

EXCISION OF THE VERMIFORM APPENDIX BETWEEN THE  
ATTACKS IN A CASE OF CHRONIC APPENDICITIS;  
THE APPENDIX BEING FOUND IN AN ILEO-  
CÆCAL FOSSA.

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ON May 5, 1890, I saw the patient at Haverhill, Mass., in consultation with Drs. Clark and Young. She was a married woman, aged twenty-five, the mother of three children. She had always been subject to colics, and had been constipated all her life. Two years previously she had had an unusually severe colic with vomiting and pain, requiring morphia several times; from this time the attacks recurred every four to six weeks until October, when they began to come every three weeks, and morphia was usually required.

In February of this year she had a bad attack with a rise of temperature lasting a week; the pain began in the umbilicus and ran down to the right side. There were vomiting and chills, and a tumor appeared in the iliac region of the right side. Two weeks later there was another less severe attack with vomiting all day, and pain in the right side which required  $1\frac{1}{2}$  grains of morphia. From that time she had had pain in her right side almost continuously. On April 24th she had a sudden severe pain beginning in the umbilical region, and finally settling in the right iliac fossa. This attack lasted ten days. There was obstinate constipation, frequent vomiting, and a tumor in the right side. The temperature varied from  $100^{\circ}$  to  $103^{\circ}$ . Morphia was given freely for pain. It was during this attack that I first saw the patient, being called to operate May 4th. I was unable to go until the next day, when I found the patient so much improved in the twenty-four hours' delay that we decided that an immediate operation was unnecessary. I considered that an operation between the attacks was less dangerous than during an attack.

The patient caught eagerly at the idea of having the appendix removed between the attacks. We advised it for the following reasons: She had been practically disabled for a year, as any exertion or work was liable to bring on an attack; the attacks had become successively more severe; since February she had suffered constant pain and tenderness in the right side; the attacks had become so severe that the whole family were in a constant state of fear and anxiety; she had grown weak and nervous, and had lost flesh because she was unwilling to eat freely, thinking that food brought on the attacks.

On May 18th, she had another attack of pain, which was relieved by  $1\frac{1}{2}$  grains of morphia.

She soon came to Boston to be under my observation at a private hospital. On examination no tumor or resistance could be found in the right iliac fossa, only moderate tenderness. I soon found that any exertion on her part brought on pain and a slight rise of temperature, a short walk in the public garden nearly bringing on another attack.

The operation was done on May 28th. The incision was two inches long, and two fingers' breadth inside the anterior superior spine of the ilium. The cæcum presented; at first the appendix could not be seen, but after a careful search was found imbedded in adhesions, winding

around under the cæcum in a fold of the peritoneum, which Treves describes as an ileo-cæcal fossa. The adhesions were separated with the finger and scissors. They were so firm that the muscular coat of the appendix was stripped off the inner submucous coat for a distance of half an inch. The appendix was also torn partly across in separating it. The operation was very difficult; the work required being much the same as in digging out old cases of salpingitis, except that more delicacy and care was required. It lasted one and a half hours. The appendix was ligatured at its base and removed. It was three inches in length, and the size of a lead-pencil with a bulb at the distal end. The muscular coat was thickened and friable. The peritoneal coat consisted entirely of torn adhesions.

Dr. Whitney, pathologist, reported as follows:

"The ends were both thickened, and on microscopic examination showed an increase of the muscular and submucous coats. There was also evidence of chronic peritonitis in the fibrous thickenings and enlarged

FIG. 1.



Chronic appendicitis.

bloodvessels. The mucous membrane was normal, and there was no evidence of round-cell infiltration. Chronic Appendicitis."

The patient made a good recovery. The temperature did not rise above 100°, and the wound healed by first intention.

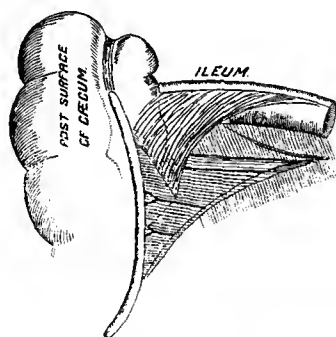
It is now seven months since the operation. The patient has been entirely free from the attacks, and has gained 20 or 30 pounds in weight. She feels, and is, perfectly well.

Aside from the fact that there have been only a few cases reported of excision of the appendix between the attacks, the point of peculiar interest in this case is that the appendix was found firmly adherent in an ileo-cæcal fossa.

As these fossæ are not mentioned in the standard Anatomies of the day, and as this case suggests their importance in appendicitis, I will quote Treves's description as given in his Hunterian Lectures in 1885,

published in the *British Medical Journal* of that year: "If the cæcum be turned upward so as to expose its posterior surface as it lies *in situ* (see Fig. 2), and if the appendix be drawn down so as to put its mesentery on the stretch, a peculiar fold will be found to join the mesentery. This fold, which may be of considerable dimensions, arises from that border of the ileum that is most remote from the insertion of its mesentery. It then passes over the ileo-cæcal junction on its inferior aspect; is adherent to the cæcum, and finally joins the surface of the mesentery of the appendix." "For convenience of description, and until some name is devised, it may be called the bloodless fold. Between this fold and the appendix mesentery there is a fossa that is almost constant and is often very capacious. It will commonly lodge two fingers as far as the first joints. It opens outward, its apex is at the ileo-cæcal junction, and it is bounded on one side by the small intestine and on the other by the caput coli. To this conspicuous pouch may be applied the name of the *inferior ileo-cæcal fossa*."

FIG. 2.



Ileo-cæcal fossa. (TREVES.)

According to the same authority there are other fossæ in this region less constant than the one described. They are collectively known as the ileo-cæcal fossæ. They have attracted the attention of certain anatomists, and notably of Luschka, Hartmann, Freitz, and Waldeyer.

Whether the incarceration of the appendix in these fossæ will be found to be a cause of appendicitis I cannot say. It is certainly very suggestive that this patient has had colics all her life, which seemed to her similar to the later and more severe attacks.

These fossæ surely deserve attention in connection with the operation; it was only owing to the fortunate chance of having seen an appendix in an ileo-cæcal fossa in a dissecting-room case ten days before the operation that I was prepared to understand the situation in this case.

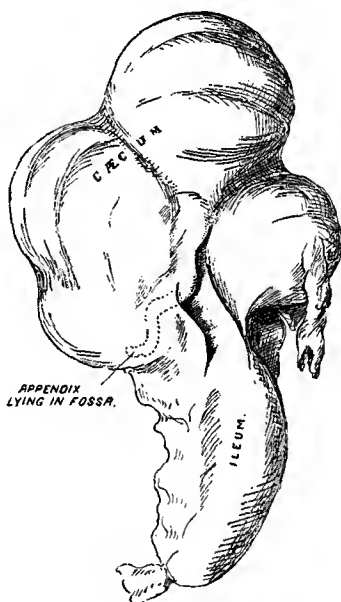
By courtesy of Dr. Whitney I have examined forty normal cases in the pathological laboratory of the Harvard Medical School, and have

found in fifteen of these cases ileo-cæcal fossæ so placed, and of sufficient depth, as to make a convenient resting-place for the appendix.

My friend Dr. Mixer found the above mentioned dissecting-room case—where the appendix was actually lying in an ileo-cæcal fossa differing only slightly from the one described by Treves. (See Fig. 3). In this case the appendix was with some slight difficulty removed from its resting-place.

The possibility of intestine being caught in an ileo-cæcal fossa has been suggested, but the case here reported is the first instance, so far as I know, where an operator has found the appendix there.

FIG. 3.



Appendix lying in peritoneal fold.

In such a case as this, where the appendix is difficult to find, I have found it a most useful rule in operating to trace the first longitudinal band of the colon that comes into view, down over the cæcum; it will surely lead to the appendix, as all these bands end in the appendix.

It is too early to try to lay down the indications for the removal of the appendix between the attacks, but as such recurring attacks are not usually dangerous, it is easy to foresee that the operation will be indicated principally in cases of invalidism. What degree of invalidism will call for the operation should depend largely on the mortality of the operator (unskilled operators should never attempt it), and on the circumstances of the patient, as poor people cannot afford to remain chronic

invalids. Each case will require careful consideration and good judgment. The results so far have been brilliant.

The most formidable objection which has been raised against the operation is that in old chronic cases the appendix will often be found so firmly adherent to the surrounding parts as to make its removal impossible or very dangerous. From my experience I believe that the technique of this operation will easily be mastered; that the difficulties are much the same as in old cases of salpingitis, and that the same good results will be obtained, so that appendices which seem hopelessly snarled will be easily and safely removed. Certainly the case here reported is an example of how little constitutional disturbance follows an extensive dissection of a very adherent appendix.

## THE CHEMISTRY AND CLINICAL VALUE OF STERILIZED MILK.

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### I.

#### PROTEIDS OF COWS' MILK. BY ALBERT R. LEEDS.

##### INTRODUCTORY.

A GREAT deal has been written of late years upon cows' milk as a culture medium of bacteria, and the dangers of transmission of infection by means of milk derived from diseased animals, or improperly handled or exposed, have been largely dwelt upon. As a consequence, sterilization has been looked upon as a necessity, if infants artificially nourished are to be protected from these perils. But the milk after sterilization has been found to be in some wise so changed that of late a reaction has set in, and the question has arisen whether or not the desired immunity could not be better attained by some other means.

The present research is in part directed to a statement of the changes effected by sterilization which are revealed by analysis, and in part to showing that the clinical evidence points in the same direction as that derived from chemical investigation. Both go to show the importance of an advance and improvement, and indicate the direction in which this improvement lies. It is in getting rid of the bacteria without injuriously affecting the digestibility of the milk. Enough has been done to