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ORIGINAL COMMUNICATIONS.

OBSERVATIONS ON SOME OF THE COMPLICATIONS OF HERNIA; AND ON OBSTRUCTION OF THE INTESTINE WITHIN THE ABDOMEN.

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(Concluded from page 447 of May Number, 1851.)

PART SECOND.

OBSTRUCTION OF THE INTESTINE WITHIN THE ABDOMEN.

After the able papers upon Internal Intestinal Obstruction, published by Dr. Crisp and Mr. Phillips, and the interesting cases recorded by Dr. G. Bird, Mr. Hilton, and Mr. Druitt, it may seem presumptuous in me again to advert to the subject. As, however, the basis of this paper was written many years ago; as in many points the cases which have come under my care tend to confirm what Mr. Phillips has advanced; and as some points which I shall consider have not been so fully alluded to, either by him or the other authors whom I have quoted, I have determined to submit the following paper to the notice of the profession, in the hope that it will not be found entirely devoid of interest.

The most perfect classification of these maladies, with which I am acquainted, is that of Rokitansky. He has divided internal strangulations into three species:

1st. The narrowing or complete obliteration of the canal of a piece of intestine, resulting from pressure exerted upon it at one or more spots, by a larger or smaller portion of intestine or its mesentery, so as to compress it against the opposite side of the abdomen.

2nd. The rotatory species; which consists of the rotation of one part round the axis formed by some other part. In this class he i-
includes three sub-species: (a) rotation of a portion of intestine round its own axis; (b) round an axis formed of mesentery; (c) where a portion of intestine forms an axis, round which another large portion with its mesentery turns, so as to touch the periphery of the axis at every point.

3rd. That caused by some peculiar arrangement of parts, the results of original malformation or of previous disease.

These strangulations of the intestines, he observes, occur in circular or fissured spaces formed (a) by fibres or bands of cellular membrane running from one organ to another; (b) by adhesions of the free end of the vermiform appendix to some part of the walls of the abdomen, or to a portion of intestine or mesentery; (c) by adherent diverticula; (d) by the adhesion of two convolutions at a single point; (e) by perforations in the mesentery, or by fissures in an omentum altered by disease.

It is not, however, my intention to enter into a consideration of all the conditions which may cause internal intestinal obstruction, but to confine my observations to the following points:—

I. Obstruction from contraction of the intestine.
II. Obstruction from membranous bands.
III. Obstruction from the calibre of the intestine being girt round by the omentum or the mesentery, one portion of intestine being twisted upon another.
IV. Obstruction from a combination of the two last-mentioned causes; a twisting of the bowel, and preternatural adhesion by membranous bands.

I purpose to consider the subject under the following heads:—

1. The appearances met with on dissection. 2. The Causes. 3. The Symptoms. 4. The Cause of Death. 5. The Prognosis. 6. The Diagnosis. 7. The Treatment.

MORBID APPEARANCES.

I. CONTRACTION OF THE COATS OF THE INTESTINE. Contraction is not an unfrequent morbid condition of serous membranes. It is frequently seen in the pleura, especially where vomicae, situated near the exterior of the lung, have discharged themselves and cicatrized. It is occasionally seen in the spleen, and very often in the peritoneal coat of the bowels. I have also remarked it in those who have died a few days after the operation for strangulated hernia; in Case xii, the very great contraction observable in the ileum was apparently owing solely to this cause. The following is an abstract of the dissection in that case. The jejunum and upper part of the ileum were enormously distended, partly by yellow liquid faecal matter, but principally by flatus; a stricture (Fig. 1), formed apparently by contraction of the peritoneal coat, without any thickening, existed in the ileum, near its middle: the calibre of the gut in this situation would not admit a large pea. The lower half

2 Although, for the facility of description, I have arranged my remarks in the form of a general essay, I am desirous of stating, that the inferences I have drawn have been derived solely from the cases appended to the paper, and those to which I have from time to time alluded; and I wish them to be applied generally only in so far as more extended experience shall justify this application.
of this intestine was exceedingly contracted. The convolutions of the intestines were united together by bands of lymph; they were also adherent to the abdominal parietes, and were in many places approaching a sphecelated condition; for, on gently separating the unnatural adhesions, an opening was made into the gut. There was also an unnatural contraction of the muscular fibres in the centre of the transverse colon, but, by pressure, this part could be made as capacious as others. A question arises here,—did this contraction, met with in the ileum, exist at the time the patient was first attacked by peritonitis; or did it occur as a sequel to that affection? I incline, myself, rather to the first supposition, as the bowels were naturally costive, and as there was no thickening of the coats of the intestine, nor any old adhesions. I am the more strengthened in this view by a case which I have examined lately; in which a lady, dying at last rather suddenly from fright, after suffering long from phthisis and interlobular emphysema, was found to have the great omentum firmly united to the left side of the parietes of the abdomen; the greater part of the transverse colon was very much contracted throughout its whole length, and the descending colon was contracted precisely in the way in which the ileum was contracted in this case. There was no alteration in the tissue, and no apparent impediment to the passage of the motions; for although she had latterly been of a very costive habit, she had never had any obstinate constipation, and there was nothing like accumulation above the constricted part.

II. Obstruction FROM Membranous Bands. Of all the causes of internal obstruction, the formation of false membrane girtino some part of the bowel, or preternaturally fixing it to the abdominal parietes, appears the most frequent. This is no doubt the result of inflammation existing some time previously. In Case XIII it will be perceived, that a considerable portion of the ileum towards its lower part, and not far from its termination, was surrounded by two false membranes, one of them of extreme tenuity, not much thicker than a thread, and in parts of a black colour. (Figs. 2 and 3.) This completely surrounded the gut, and very considerably diminished its area here. In Case XIV also, it is stated, that some of the folds of the ileum were agglutinated together, and tightly bound down to the peritoneum, covering the right iliac fossa, by strong and apparently long-standing membranous bands. In most cases, the adhesions seem to have been of old standing, especially

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1 The wood-cuts which illustrate this paper have been executed by Dr. West-macott of King's College, from preparations in my possession, with the exception of Fig. 1, which is sketched from memory, and Figs. 2 and 3, taken from drawings by Mr. Hurst, from a preparation in Guy's Hospital Museum, through the kind permission of the Treasurer.
in those appended to this paper, and in Mr. Hilton's case; but in
that detailed by Mr. Druitt, the inflammatory action was of more
recent origin. It appears also, that partial is more likely to produce
obstruction than general peritonitis; for where all the convolutions
are glued together by false bands, although in some a tendency
constipation may ensue, in many cases no apparent interruption to the
passage through the canal takes place. I remember a remarkable

Fig. 2. Portion of ileum surrounded by membranous bands.

Fig. 3. Opposite view of the same preparation.

2 Ibid., vol. xxxi, p. 245.
instance of this in a strong, healthy-looking old man, who underwent the operation of lithotomy, which proved fatal, and in whom all the convolutions were firmly bound together by strong old adhesions, but in whom no inconvenience had ever been complained of with respect to the bowels; and in Fig. 4, which represents general adhesions of the convolutions to each other, the result of strumous inflammation, leading to tubercular as well as albumino-fibrinous deposit, there was no constipation; and towards the close of life *diarrhea* supervened.

![Fig. 4. All the intestinal convolutions agglutinated together by strumous peritonitis.](image)

The *situation* of these bands is an important point for consideration. In all the cases which I have seen, and in most of those of which I have read, the bands have been around the ileum or jejunum, especially the former; but no doubt they may occur elsewhere. It is natural to suppose that they would be more likely to be attended with urgent symptoms when embracing the small than the larger intestines; and the higher the obstruction, the greater (*ceteris paribus*) would be the distress produced, and the more imminent the danger; but experience does not altogether bear out that view.¹

### III. Mesenteric and Omental Obstruction

It occasionally happens that the bowel is twisted upon itself; and in that case, one portion of intestine is girt round by the mesentery of another, and the confusion of such folding is sometimes very great. No well-marked, uncomplicated case of this kind has occurred to myself: but in Case **XV**, for which I am indebted to a medical friend, it was found, after death, that a portion of omentum had grown around a knuckle of small intestine (a portion of the ileum), and had occasioned strangulation; so that when the omentum was turned back, the intestine was dragged

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¹ Vide Symptoms, p. 604.
back with it; and in the Medical Gazette, three very interesting cases, of what he calls dislocation of the sigmoid flexure of the colon, are mentioned by Mr. Mackenzie. In whatever manner, he observes, the displacement is effected, the result is remarkably uniform; the intestine is thrown from its natural situation towards the centre of the abdomen, and receives a twist at its termination in the rectum, which causes complete obstruction of the passage; the small intestines get coiled round it in such a manner as to strangulate the gut by the free margin of the mesentery. In Case 1, on opening the abdomen, an enormous viscus, of a dark colour, in a state of extreme distension, occupying the centre of the abdomen, half buried among the small intestines, which were also distended with gas, came into view. This proved to be the sigmoid flexure of the colon; at its termination in the rectum, it was found to have received a twist upon itself, giving rise to complete obstruction. The transverse arch of the colon was pressed towards the right side; all the intestines were more or less inflamed, except the rectum and twisted portion; the sigmoid flexure was in a gangrenous state, and on being opened, was found filled with cranberries and bloody semies. In Case 11, there were the same morbid appearances as in the former, except that the dislocated intestine occupied the right side, concealing from view the descending colon; and, instead of being twisted, it was tightly embraced by a turn and a half of the mesentery, by the free margin of which it was completely strangulated. A loop of small intestines had got entangled, and was also strangulated and gangrenous; the mesocolon lay in the shape of a long appendix amongst the intestines, quite saturated with extravasated blood. In Case 111, the morbid appearances were precisely as in Case 11, the sigmoid flexure being thrown to the centre of the abdomen, and at its termination in the rectum, being strangulated by a turn of the mesentery. The small intestines were found in a state of extreme distension, equalling the normal size of the colon, and highly inflamed, whilst the colon was found of normal size; the small intestines were perfectly empty, even of gas, and quite free from inflammation.1

IV. Obstruction from the Mesentery and Membranous Bands. It occasionally happens, that both of the causes last-mentioned above, occur in the same individual, and the difficulty and danger of the case are thereby increased. In Case xvi (Fig. 5), such a complication will be seen. The lower part of the ileum, towards its termination in the colon, was in a complete state of strangulation from bands and mesentery; the portion incarcerated consisted of two convolutions united together by bands of lymph, and that portion of the mesentery by which the principal stricture was formed, although very tightly embracing the bowel, was softened, and had in part given way.

Effects of Obstruction. Several ill consequences follow as the effects of stricture of the intestine. It may be so tight as to produce, not only congestion of all the tunics of the bowel some way above the constricted part, but softening, ulceration, and perforation,—hypertrophy, and distension of the bowel above the stricture—atrophy and contraction of all the portion below it—and partial or general peritonitis.

Congestion of the Bowel above the Stricture. In only two of the cases (xiv and xvi) is there a distinct mention of congestion of the coats of the bowel above the stricture; but it is probable it might have existed in the others in so slight a degree as to escape notice. This appearance will much depend upon the tightness and duration of the obstruction, and the nature of the treatment to which the patient has been subjected.

Fig. 5. Convolutions of the bowel strictured by false membrane and mesentery. A, the part above dilated; B, the band of mesentery forming the stricture.

Softening of the Mucous Membrane will be noticed in some of the cases appended to the paper; in one also, the mucous membrane is said to be ulcerated; but in none of the cases does perforation appear to have happened before death. No doubt it may occur from this as it does from other causes, but it is by no means usual; for the inflammation set up around the diseased part produces adhesion to the surrounding textures, and this effectually prevents it. It is more common, therefore, for all the parts to be softened, so as upon the least touch to give way, as happened in Case 1, alluded to in the preceding page.
INTERNAL INTESTINAL OBSTRUCTION.

Hypertrophy and Distension of the Bowel above the Stricture. The same evidences of obstruction as are seen in other organs are seen in

the intestinal canal, not, however, to the same extent as in the heart and bladder when obstruction occurs. In the first instance, an effort is made to overcome the obstruction, and by the continuance of that, there is an increase in the muscular power of the bowel, or genuine hypertrophy, as is recorded in Case xvi, illustrated by Figs. 5, 6, and 7. Hypertrophy failing to overcome the obstruction, a great augmentation of calibre occurs, which is owing partly to the accumulation of the contents interrupted in their passage, and partly to the decomposition of them, by which much gas is generated. Sometimes the distension is very great, as in Case xii, where the ileum is described as measuring nine inches in circumference. I have no preparation of this particular condition; but in Figs. 7 and 9, copies of preparations of imperforate anus, the same thing is very well illustrated.

Contraction and Paleness of the Bowel below the Stricture. There is a great contrast between that portion which is above and that below the stricture; the latter is generally pale, shrivelled, and smaller than natural, especially where the contraction has existed any time. In Case xiv it is stated, that this part was only one-fourth the size of that above it.

Fig. 8. Hypertrophy of the muscular coat of the bowel, to such an extent as to allow of its being torn into two layers.

Fig. 7. Imperforate anus, with rectum distended above it.
Peritonitis may be general, or confined to some part; the latter appears to be most common, and sometimes it does not take place at all, as in Case xv, where it is mentioned that there was neither fluid nor any other inflammatory product. In most, it will be seen, that the effusion of fibrin was partial, and in only two of the cases was there any fluid found in the abdomen; in Case xvi there were two ounces only of serum; and in Case xiii, eight ounces of dark brown fluid, without lymph, were found in the general cavity. Sometimes, however, the peritonitis goes on to the purulent stage, the matter being occasionally confined in a circumscribed cavity, as in Case i, where it is recorded, that there was a large collection of pus in the right iliac fossa, which was contained in a distinct cyst of false membrane, formed by the agglutination of the lower part of the ileum, the cæcum, and the peritoneum, covering the right transversalis and iliaceus internus muscles.
INTERNAL INTESTINAL OBSTRUCTION.

CAUSES.

Although contraction of the bowel and formation of bands, etc., are the real cause of obstruction, they are not the sole cause; for in many cases there is reason to believe that they had been in existence some time before the serious interruption to the canal took place; other causes must therefore exist to bring them into operation, and these are, for the most part, sudden and violent exercise, and errors in the quantity or quality of the food. Thus, in Case xiv, the symptoms showed themselves after lifting a weight; in Case xvi, while the man, a sawyer, was at his work as usual; in another case, soon after exposure to cold when dining out; and in Mr. Mackenzie’s cases, the imprudent use of raw, indigestible substances, as cranberries, turnips, cabbages, etc., was suspected as the cause.

Age. Obstruction of the bowel from internal causes may occur at any age; yet in the cases which have come under my notice, and in others to which I have referred, the middle period of life has been that in which it was most frequently seen. Thus, two cases occurred at 20 years of age; one at 34; three at 40; one at 55; and one at 60.

SYMPTOMS.

I shall, in the next place, consider the symptoms to which the morbid conditions described give rise. This is a task both difficult and important; difficult, because it will be seen that they vary considerably in different cases; and important, because, unless the symptoms are clearly made out, the diagnosis can hardly be correct; and without a correct diagnosis, anything like operative interference can scarcely be undertaken,—certainly not early enough to give it a fair chance of success. In considering this branch of the subject, two things are to be borne in mind: first, the symptoms which show themselves; and, secondly, the order in which they appear; the latter, I think, is as important as the former.

A very good summary of the symptoms is given by Mr. B. Cooper, in his valuable lectures, published in the Medical Gazette;1 to which, as they are well known, I shall content myself with alluding. As a closer examination of the symptoms may be attended with advantage, I will enter more into detail. The symptoms may be divided into two classes—the premonitory, and the actual.

PREMONITORY SYMPTOMS. In some of the cases, nothing particular occurred to call for notice till the time the attack actually began; but in others, all the life through, there was a tendency to constipation; and in Dr. G. Bird’s and Mr. Hilton’s case, the patient, although a youth, seldom got any relief at all without the aid of purgatives. Others had symptoms from time to time of ordinary dyspepsia; others, pains of a colicky nature; and others, again, had had an attack of decided enteritis, which had been actively treated; others had been the subjects of genuine peritonitis; and others, again, had been subject to a complication of abdominal maladies, as in Mr. Hilton’s case, where, in addition to habitual constipation, there had been in early life a tendency to, if not actual, mesenteric disease.

ACTUAL SYMPTOMS. In describing the symptoms which mark internal intestinal obstruction, I will enumerate them in the order in which, I believe, they most frequently occur.

Pain. This varies in kind, degree, and extent, in different cases. In some instances, it is described as a dull, heavy sensation; in some, as in Case xv, there is no pain at all; in others, it is universal; in some it appears to come and go, and is relieved by pressure, after the manner of colic; at others, it is constant and severe, as where the inflammation of the peritoneum is most active. In some instances, there is pain increased on pressure; but in others, that circumstance has not occurred. In some cases, there is a general uneasiness rather than pain; in other cases, the sensation is that of dragging; and in some (a circumstance specially to be noted), there is pain in a situation away from the obstructed part; and again, there is pain both there and elsewhere.

Constipation. In almost every case there is constipation: but constipation is very often unattended to, as there is great difference in different persons in respect to the frequency with which the bowels are opened. This has been very well illustrated by Dr. Heberden, who says: "Hominis frequentiä alvum exonerandi plurimum inter se differunt. Alteri semel tantum singulis mensibus venter solutus est; alteri duodecies quotidié descendit per triginta annos, uti ipse mihi narravit, et dein septies quotidie per septem annos". In these cases, however, the constipation cannot generally be overcome. It is true that by means of injection a small quantity of fecal matter is brought away, but this is nothing more than sufficient to tinge the injection; now and then a large portion of hardened fecal matter, which had been long resident in the large intestines, escapes, and then there is no other action; and occasionally, as in Case xii, the bowels have been freely opened, and yet there is a fatal result.

Vomiting has occurred in every case. In the commencement, it is merely the return of matters taken; but as the disease advances, it is said to put on a stercoraceous character. It is generally, however, if not always, the matter resident in the small intestines which passes from the mouth; as, in most of the cases, the obstruction has been in the small intestines, which would as effectually prevent the passage of the contents of the larger bowels upwards, as it does the removal of the contents of the upper part of the canal downwards. In one remarkable instance (Case xv), the matter vomited was of a very fluid nature, and amounted in a very short time to the extraordinary quantity of ten pints.

Abdominal Distension has occurred to a greater or less extent in almost all the cases. In some it sets in early and proceeds rapidly; in others, even when the disease has lasted some time, there is scarcely any distension. Thus, in Mr. Hilton's case, it is stated, so late as the eighth day, "abdomen flat and collapsed".

Hiccup. There is great uncertainty about this symptom; it does not occur in every case, nor, indeed, in the majority; for out of the total number to which reference has been made, it is only mentioned in three of the cases.

1 Heberden, Commentarii de Morbis, p. 14.
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The Countenance was natural in all of the cases at first, and remained so throughout in some; in one it was florid; in others, however, distress and anxiety were depicted; and in one of Mr. Mackenzie’s cases, though the disease was seated in the large intestines, the face was reported to be hippocratian and expressive of intense suffering, and here the amount of inflammation was not great.

**Pulse.** This varies considerably in different cases, and at different periods of the malady. It is generally slow at first, quickens when inflammation sets in, and becomes excessively rapid as irritation advances; in some, it is described as about 68; in others, between 80 and 90; and in others, again, it was as high as 120. In character, also, the pulse varied considerably; in some cases, it was described as natural; in others, as full and wiry; and in others, as exceedingly feeble. These variations have seemed to bear some ratio to the extent of obstruction,—the length of time the disease has lasted,—the amount of inflammation present,—the original constitutional powers of the individual,—and the impression which the disease has made upon the system generally.

**Tongue.** There has been noticed great variety in the appearance of the tongue. In some cases, it remained clean, even to the last; in others, it was white; in others, brown; in others, red; in others again, it was very dry; and in one case, and one case only, was there noticed an aphthous state of the tongue and mouth.

**Skin.** In some cases the skin was cool; in others, hot; in some, dry; in others, covered with warm perspiration; in others, the surface was bedewed with a clammy sweat.

**Urine.** It is worthy of remark, that, in some of the cases, there was a copious secretion of urine, showing that a part of the function which should be carried on by the bowels, was, in a measure, compensated for by the kidneys, when the bowels were no longer capable of acting. In none of the cases was an analysis of the urine made, but nothing of an abnormal nature appears to have called for attention. In one case there was dysuria; but that arose from a mechanical cause,—a stricture at the bulb of the urethra; and, in one case, there was retention of urine, requiring the use of the catheter, but that appears to be referrible to spasm about the neck of the bladder, produced by a blister.

**Sleep** was procured in most cases, especially in the commencement of the malady; but, towards the close of the case, restlessness, more or less extreme, was manifested. Delirium was also observed in one or two cases, towards the close of life; but that was not a symptom observed in the majority of instances.

**Dyspnœa** is mentioned in one case. It did not arise from any affection of the thoracic viscera, but was owing to abdominal dis- tension thrusting the diaphragm upwards, and thus contracting the area of the chest.

**Rigors** were also apparent in two or three cases; and, in these, were precursors of inflammatory action about the peritoneum.

**The duration of the disease,** it will be observed, varied very much. One case was fatal within a few hours, another in three days, another on the fifth day, another on the seventh, and another on the eighth; one on the tenth, one on the fourteenth, and one on the sixteenth day.
CAUSE OF DEATH.

In most instances, the death of the patient is to be referred to exhaustion, consequent on the suffering to which he has been exposed, and the total interruption to the function of the intestinal canal. In some instances, it would appear to be attributable, in great measure, if not entirely, to inflammatory action. In two instances, I think it can scarcely be denied, that death was hastened by the operation performed for the liberation of the stricture; and, in one case, death appeared to be almost instantaneously brought about by the discharge of very large quantities of fluid by vomiting.

PROGNOSIS.

In respect to the prognosis, a few words will suffice, as, so far as we know, all cases are fatal, and therefore the opinion given in regard to them must be very unfavorable. The principal chance of a successful issue seems to depend upon finding out the cause of obstruction, and removing it by operation before the powers of life are too much exhausted.

DIAGNOSIS.

In the earlier stages, it is not easy to say accurately the nature of the affection; but, towards the close of the malady, when it resists all remedies suggested for its removal, there can be little doubt about it.

The maladies most likely to be confounded with internal strangulation, are, colic, enteritis, stricture, malignant disease, and intussusception. In the beginning, it will be perceived, by reference to the cases, that some of them much resembled colic. There was pain of intermittent spasmodic character, in some part of the abdomen, not increased on pressure; constipation of the bowels, and absence of fever. As the disease advanced, however, the pain became more violent and more constant; vomiting supervened, at first of the contents of the stomach, but, ultimately, so-called stercoraceous vomiting. The entire failure of all remedial means plainly showed that colic was not the disease under which the patient labored. From enteritis, it may be distinguished by its comparatively slow progress, by the absence of intense pain and fever, and by the distension of the abdomen not appearing so early as in that disease. As stricture occurs most frequently in the lower part of the rectum, examination by the finger will generally enable us to distinguish between the two; and constipation and stercoraceous vomiting are not so often seen in the former as in the latter case. From malignant disease, it may be diagnosed by the constipation, by the rapidity of its course, and by the constipation being more persevering than in that disease. From intussusception, I know of no symptoms by which it can be clearly and unerringly distinguished; but as it has not been my lot to see much of this latter affection, and as what I have seen has been principally in children, I cannot, from experience, speak to this point.

Respecting the mode of distinguishing one kind of obstruction from another, great difficulty must, necessarily, be felt. If I may draw any inference from one case (and I am very unwilling to do so), I should say that the free relief of the bowels, the result being nevertheless fatal, would serve to distinguish obstruction, the effect of contraction of
the peritoneal coat of the bowel, from strangulation, resulting either from the twisting of the mesentery, or the formation of false bands. According to Mr. Mackenzie, the following will serve to diagnose dislocation of the sigmoid flexure of the colon: "In these cases, while all the symptoms of strangulation and obstruction of the bowels are present, there is one symptom never absent, which, respect being had to the history of the case, leads to a correct diagnosis, viz.—that it is impossible to throw up injection, per rectum, in any quantity; for, as soon as the gut is filled up as far as the twist, which is always low down, the fluid injected flows out as fast as it is thrown up, independent of any action of the intestine itself. Besides, the introduction of the long tube is impracticable, being always arrested at the obstruction."  

Dr. Barlow, in an interesting paper in Guy’s Hospital Reports, endeavours to diagnose the situation of stricture of the alimentary canal, by the amount of the secretion of urine, and cites cases in point. "It seems," he says, "that where there existed a perfect obstruction in the upper part of the small intestines, there was almost a total suppression of urine; where there was a diminution of the calibre of the canal, in the same situation, the urine was diminished in quantity; and where the small intestines were free, and the obstruction was seated in the colon, the urine was very abundant." Should future experience confirm these statements, a very valuable diagnostic mark will be obtained; but in Dr. G. Bird’s case, and in some of those which I have related, the obstruction was seated in the ileum, and yet there was no perceptible diminution of urine, so that more facts are wanted to establish this point. At present it seems probable that where the duodenum is the intestine affected, non-secretion of urine will be noticed.  

TREATMENT.  

In the treatment of this dangerous malady, the following indications present themselves:—1, to open the bowels; 2, to subdue inflammatory action; 3, to support the strength; and 4, to remove the obstruction.  

1. To open the Bowels. As constipation is one of the most constant, and, at the same time, earliest symptoms, to relieve the bowels is certainly the first indication; and this may be attempted by,—a, purgatives; b, injections; c, the warm bath; d, nauseating remedies; and e, bleeding.  

a. Purgatives. Great judgment is, I think, required in the selection of purgatives, as, if they do not effect their object, they do much mischief; for it is questionable whether the ulceration met with in the mucous membrane, in many cases, may not be in part owing to the unsuccessful use of drastic and violent purgatives. Had I grounds for suspecting that a case was one of intestinal obstruction, from any of the causes mentioned, I would endeavour to liquefy the motions, so that, if possible, they might pass the stricture in a fluid form. For this purpose, I would give one large dose of calomel, to be succeeded every two hours, if the stomach would permit it, by drachm doses of sulphate of magnesia, in peppermint water; and, did these not succeed,
I would rub croton oil on to the abdomen, or try one drop of croton oil internally. Should these fail, I would give up the use of purgatives, feeling assured that the obstruction was much too complete to be overcome by their means.

b. Injections. Purgatives failing to procure action from the bowels, recourse is naturally had to injections, which should, in the first instance, consist of the compound extract of colocynth, dissolved in water; but when a tympanitic state of the bowels occurs, turpentine, or the tincture of assafoetida, is to be preferred. So far, however, as my experience goes in these cases, injections avail but little; and I shall hereafter relate a case where seventy-two injections were administered without any apparent beneficial result.

c. The Warm Bath is a remedy which it would be very proper to use in the earlier stages; but, as the disease advanced, the strength of the patient being much exhausted, would scarcely justify its trial. Fomentations, often useful, and always soothing, should be used in all cases, especially where there is pain.

d. Nauseating remedies, in a strong and robust individual, might deserve a trial. Of these, perhaps, the two best are tartarized antimony, and the tobacco injection; but I should not be very sanguine of obtaining success by their means.

e. Bleeding may be now and then resorted to, in the earlier stages, in the robust and plethoric; but bleeding, carried to any great extent, I consider objectionable, for reasons to be stated hereafter.

2. To remove inflammation is a point to which particular attention should be directed; and, perhaps, there is but one thing of more consequence than this, for if it be allowed to go on unchecked, it may destroy the patient; and yet, if too vigorously attacked (by reference to the cases it will be seen that, in some, it was entirely absent, and, in almost all, limited, and by no means severe), the patient may sink from other causes. I think, therefore, that general bleeding will seldom be called for on this account; the application of leeches, fomentations, and the administration of small doses of calomel and opium, will be all that is required for removing or controlling peritonitis brought about by this cause.

3. To support the strength. I am very anxious to lay great stress upon this point, because I do not think it has been sufficiently attended to in practice; and I feel sure that patients have been largely bled, who would have had a better chance, had the vital fluid been less unceremoniously abstracted. If the bleeding be not sufficient to effect its object, either in opening the bowels by its depressing effect, or by removing the peritonitis by its antiphlogistic power, it must, if carried to a great extent, do infinite harm, as it will tend to depress the vital powers, already at a low ebb, and thus take away, I may say, every chance, either from the efforts of nature, or the resources of art. In the absence of fever, and where the stomach would allow of it, I would give, from time to time, barley water and chicken broth in small quantities. Where there is great restlessness and want of sleep, and where I had failed in the use of purgatives, and determined no longer to administer them, I would certainly advise the administration of opium, as, by so doing, I should hope to tranquillise the nervous system; for nothing tends to exhaust the frame so much as long-continued nervous irri-
tability; and cases are on record showing the good that has been done with it occasionally. If I employed opiates, I should prefer solid opium to every other form.—first, as being more likely to be retained by the stomach; and secondly, as possessing a stimulating as well as sedative property, which, I think, would, in these cases, be decidedly advantageous.

4. To remove the obstruction is one of the most important and difficult questions connected with this subject, and one upon which much difference of opinion exists. It is clear that this can only be done with certainty by means of an operation; and two cases have lately occurred, in which encouragement has been given to this plan. In one of the cases (Mr. Hilton’s), the bowel was so far liberated, that the intestinal contents passed through the obstructed part. In neither of the cases, however, did the patient long survive. In considering this subject, four points are to be entertained: A, the likelihood of finding and removing the obstruction; B, the place of performing the operation; C, the time at which it should be undertaken; D, the chance of success that may attend the attempt.

A. The likelihood of finding and removing the obstruction. Upon this point, there can be no doubt that there is great uncertainty; for although, in both the cases to which I have alluded, the obstruction was detected and removed, yet in one (Mr. Hilton’s case) very considerable difficulty was experienced; and in case xvi, had an operation been undertaken, the incision would, in all probability, have been made to the right of the umbilicus, as a decided induration was evident there, and not elsewhere, and a pouch immediately above it. It was natural, therefore, to suppose that this was the point of obstruction; whereas, on dissection, this proved to be merely hardened scybal; and the fatal incarceration was situated in the upper and posterior part of the left side of the pelvis.

B. The place of performing the operation. Mr. Phillips says: “There are some cases where the seat of obstruction is so clearly indicated, that no doubt remains. In such cases, I apprehend the rule is evident, —the incision should be made as near as is prudent to that point. But supposing the point of obstruction to be only obscurely marked, or indeed not discoverable at all, then I consider the incision should be made on the median line, because an opening in that situation may be found most convenient for liberation, if that be practicable; or, for the establishment of an artificial anus, supposing liberation of the intestine be not accomplished.” The case, however, to which I have just alluded, induces me to think the central incision, as recommended by Dr. Crisp, preferable in all cases where the obstruction is seated in the small intestines.

C. The time at which an operation should be undertaken. It is very difficult to lay down any decided rule for this. Mr. Phillips says, that interference by surgical operation is justifiable when three or four days have passed without any relief from the bowels by ordinary means, providing constipation be complete, and faecal vomiting continue. I scarcely think we are justified in operating so soon; partly because persons have recovered from constipation of twenty-three days’ continuance, and partly for reasons which will appear in the sequel.

D. The chance of success I regard as a very important consideration
before undertaking any operation; and I cannot think that cases of internal intestinal obstruction, even under favourable circumstances, offer much chance of a successful issue from operation.

In the cases to which I have referred, it has been said, that, had an operation been performed earlier, a different result might have been obtained; and no doubt, in both cases, delay was caused by the unwillingness of parties interested to give their consent. Can that be a matter of wonder, when it is recollected, that if an operation be undertaken, both the patient and surgeon must be prepared to go all lengths? The obstruction may not be at the part suspected; it may be some way from where the operation was commenced, and a very large abdominal section may be required to complete the operation; and it may possibly not be completed at all. How can this be undertaken without very considerable risk? How can such an operation be proposed early? And how can any better justification be urged for such a proceeding, than that long since advanced by Celsus: "Satius est aniceps remedium experiri quàm nullum?"

If it be true, that great difficulty attends the finding these obstructions, and great danger follows the attempt at removing them by the knife, so that we cannot conscientiously recommend it but as a forlorn hope, it is but reasonable to inquire, whether any other expedient can be resorted to for a similar purpose. And this naturally induces me to ask whether nature ever produces a cure, or whether spontaneous relief is ever obtained? Several cases are on record, where persons with the symptoms I have described, and, to all appearance, sinking from internal obstruction, were suddenly relieved in the bowels, and gradually recovered. A case is alluded to by Mr. Cooper where this happened. An elderly lady, residing at Norwich, was under the care of Mr. Colman, suffering from constipation of the bowels, having had no evacuation for four days. The usual purgative remedies were prescribed, but without effect; enemata and more drastic cathartics were tried, but still ineffectually; vomiting and immense distension of the abdomen supervened; the symptoms became more and more urgent, and, on the twelfth day from her attack, she had had no relief from her bowels. Dr. Alderson was then called in, and asked what purgative he would recommend; to which he replied—"None; but a large dose of opium". It was given, and in a few hours the bowels were freely opened, and the patient recovered.1 What was the precise condition of this lady must ever be open to doubt; but I venture to suggest that this might have been a case where the bowel was stricture by false membrane, that inflammation and ulceration of this band ensued, and that then the gut was liberated; and I am the more inclined to think so from what is observable in Fig. 5, in which the band seems to be undergoing the ulcerative process; and I feel convinced that, had the patient lived a little longer, it would have entirely given way, and the patient might possibly have recovered. It is this conviction which makes me lay so great stress upon keeping up the strength of the patient; for as newly-formed parts are less organized than those formed originally, there is a hope, if the strength of the constitution be kept up, that the band may give way before the bowel, and the patient's life be saved. It is from this case that I particularly recommend the

1 Medical Gazette, vol. xlii, p. 608.
renewal of the old plan of metallic mercury; I think its use has not been rightly understood. That it will remove an intussusception, or enable a portion of bowel to be drawn out of these bands, I agree with Mr. Hilton, is not at all likely to happen; but that it might in favourable cases (Mr. Hilton's was not one of that sort), by exciting a pressure upon the bowels, break through a false band, I verily believe; and I am more strengthened in this idea by the good that has occasionally followed its use. I have heard of a case, which I believe was of this kind, where metallic mercury appeared to remove a very obstinate constipation, and the patient recovered; and my friend Mr. Lawrence of Brighton has mentioned to me, and kindly allowed me to make public, the two following instances, which are cases in point. In one, a boy, æt. 10, was seized, without any apparent cause, with constipation of the bowels, but with no sign of inflammation. He was bled, leched, took drastic purgatives, and had seventy-two gisters administered. On the twenty-first day of the disease, no motion having been procured, 3ij of metallic mercury were swallowed; no effect following, the same quantity was repeated on the twenty-third day, after which he felt great weight and pain in the abdomen, and voided, with much forcing, an immense quantity of fecal matter, and all the mercury, minus 3ss; almost fatal syncope followed, but the boy eventually recovered. The other was a case of similar, of shorter duration; it occurred in an elderly lady. All purgatives proving unavailing, two doses of metallic mercury, of 3iv each, were given; several motions (and all the mercury, minus 3j) followed its exhibition after six hours, but the exhaustion and the depression occasioned were such as to destroy the patient. For these reasons, I think metallic mercury again worthy of a trial; it can do no great harm, and may do good. That it will often fail, I have not the least doubt, especially where the obstruction is low down, and has been so great as to ulcerate or destroy the coats of the bowel; but where, on the contrary, the band is thin, and high up in the canal, where the constriction is not so great as seriously to engorge or injure the part constricted, where the system does not sympathise much with the local malady, and where the powers of life remain vigorous, I am not without hope that it may occasionally succeed; and if but one case should occur in which, from what I have said, a trial of this remedy should again be made with success, I shall consider my observations not altogether out of place, and I hope I may with truth be permitted to say—"Est quiddam prodire tenus si non detur ultra".

Case xii. Former Enteritis—Obstruction of the Ileum from Contraction of the Peritoneal Coat—Softening and Ulceration of the Bowel—General Peritonitis—Circumscribed Abscess in the Right Iliac Fossa. J. T., æt. 40, came under medical care on January 28th, 1832. He had been subject to flatulence and constipation, and had been seized three months previously with obstinate constipation, and with marked symptoms of enteritis; but recovered by bleeding, croton oil, and purgative enemata. When I saw him, he complained of violent pain in the situation of the transverse colon, relieved by pressure; it had existed only a few hours; there was slight tension of the abdomen. He had had three motions on the preceding day, and one that morning; he had no fever. He was ordered to be bled to 3xvi; to have a drop of croton oil immediately, and 4 grs. of scammony every four hours until the bowels were opened.
Jan. 29th. Blood not sisy: no pain: no fever: no motion. To have a drop of croton oil immediately, and to have it repeated if required.

Jan. 30th. No motion. Two drops of croton oil, and an ounce of castor oil were taken, and injections frequently given. A bougie was passed into the rectum, and met with complete resistance at four inches. The croton oil and enemata were repeated.

Jan. 31st. After great efforts, a very hard portion of fecal matter passed, as large as an egg, yesterday afternoon, which afforded great relief; three or four loose motions followed. Pain recurred this morning in the transverse colon, and there was great rigidity of the abdominal muscles. Half a drachm of castor oil was given; an opiate liniment was used; and the enemata were repeated.

Feb. 2nd. Leeches had been applied to the abdomen, and several enemata and purgatives administered. No motion until last night. Some urine passed. He is easier, but the abdomen is still tense. A dose of salts and senna was given, and fomentations were applied to the abdomen.

Feb. 3rd. Many foul fecal stools, with some lumps, and griping; belly less tumid, and softer; pulse natural; tongue clean. He was directed to take a grain of Barbadoes aloes every night.

Feb. 4th. Vomited yesterday afternoon; several motions; abdomen, notwithstanding, hard and full, especially on the right side.

Feb. 5th. Diarrhea; vomited at times yellow matter, of fecal smell; belly soft and easy; pulse good; tongue clean, but red. The enemata were repeated; and he was ordered to take twice daily a pill, of a grain of calomel, half a grain of opium, and four grains of compound extract of colocynth.

Feb. 6th. No motion; no vomiting; exceedingly restless; hic-cough; pulse very feeble; an aphthous state of the throat. To have a cathartic draught occasionally; the injections to be repeated.

Feb. 8th. Four motions, some figured; abdomen full; aphthae increased; pulse lower; light-headed; sinking.

Feb. 12th. He died.

Dissection, forty-eight hours after death. The skin covering the abdominal parietes was undergoing putrefaction; the abdomen tense; no air nor fluid in the general cavity. The jejunum and upper part of the ileum were enormously distended (measuring nine inches in circumference), chiefly by wind, but partly by yellow liquid fecal matter. There was a stricture, formed apparently by contraction of peritoneal coat, without any thickening, in the ileum, near its middle; the calibre of the gut in this situation would not admit a large pea; the lower half of this intestine was exceedingly contracted. The convolutions of the intestines were united together by bands of lymph; they were also adherent to the abdominal parietes, and in many places approaching to sphacelus; for, on gently separating the unnatural adhesions, an opening was made into the gut. There was an unnatural contraction of the muscular fibres in the centre of the transverse colon; but, by pressure, this part could be made as capacious as others. There was a large collection of pus in the right iliac fossa, which was contained in a distinct cyst of false membrane, formed by the agglutination of the lower part of the ileum, the cæcum, and the peritoneum covering the right transversalis and iliacus internus muscles.

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INTERNAL INTESTINAL OBSTRUCTION.

Case XIII. Former Peritonitis—Enteritis?—Strangulation of the Ileum by Membranous Bands—No Ulceration—Death on the Sixth Day. I was invited by a medical friend to witness the post-mortem examination of a gentleman, æt. 40, who had been attended by Dr. Davis, Mr. Key, and himself. This gentleman, in the year 1830, had been seized with constipation of the bowels, to which succeeded peritonitis. He was largely bled, treated in the usual way, and recovered. For three years he enjoyed very good health, except being occasionally subject to constipation, which easily yielded to aperients. On the 4th September, 1833, he had as usual a natural motion in the morning; but, after eating a mutton chop for dinner, he felt an uneasiness and fulness of the abdomen, for which he took a blue pill, and a mild aperient draught. The uneasiness continuing, leeches were applied to the abdomen, and croton oil and other purgatives administered, together with enemata.

Sept. 5th. No motion having been procured, the uneasiness continuing, and sickness supervening, with tension of the abdomen, the purgatives were continued, and the enema repeated; the latter returned, only slightly tinged with faecal matter.

Sept. 6th. After taking a mild aperient draught, he had one scanty motion; felt much less distension; and the vomiting abated. Towards the afternoon, however, the uneasiness increased, the sickness returned, and he had no further motion. The purgatives and enemata were continued; a blister was applied to the abdomen; and an opiate was ordered to be taken at bed-time.

Sept. 7th. There were more distension and uneasiness of the abdomen; the vomiting was stercoraceous; the bowels were still confined.

Sept. 8th. He was much the same, with the exception of retention of urine (probably owing to the blister), requiring the catheter.

Sept. 10th. Hiccough supervened; the stercoraceous vomiting continued; and he died at ten o'clock at night.

Dissection. Decomposition was commencing. About eight ounces of brown serum was found in the abdomen: there was no other evidence of recent peritonitis. The liver, gall-bladder, spleen, and stomach were healthy. A little flatus, and much yellow faces, occupied the small intestines, the muscular coat of which was in a state of hypertrophy. The hypertrophied appearance increased towards the lower part of the ileum, where, not far from its termination, a considerable knuckle was surrounded by two false membranes, one of them of extreme tenuity, not much thicker than a thread, and in parts of a black colour; this completely surrounded the gut, and very considerably diminished its area. The surrounded portion was of a pale colour, and flaccid; and the mucous membrane, in various parts of the intestine, was soft, pulpy, and of a chocolate colour, but nowhere ulcerated. The large intestines were healthy. The bladder was empty.

Case XIV. Former Peritonitis—Obstruction from some folds of the Ileum being adherent to the Abdominal Parietes—Mucous Membrane softened and ulcerated—Death on the Ninth Day. A man, æt. 34, in lifting a weight, overstrained himself; shortly after which, he felt a pain in the bowels, and, although this continued, he did not for six days apply for medical advice. On the 6th day, he complained of some pain in the abdomen, which was
tense, but not very tender on pressure; his bowels had not been 
opened since the strain; he had constant vomiting, occasional hic-
cough, and some dyspnœa; his countenance was florid; his tongue 
covered with a brown fur; his pulse was regular, full, and wiry; and 
there was dysuria from stricture about the bulb of the urethra. Twenty 
obounces of blood were taken from the arm; twenty leeches, and foment-
ations, were applied to the abdomen; and ten grains of calomel and 
an effervescent draught were given.

Five hours afterwards, I found him much the same. He had vomited 
frequently, but the calomel had staied down; there was rather more 
pain upon pressing the abdomen; he had slept a little, but he had 
had no motion; the tongue was moister, but the countenance was 
much shrunk; the pulse was 97, small and thready; there was very 
great general debility, and the skin was covered with a cold clammy 
perspiration. Five grains of calomel and one of opium were ordered, 
 together with castor oil and enemata.

7th day. Some sleep during the night; less pain, but more tender-
ness of the abdomen; vomiting and hiccough continue; no motion; 
in a state of complete collapse. Extract of colocynth, croton oil, port 
wine, and quinine were given him; the fomentations continued; and 
a turpentine enema administered.

8th day. The matter vomited assumed the fecal character; there 
was no motion, although some of the enemata, which had been fre-
quently given, were slightly tinged with fecal matter. The collapse 
became more perfect; and he died in the afternoon.

Dissection, sixteen hours after death. The muscles were 
very rigid; the abdomen was tense; the thoracic viscera were healthy. 
A great portion of the small intestines were immensely distended with 
flatus; the vessels of their peritoneal coat, as well as of that lining 
the abdominal parietes, were much congested: some of the folds of 
the ileum were agglutinated together, and tightly bound down to the 
peritoneum covering the right iliac fossa, by strong and apparently 
long-standing membranous bands. The mucous membrane of the con-
stricted part was in a state of ulceration; and the coats were so com-
pletely softened, that they all gave way, upon the convolutions being 
laid hold of. The folds of small intestine below the constriction, were 
only one-fourth the calibre of those above. The muscular coat of the 
bladder was very much thickened, owing to a stricture which existed 
at the bulbous portion of the urethra.

Case xv. Internal Hernia—Strangulation by Omentum— 
Vomiting of Ten Pints of Fluid—Death within Three 
Days of the Seizure. A medical man was called one morning to a 
gentleman, æt. 58, who was said not to be quite well. He had slept 
indifferently, and complained of a little sickness, or rather a slight 
feeling of it; his bowels were somewhat uneasy, and had not been 
relieved since the previous afternoon. Although the message was not 
urgent, the surgeon went immediately, and found his patient in bed. 
He expressed surprise at seeing him so early, and regretted that he 
had given himself so much trouble for so little cause. His pulse was 
68; skin cool; tongue clean; abdomen rather too full, but quite soft; 
there was no pain upon pressure, but a feeling of soreness. Blue pill 
and compound rhubarb pill were prescribed for him. At five in the
afternoon he was much the same, having taken at noon a draught with rhubarb and decoction of aloes. The draught was ordered to be repeated every four hours, and the patient was left, without any reason to be anxious about the issue. The following morning, early, the symptoms were not aggravated, except that the abdomen was somewhat larger; there had been no motion, although three doses of rhubarb and decoction of aloes had been taken. A pint and a half of warm water, with some oil, were injected into the bowel; five grains of calomel were put upon the tongue; and, after an interval of two hours, a teaspoonful of castor oil was administered. At 12 at noon, his pulse was not quickened; but his abdomen had become somewhat larger. At 3 p.m. an active enema was administered, without benefit; and a pill composed of calomel and soap was ordered to be given every two hours. At 5 p.m. the pulse had become quicker, and the abdomen larger. At 8 p.m. he was seen by a physician, whose opinion was unfavourable, notwithstanding that there was no evidence of inflammation, and no effusion, and that no hernia was discoverable. He advised that croton oil should be added to the pills, and a turpentine enema administered. At half-past 12 p.m. the patient was quite calm; his intellect quite clear. He was thankful for everything done for him; and stated his belief that there was some alteration of structure, which could not be overcome. About 3 the following morning (the third day), he began to vomit; and, raising himself on his elbow, fluid to the amount of ten pints passed from his mouth, as from the spout of a pump, without the least effort; during this, he fell over on his side, and expired.

Dissection, twelve hours after death. Upon turning up the omentum, the cause of death was immediately evident. A portion of omentum had grown round a knuckle of the small intestine (ileum), and occasioned strangulation; so that when the omentum was turned back, the intestines were dragged back with it. It appeared as if this fatty growth had been in progress for some time: it was pervading the intestines generally. They were also very much narrowed in two or three places. There was no fluid in the abdomen, neither were there any evidences of inflammatory action.

Case xvi. Ileum Strangulated by False Bands and Mesentery—The latter nearly ulcerated through—Death on the Ninth Day. John Anthony, æt. 21, was admitted a patient of the London Dispensary, under the physician, on May 11, 1833. He was by trade a Sawyer. He was of costive habit, and had overstrained himself some years ago. He was at work as usual on the 8th inst., when he suddenly felt a sensation as if his bowels were drawn up in knots: he soon became sick, and had since had no motion. He had been twice bled, with relief, and leeched upon the abdomen; and he had taken calomel, jalap, and scammony.

On the 16th he was transferred to me. The blood taken from the arm was neither cupped nor buffed; he was much exhausted and emaciated; features very much shrunk; abdomen very much distended, and tympanitic. There was something resembling a pouch to the right of the umbilicus, and below this an induration, which was very tender when touched. Pressure upon any part of the abdomen gave pain, but more especially in the before-mentioned part, and in the course of the
descending colon. With the exception of two days, vomiting had been constant from the commencement of his illness: this morning a large quantity of very offensive stercoraceous matter was brought up. He lay with his legs drawn towards the abdomen, being easiest in that position; no rigors; no sleep; tongue brownish, and like raw meat in the centre; pulse soft, 108; skin perspiring; rectum, upon examination, healthy and empty. He was ordered to have a common enema immediately, and two grains of calomel and a quarter of a grain of opium, and a drachm of Epsom salts in peppermint water every two hours; and to have a turpentine injection in the evening.

May 17th. The injections soon returned, only slightly tinged with faecal matter; the vomiting continued urgent; the matter rejected was yellow, and seemed to come from the small intestines; the abdomen became more distended. He became delirious, and died at eleven in the morning.

Dissection. There were about two ounces of serous fluid, but no air, in the general cavity of the abdomen. The small intestines were excessively distended, partly by yellow inodorous fluid, and partly by flatus. The coats of the small intestines were hypertrophied; the lower part of the ileum, towards its termination in the colon, was in a complete state of strangulation, both from bands and mesentery. The portion incarcerated consisted of two convolutions, united together by bands of lymph, in a state of great engorgement; the mucous membrane appeared softened, and on the eve of bursting; and the portion of mesentery by which the principal stricture was formed, although very tightly embracing the bowel, was also softened, and had in part given way. The portion strangulated was lying in the upper and posterior part of the left side of the pelvis; the caecum had been somewhat dragged from its situation. The liver was healthy; the gall-bladder distended with green bile; the right kidney was healthy, but its ureter was dilated to the size of a goose-quill. The thorax and head were not examined.

Conclusions.

I. The ileum is that part of the intestinal canal where internal obstruction is most likely to occur.

II. Membranous bands (probably the result of former peritonitis) are the most frequent cause of obstruction.

III. Partial is more likely than general peritonitis to lead to obstruction.

IV. All the convolutions of the intestines may be united together without obstruction.

V. Mechanical, although the direct, is not the sole cause of obstruction, as there is reason to suppose the mechanical cause has been in existence some time before the symptoms show themselves; other causes must therefore arise to produce them, and the most frequent of these are sudden and violent exercise, and errors in the quantity or quality of food.

VI. It is possible for a spontaneous cure to arise from inflammation and ulceration of an obstructing band.

VII. The same consequences are seen in internal intestinal obstruction as are seen in other obstructed canals—viz. hypertrophy and dilatation above the stricture; atrophy and contraction below it.
viii. The symptoms vary considerably in different cases.

ix. The order in which the symptoms arise is as important as the symptoms themselves.

x. There are no symptoms by which one obstructing cause can be clearly distinguished from another.

xi. The duration of the disease varies much in different cases.

xii. The strength of the patient should be maintained.

xiii. Bleeding should be employed with great caution.

xiv. The seat of obstruction may be very apparent, and yet deceptive.

xv. An operation is only justifiable as a forlorn hope.

xvi. As a rule, when an operation is resorted to, the central incision is to be preferred.

xvii. There is reason to believe that metallic mercury has proved useful; and it is in obstruction from membranous bands chiefly, if not solely, that benefit is to be expected from its use.

Camden Row, Camberwell, April 1851.

-OBSERVATIONS ON THE FORM AND MOVEMENT OF THE CHEST IN PHTHISIS-

By RICHARD PAYNE COTTON, M.D., Assistant-Physician to the Hospital for Consumption and Diseases of the Chest.

An absence of symmetry both in the form and movement of the thorax is very apt to be considered as a necessary condition to the diagnosis of Consumption; and I have seen many cases of phthisis overlooked, in consequence of a well-formed and, to all appearance, healthy chest, having been deemed incompatible, not only with the existence of pulmonary tubercles, but even with the tuberculous diathesis. It is the object of the following observations to correct this misapprehension; and I shall commence with a few remarks upon the relation of the form of the chest to the development of consumption.

The form of the thorax appears to have little or nothing to do, primarily, with this disease, for it is equally common to see phthisis attacking persons of fine and well-proportioned chests, as those who are the subjects of some congenital or acquired thoracic malformation. The life-guardsman, the pugilist, the blacksmith, etc., notwithstanding the fully-developed chests which their several occupations induce, are, ceteris paribus, quite as liable to the inroads of phthisis, as the mechanic or artisan, whose daily task leads to the opposite result; the truth being that, in every instance, the origin of the disease is not attributable to any peculiar conformation of chest, but to the various circumstances under which such conformation has arisen; the impure atmosphere which has been breathed; the excesses which have been indulged in; the violation of sanitary laws; or, the inherited scrofulous taint. It is very questionable whether even the evil practice of wearing stays has been justly accused of bringing on phthisis in the female sex. M. Louis considers the popular belief upon this subject