonness of the condition, as well as its interest, leads me to think that observations on an additional example are worthy of recital.

History.

A girl, aged 7, was admitted to the Newport and County Hospital under my care on February 29th, 1908, with a history of having had attacks of pain in the abdomen for five weeks previously. There was some diarrhoea at first, but lately the bowels had acted only in response to aperients. Blood had been passed by the rectum, and vomiting was frequent.

Condition on Admission.

The patient was obviously very seriously ill, the pulse small and rapid, the abdomen somewhat distended. Examination revealed a soft elongated tumour in the region of, and parallel to, the direction of the transverse colon; the tumour was freely movable, and manifestly tender to touch. A diagnosis of intussusception was ventured, and immediate coeliotomy determined on. A.C.E. was administered by Dr. R. McC. Linnell, and Dr. O. K. Wright assisted at the operation.

Operation.

A vertical incision about 10 cm. long was made through the middle of the right rectus; the small intestine was found to be dilated and the caecum was not visible. The portion of the ascending colon in view was widely and tightly distended and fixed to the posterior abdominal wall. The appearances were very confusing, as three portions of small gut seemed to enter the base of the mass; on pulling gently on these one was seen to come away out of the centre of the mass, and proved to be a loop of small intestine which had merely packed itself into the hollow—most likely very recently, as it was not in any way strangulated. This disposed of two of the entering portions of small intestine; the third was then defined as the termination of the ileum connected with an intussusceptum. Traction on this caused the tumour in the transverse colon to recede rapidly until about midway in the ascending colon, where it became immovable, and further reduction was impossible without serious tearing of the structures. A longitudinal incision was then made in the colon, the mass extracted, cut off at its neck, the disparity in the calibre of the tubes adjusted, fine silk sutures inserted, and the junction returned into the colon; a line of similar suture material was carried round the joint on the peritoneal aspect, the wound in the intussusciens united with a double row of sutures, a pint of hot saline poured into

the peritoneal cavity, the abdominal incision closed with through-and-through sutures of silkworm gut, a wick of gauze carried down to the vicinity of bowel repair and retained for forty-eight hours.

After-History.

The child made an excellent recovery, and was discharged well on March 26th, 1908. I have seen the patient recently, and she is in good health.



Fig. A.—Mucous surface of excised portion. 1, Colon; 2, ileocaecal valve; 3, inverted appendix.

Description of Part Removed.

An examination of the specimen shows it to be composed of caecum and colon 11 cm. in length, its width when cut vertically and spread out, 9 cm. The length of ileum removed is

5.5 cm. The appendix is 4 cm. long, 1 cm. of its base being inverted; the meso-appendix is thick and strong. The distance between the centres of the aperture of the appendix and ileo-caecal valve is 3 cm.

A careful scrutiny does not reveal any evidence of the ileum having passed through the ileo-caecal valve.

The accompanying illustrations will demonstrate the parts more clearly than any more detailed description.



Fig. B. — Peritoneal surface of excised portion. 1, Colon ileum; 3, tip of the appendix.

Fig. A shows the mucous surface; the figure 1 is on the colon; 2 on the ileo-caecal valve; 3 the inverted appendix.

Fig. B shows the peritoneal surface; the figure 1 is on the colon; 2 on the ileum; 3 on the apex of the appendix. The mass is swollen, oedematous, in parts almost gangrenous; the

ileo-caecal valve is not occluded by any growth or foreign body, the appendix is also patent, nor is there any concretion or polypus either in it or the ileum.

Kelly and Hurdon in their work on the *Vermiform Appendix* (1905) draw attention to the rarity of intussusception of the appendix, either alone or associated with other intussusceptions, and also to the fact that such an occurrence usually takes place in children, for in only one of the 19 collected histories was the patient an adult. These authors divide the cases into three groups:

1. Those in which the appendix is carried along incidentally with the intussusceptum.
2. Those in which the intussusceptum starts at the appendicular junction portion of the colon.
3. Those in which there is an inversion of the appendix either with or without inversion of gut.

The case now recorded falls, I think, into the third class; that is to say, the appendix was partially inverted, or to be more accurate, it was turned inside out at its base, and for some distance, and travelled thus up the ascending into the transverse colon, maintaining its position at the apex of an intussusceptum, which was composed of inverted caecum and ascending colon.

Battle and Corner also allude to the condition in some detail in their work on *The Surgery of the Diseases of the Appendix Vermiformis and their Complications* (1904), and Mr. E. M. Corner deals with the subject in an article in the *Annals of Surgery*, November, 1903, p 708.

In my case it is probable that the appendix became invaginated first, and that the caecum and ileo-caecal valve followed; the partial inversion of the appendix having excited the caecum to contract, the caput coli being then drawn in, blocking the ileo caecal valve, the colon eventually taking action, seizing the mass and carrying it forward, assisted by the peristalsis in the small intestine resulting from the more or less blocked valve. The fact that the appendix is in the van lends support to this theory, though there is no evidence as to the nature of the *vis a tergo* inciting the primary appendicular invagination; but it may be that the invagination of the caecum occurred first, and that vigorous contractions of the colon took the mass onward; this latter being swollen and unable to recede, the squeezing process may have produced the inversion of the appendix, complete turning inside out being prevented by its thick short mesentery. Again, it is also possible that the ileo-caecal valve may have entered the colon first and carried with it the base of the appendix (Gerlach's and Nanninga's folds), and the subsequent squeezing, moulding, and turning inside out process may have thrust the inverted appendix to the front.

This last might have happened, as it seems that the distance between the ileo-caecal and appendicular openings is perhaps less than usual (3 cm.), and consequently the appendix would be readily conveyed with the valve. It is not possible to express a decided opinion as to the extent to which the other factors—long mesentery,

irregular peristalsis, etc.—usually assigned as causative of the process of invagination contributed to the result. It will be clear that the caecum must have been freely movable, and its absence from the field at the early stages of the operation gave a semblance to a case of undescended caecum.

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