Thesis

On mechanical occlusion of the intestinal tube.

by Andrew Veitch.
Oclusion of the intestinal tube, caused by some mechanical impediment to the passage of faeces, which our efforts have failed to overcome, is one of the most painful affections, which we as physicians or surgeons, can be called upon to treat. There are few circumstances more distressing than those, in which we must determine whether the ordinary means are to be persevered in, or the patient abandoned to his fate.

Obstruction of the bowel may come on slowly, with the ordinary symptoms of constipation, the patient experiencing increasing difficulty in obtaining evacuations, until they cease entirely. The patient may perhaps take some purgative medicine, which has no effect. The dose is repeated. It causes pain and griping, but no evacuation. In many instances the attack is sudden. Sometimes no great inconvenience is felt for some days after the cessation of the discharges; but sooner or later, and sometimes immediately, the patient begins to complain of pain or uneasiness in the abdomen. Sometimes there is a desire to go to stool, and the efforts made to evacuate the bowels, afford no relief, or produce only slighty feculent, bloody or mucous discharges. Drastic purgatives which are
taken produce no effect, and enemata employed may bring away small quantities of feces, but afford no relief. The matters thus obtained consist only of what were lodged in the bowel below the point of obstruction. The abdomen then becomes distended, with flatulent eructation, severe spasmotic pains, great restlessness and anxiety, and at length nausea and vomiting; food or medicine taken into the bowels are immediately rejected. Symptoms of inflammation often set in, the patient has quick pulse, flushed tongue, and tenderness of the abdomen upon pressure. If no relief be obtained the nausea and vomiting often become distressing; there is violent retching, and the vomited matters assume the odour and appearance of feces, and frequently are unequivocally steraceous. Dysuria may occur; the abdomen becomes greatly distended and tympanitic; the pulse intermittent and irregular; the extremities grow cold; the respiration is oppressed; the features sharpened and ghastly; the skin is cold and clammy, and bathed in sweat; the pain may cease; the sphincters become relaxed, and the patient sinks, worn out and exhausted. Death takes place by asthenia, and is sometimes preceded by delirium, but generally the intellect...
remains clear to the end.

These symptoms however may vary. The vomiting is not often absent, yet it is said that cases have been recorded, in which it was not distressing, neither did it end in faecal vomiting. Sometimes it affords temporary relief; the suffering may be mitigated, and the worst symptoms disappear, to return again when the bowels become loaded. The terms Ileus and Volvulus have been applied to cases of sterneaconous vomiting, in which the contents of the bowel are carried out of the body in a retrograde direction. This kind of vomiting may occur in colic.

The pain may come on suddenly, or there may be occasional uneasiness or pain without other symptoms for some time. It may be diffused over the abdomen or confined to one spot, but as the disease advances the whole cavity becomes painful and tender.

The pain is sometimes continuous, but usually occurs in paroxysms. There may be no considerable pain up to the death of the patient, though that may take place within twenty-four hours.

The constipation is usually complete, but there are cases of invagination, where small stools containing a little turgidmous mucus and faecal matter
have been passed. The other cases of obstruction are seldom accompanied by other stools than those obtained by washing out the bowel with enemata.

It is surprising how long a patient may survive without any evacuation from the bowels. Dr. Watson states that he attended a lady who lived forty-six days after the last alvine faecal discharge. Dr. Cranston, in the Dublin Hospital Reports (Vol. IV), gives the case of a young woman, then living, who for seven years had laboured under stercoraceous vomiting, with obstinate constipation; she had stools at distant intervals, only two or three during the year preceding the report, and none at all during the last eight months. Dr. Bache reports a case in the N. American Medical and Surgical Journal (Vol. VII), which continued for ten months, during which period there was several times an absence of stools for more than twenty days, and once for eighty-seven days, and yet the patient ultimately recovered. In both these last cases, the stercoraceous matter vomited had a strong urinary odour, and there was also for longer or shorter periods suppression or retention of urine. These phenomena not unfrequently occur in cases of obstinate constipation.
The abdominal tension is usually great; but there are cases of obstruction in which the abdomen is com-
paratively flat. Dr. Barlow has pointed out that in the unusual case of obstruction of the duodenum, the abdomen is flat, or even sunken; in a case of obstruction of the rectum or of the sigmoid flexure, it is distended and resonant; obstacles in the intermediate portions of the canal give intermediate degrees of distention.

When the abdomen is opened after death from obstruction, the intestine is seen to be distended by gaseous or liquid matters, and bears marks of in-
flammation; it is of a red or dark colour; covered frequently on the peritoneal surface with coagulable lymph, or with pus; or adherent to the neighbouring organs. If we follow the intestine, the portion nearest the stomach is found inflamed; the remaining part is pale and shrunk and apparently healthy. The difference between them is clearly marked and depends on the obstruction. This distinction between the healthy and inflamed portions of bowel is generally well marked, even when there is apparently no obstacle.
These last forms of the disease have caused considerable difficulty. Some have thought the contracted part was the seat of spasm, and that the upper part became distended and inflamed in consequence. The muscular coat of the upper portion appears to have lost its contractile power, probably from the effect of the inflammation. The inflamed portion of intestine is frequently very dark in colour, or almost black, owing to great congestion of blood. This black colour may be mistaken for gangrene; but if the coats of the intestine are firm, and the odour of gangrene be not present, there is no reason for concluding that mortification has taken place.

The causes of intestinal obstruction are various. An accumulation of hardened faeces may close the passage. This is a frequent cause of obstruction. Intestinal concretions are another cause. These occur in various parts of the bowel, mostly in the caecum and large intestine, but sometimes in the stomach. They are generally caused by the deposit of animal or saline matter or of vegetable fibres around some accidental nucleus. The nucleus may be composed
of pure cholesterol, and of various substances, such as a gall stone, the husks of grain, unbroken seeds, the stones of different kinds of fruit, such as cherries and plums. The use of certain articles of diet such as oatmeal, and of certain medicines, such as chalk, magnesia, and the sub-carbonate of iron, has occasioned serious ob-
struction. When examined these concretions are found to be composed of a mass of fibres woven together, either with or without a nucleus: they are soft or velvety to the touch, yet too hard to be compressed. Sections of these bodies are found to present concentric layers deposited around a central nucleus. Sometimes they are of large size. Bonetius describes one which weighed nine ounces and was as big as a hen's egg. Generally they are not numerous, seldom more than two or three being found in one person. But as many as thirty have been found in the stomach in one case, and in another nine. Monroe primus detected twelve in the colon of a boy dying of life. Monroe secundus took a concretion that weighed four pounds from the colon of a woman. Dr. Turner of Keith has published the case of a man named Gordon, who passed several of these hard bodies at different periods, and the whole number amounted
to thirty-two. Foreign bodies of some magnitude are often swallowed and lodge in the intestine. A case is given in the Medico-Chirurgical Transactions of a sailor who swallowed thirteen knives of different sizes, and which proved fatal.

Permanent stricture of the bowel is another cause, either from spasmatic stricture becoming permanent or from chronic thickening of the coats of the intestine causing a diminution of calibre. Cancer is a frequent cause of the narrowing of the channel. It may be caused also by simple inflammatory thickening. Stricture generally occurs in the rectum, but it may be found in other parts of the bowel.

Bands of coagulable lymph, the result of former inflammation, sometimes cause obstruction. These bands catch the bowel when it gets beneath or beyond them, and constrict it. The appendix vermiformis may cause strangulation of the bowel either by forming a loop through which the gut passes, or by being tied round the bowel by inflammatory adhesion.

Intussusception or invagination of the intestines, the upper portion slipping into the lower, frequently causes complete obstruction; or what is less frequent,
the lower portion may slip into the upper. The invagination varies in extent. Sometimes it is enormous. It may occur in more than one part of the bowel in the same case. It is believed to take place during spasmodic action of the intestines in colic, without causing serious obstruction, being relieved by the spontaneous action of the bowels. Invagination may take place in almost any part of the intestines, but it is generally found at the union of the great with the small intestine, the latter being received into the former. It may also be found in the small intestine, in the sigmoid flexure of the colon, and in the rectum. When inflammation takes place, it renders the invagination permanent, causing dangerous closure of the bowel. The affection however, though it generally causes death, is not necessarily fatal.

If the patient has strength to withstand the shock of obstruction, the invaginated bowel motifies and sloughs, adhesion takes place between the peritoneal surfaces of the upper and lower portion, and a natural cure is the result.

A hernia may also cause obstruction, although only part of one side of the gut is contracted in the aperture, and the hernia may be so small as not
to appear externally.

Tumours pressing on the intestine from without, may diminish its calibre and close the passage.

Strangulation of the bowel may occur by its passage through the unyielding edges of abnormal openings, as for instance through an aperture in the mesentery or mesocolon.

Twisting of the bowel is another cause of obstruction. A fold of intestine turns round upon itself, it may even make two entire revolutions, causing complete closure of the bowel. The twisting may occur in consequence of external violence, but generally without any apparent cause. It is said to be most apt to take place in the small intestine, or at the sigmoid flexure of the colon.

Mr. Phillips states, in the 31st Vol. of the Medico-chirurgical Transactions, that of 169 cases of obstruction, 63 were instances of invagination, 16 caused by pressure of tumours from without, 19 the result of stricture from disease of the parietes, 11 the result of intraintestinal tumours, hardened feces, or concretions, and 60 were caused by constriction by bands, by adhesions, by the passage of the intestine through some abnormal opening, or by twisting of the intestine on itself. It would appear
from these cases that invagination is the most frequent cause of obstruction.
It would also seem that occlusion of the bowel is not very uncommon. "Out of 500 post-mortem examinations by Louis, he discovered them only three times; Dr. Boyd out of 108 inspections observed them eight times. Mr. Paget out of 224 saw two. Mr. Prescott Hewett out of 760 cases saw 9 instances. In all 2,392, and 22 instances of obstruction. It would appear therefore that obstructions are found once out of every 100 post-mortem examinations."

Diagnosis.
When we find a patient presenting the symptoms of obstruction, we must find out the cause on which the symptoms depend. In order to do this we must not be guided by symptoms alone; the constipation and other signs may present the same general character, whether caused by hardened faeces, by ulceration, by bands, or tumours. It is said indeed that cases of invagination are attended by diarrhoea or dysentery; the symptoms are more urgent it is said when obstruction has been suddenly produced, than when closure of the canal is gradual; but to these instances there are many exceptions. In order however
to ascertain the cause we must make a careful physical examination. We must search carefully for a hernia; every part where it may appear must be examined; there is reason to believe that neglect of this precaution has been the cause of death in some cases. If no hernia exists, there may be a stricture or a mass of indurated faeces; or there may be a uterine or other tumour pressing on the bowel. A careful exploration must therefore be made of the rectum and vagina.

We must also inquire into the previous habits of the patient. If the bowels have been habitually constipated, or he has been in the habit of using certain articles of diet, we may suspect an accumulation of faeces or intestinal concretions. These last may sometimes be felt through the parietes of the abdomen, generally in the right or left iliac fossa.

The seat of obstruction must if possible be discovered; though in some cases this is very difficult.

The circumstances of the case will generally assist us in determining its position. The distension of the intestines will often aid us. If enemata are thrown up the bowel, they reach the point of obstruction and there stop. The patient also feels that food and drink
taken by the mouth reaches the same point and is rejected by vomiting. When enemata pass without difficulty it is not probable that the obstruction is below the valve of the cæcum. If there be a copious secretion of urine, it cannot be high up in the small intestine. Dr. Barlow first pointed out the importance of this symptom, and explained it by the fact that, if the obstacle is high up in the small intestine, fluids are unable to reach the capillaries of the portal system, and cannot be taken up by the emulgent arteries, so that little urine will be secreted. When fluids are vomited as soon as swallowed, we may suspect that the impediment lies in the upper part of the intestine. If the large intestine is obstructed the sickness is generally later in coming on. Dr. Barlow has also shown that when the duodenum is obstructed the abdomen is flat or sunken, but when the rectum or sigmoid flexure is obstructed it is distended and resonant. Obstacles in the intermediate parts of the canal cause different degrees of distension. Sometimes the pain or tenderness felt by the patient at a particular spot may guide us to the seat of obstruction, or we may find a tumour at the
point of occlusion. A tube passed up the rectum will often aid us, though it must be remembered that it is liable to bend back on itself after reaching the impediment and thus produce an error in our diagnosis.

By attending however to the history of the case, the seat of pain, the existence of a palpable tumour, the distended intestine, the abdominal tension, the urinary secretion, the injection, and the long tube, we can generally discover the seat of obstruction.

Treatment.

When no strangulated hernia, no tumour, or accumulation of hardened feces is found, we must try to overcome the obstruction by the use of purgatives. Calomel and jalaps must be given in large doses, and cathartics must be administered in the form of pill as the stomach is irritable. Stimulating enemata are injected. Then croton oil may be tried, and at last we resort to surgery.

When there are symptoms of inflammation we put in force the antiphlogistic treatment, especially opium and bloodletting as these have often relieved irritation and spasm. But too often these remedies are useless. The medicines are vomited, or they only
aggravate the sufferings of the patient. When this is the case purgatives ought to be given up: to continue them would only inflict needless torture.
On the abandonment of this active treatment, the patient frequently becomes comparatively easy; he has spasms of pain and fits of retching now and then, but in the intervals he has tolerable comfort, but there is no discharge from the bowels.

Having given up the purgative system, we cannot leave the patient to die without an effort to save him. We must try other remedies which have been proposed and have sometimes succeeded.
The first of these is metallic mercury, which has been given on the supposition that it would by its weight overcome the obstacle; but when this is situated in an ascending coil of intestine it will be of no value. It has also the objection of being liable to cause distressing salivation. It has frequently been productive of no benefit and has often done harm so that we can have little confidence in it.
Dashing cold water over the abdomen has sometimes been successful in causing evacuation of the bowels. It was tried in a case in which the bowel was tied down by an adherent appendix semiformis; but
only caused the emptying of the bowels below the seat of obstruction, so that in obstinate cases it appears to be of little or no avail.

Galvanism has sometimes succeeded in those cases in which the bowels are torpid and cannot otherwise be moved. Dr. Abercrombie relates the case of an old gentleman whose bowels were plugged by an accumulation of feces. The obstruction caused painful distension of the abdomen and had resisted the employment of purgatives, it gave way to the application of galvanisms to the part, a free evacuation following each application of the stimulus. Dr. Watson states that he saw a similar case in consultation with Dr. Tyler Smith and Mr. Bryant. The gentleman was of middle age; and after all the ordinary means of emptying the bowels, together with the injection of water up the rectum, had been tried without effect, galvanism was applied, a current being directed through the abdomen. The result was that the bowels were emptied of their contents, and the patient recovered. The obstruction in this case did not produce much abdominal distension.

Inflation of the bowel with air is another expedient
which had sometimes proved successful. Dr. Watson relates a case in which the patient was saved by it. He says, "I was asked, one Sunday afternoon, by a physician, to see his little daughter, aged ten or eleven. On the pre-
ceeding Tuesday she had gone to see the Queen open the Parliament, and was supposed to have caught cold there, for she began from that time to complain of pain in her belly. Some red discharge was reported by her nurse, and it was conjectured that this might be a show of commencing menstruation. However, she continued ill, and no pain, and was sick, and her bowels refused to act. On Saturday there was a dis-
charge of blood and mucus. Dr. West was then consulted, who found no marks of menstruation. The discharges had been from the rectum. Purgatives and ordinary injections failed entirely of their purpose. It was pretty evident that the child was labouring under intussusception. As a last resource, and with a faint hope of rectifying the mischief, it was proposed to inflate the bowel with air. This was done about midnight, by Mr. Ericsson, by means of the bellows used by the Royal Humane Society for producing artificial respiration. With my hand placed on the child's left flank, I could
feel as well as hear the air enter with a rush and a noise upon each action of the bellows. Its entrance gave her some pain. She said, "There! that will do." Oh, don't mix.

The inflation was continued for some minutes, yet the abdomen did not become much distended. After it was over, the patient seemed easier, and in about two hours she passed a natural fecal stool. She got well without another bad symptom."

Sometimes the obstacle is removed apparently by an accident and the patient recovers. Dr. Watson mentions a case of this kind. The patient was an elderly lady who suffered much from pain and vomiting. The obstacle was displaced in consequence, as it appeared, of the pressure made on the abdomen by the hands of the physicians who were consulted. Next day the patient passed a gall stone, which was as big as a small walnut.

Copious enemata should be thrown up the bowel, and should be frequently repeated, masses of hardened feces may be broken down and removed in this way. These enemata may also nourish and support the patient if they are composed of milk or beef tea. They allay the spasms and sickness, give relief and comfort generally following their administration.
In some cases, however these means fail, and it becomes evident that the bowel is obstructed by some mechanical impediment which cannot be overcome. But how are we to know that this is the case? On this subject Dr. Watson says: "We fear this when the constipation being obstinate, we discover a tumour, or hardness in some part of the belly; when we receive a history of some former inflammatory attack, since which the bowels have been habitually difficult to regulate. Our fears are strengthened when the patient feels that the injections reach a certain spot, and there always stop; and that the intestines rumble, and roll, and propel their contents downwards to the same spot, and no further. The abdomen gradually enlarges, especially if the patient be able to retain food. The intestines fill up above the obstacle; and then throes of pain occur, spasms the sufferers usually call them, attended with sickness; and during these pangs you may feel, and if the abdomen be uncovered you may see, immense coils of intestine as big as one's arm, rise and roll over, like some huge snake, with loud roarings and flatulence. When this takes place the time for giving purgatives is certainly over. The distended bowel requires no stimulus; it acts, and acts
with all its power; but strives in vain, to overcome the opposing barrier. If you would consult your patient's case, if you would not embitter and abridge his slender remnant of life, harass him no further with active remedies. In these desperate cases where all means have failed, there still remains the chance of saving the patient's life by an operation. This consists in opening the intestine above the seat of obstruction, and in this way forming an artificial anus through which the contents of the bowel are discharged. It can be performed only when the obstacle is situated in the colon at or below the sigmoid flexure. The operation is performed in two ways. The first method consists in opening the intestine in the iliac fossa, and cutting through the peritoneum covering it. In the second method the gut is opened through the loin, by cutting between the layers of the meso-colon without injuring the peritoneum.

The first of Lister's operations, so called from a surgeon of that name, who in 1710, recommended that the sigmoid flexure of the colon should be opened in these cases. But it was not until 1776 that Pierre Rygn, a surgeon of, opened the caecum in a case of retention of faeces. In 1797, Fize of Geneva, opened the transverse...
colon from the umbilical region.

Callisen, in order to avoid the consequences of wounding the peritoneum, proposed in 1796 that the colon should be opened from behind in the left lumbar region, where it is not covered by peritoneum. Having tried this operation on the dead body of a child, and failing to reach the bowel without wounding the peritoneum, he appears to have abandoned it. The operation seems to have met with little favour both then, and for some time afterwards.

Amussat, who had attended the celebrated Boussaus when affected with scirrhous of the rectum, and was thus led to consider this subject, proposed in 1839 and 1841 a modification of Callisen's operation. Since then the operation for the formation of an artificial anus has been repeatedly performed both in France and England. M'Causer Hawkins gives a table of forty-four cases, and states that "four patients are now living and in good health, whose lives have doubtless been prolonged by the operation."

Amussat's operation is performed in the following way. A transverse incision is made above the crest of the ilium, in the middle of the space which is bounded by the false ribs above and the iliac crest below. The incision should begin at the outer margin of the quadratus
lumborum, and extend outwards for about four inches. Having divided the skin and superficial parts, the deeper layers may be cut through, and if necessary, the outer borders of the quadratus lumborum may be also divided. The layers of cellular tissue which lie immediately upon the intestine are then to be cut through with great care, and the colon must be sought for; it will generally be easily found, and recognised by its colour and distended appearance. The gut is to be drawn to the surface of the wound, by passing a needle, with a strong, waxed thread, through the projecting part of it. The intestine is then to be incised with a three or bistoury in order to evacuate its contents; this having been done, the sides of the incision in the intestine are to be fixed to those of the wound in the skin, by four or five points of suture; this is done to prevent effusion of the contents of the bowel into the cellular tissue of the wound, which might cause considerable irritation. When the patient is fat, the deeper incisions may be made in a crucial manner, in order to give more space. The different parts are cut through in the following order: Skin and superficial fascia, latissimus dorsi, external oblique, internal oblique and transversalis, the outer margin of the quadratus lumborum. Sometimes, the cellular and adipose
tissue which covers the intestine, and lastly the bowel itself. The vessels and nerves for the most part are parallel to the line of incision, and are seldom wounded.

Of the different operations that have been proposed, Amussats is probably the one to be preferred, as it has the advantage of not wounding the peritoneum, and the opening can readily be closed if the natural passage should be restored. Its depending position gives the faecal matter a ready passage; while the opening being placed at the posterior part of the body, would be less disagreeable to the patient and to others, than if it were in front.

It would appear however from the cases collected by Mr. Caesar Hawkins that, while the results are in favour of the operation external to the peritoneum on the right side, they are in favour of that through the peritoneum on the left. Mr. Hawkins therefore thinks, that, the inequality of the numbers leaves the question as to the descending colon still undecided; and that, each operator weighing the advantages and disadvantages of an artificial anus in front of the abdomen, and of one in the lumbar region, is, as yet, fairly justified in selecting whichever situation he thinks best.
consideration to the surgeon. Generally, when we have failed to overcome the obstacle by ordinary means, or when from the symptoms it is believed to exist in the great intestine and especially when the source of obstruction can be felt, it is clearly our duty to give the patient his only chance of life by performing the operation. In coming to this conclusion, we must also take into consideration, the immediate danger to life, the probability of the patient withstanding the shock, and his condition after its performance. Mr. Hawkins thinks it is reasonable to infer that the length of time during which the final obstruction has existed, is not so much to be taken as a criterion of danger from delay, as the frequency and urgency of previous attacks, and the severity of the existing symptoms; operations, he says, have proved successful after thirty, forty, and even fifty days constipation; while in other cases the patients have died, one whom the operation was performed as early as the ninth or tenth day.

The number of those who survive this operation is very small. Of forty-four patients who were operated on, and whose cases have been collected and analysed by Mr. Caesar Hawkins, only half survived the performance of the operation; and of 9 patients who recovered, at least 7 and probably 8 died of the further progress of the complaint for which the operation was
performed, having died of phthisis."

Nevertheless Mr. Hawkins does not think that the operation should on this account be abandoned. "For," he says, "the Tables show most clearly that the 22 patients who recovered were saved, for various periods, solely by the operation." The artificial anus frequently shows a great tendency to contract, and in order to counteract this, and keep the opening patent, a plug of wood or ivory should be worn by the patient. The feces are not readily discharged, generally requiring the aid of purgatives, and sometimes they must be broken down.

When from the nature of the symptoms the obstacle is believed to be seated in the small intestine, and other means have failed to remove it, it has been proposed to cut into the abdomen and relieve the obstructed bowel. This bold operation is different from that for artificial anus, as it offers no alternative between complete recovery and certain death. It is generally believed to have been first proposed by Paragoras of Cos. It was recommended by Barbette, and is stated by Bonetius to have been performed in the case of the Baroness Landt. It has been performed several times; the latest cases published being those treated by Dr. Bird, Mr. Hilton, and Mr. Dr.elt. As to the period when the operation should be performed
there is great difficulty and uncertainty, depending on our ignorance of the cause of obstruction. If we are certain that the obstacle was insuperable, we could proceed to operate at once; but this we cannot do, nature must have a fair trial, as the obstruction may after all give way in a few days. This difficulty is not lessened by the fact that gastrotomy has hitherto proved nearly as fatal as the disease for the cure of which it was performed. Still it is in many cases our last resource, and offers some hope of success though that is very faint. Gastrotomy may be performed in the following way: The room in which the patient lies should be well heated and he should be laid on a high table, his legs hanging over the end of it, so that the abdomen is fully exposed. After the bladder has been emptied, chloroform should be administered; and the operator standing between the legs of the patient, proceeds to make the incision through the abdominal wall. If the seat of obstruction can be discovered, the incision must be made directly over the place in a longitudinal direction; if no clue to its situation can be obtained, it must be made in the median line. It is to be continued through the abdominal wall till the peritoneum is reached, this membrane must be slit up with a probe-pointed bistoury, guided by the fingers of
the left hand. The distended coils of intestine which
will now protrude through the wound, must be carefully
drawn to one side and supported by an assistant, who
should press upon them with a soft towel, whilst
the surgeon goes in search of the obstruction. If this is
a hernial constriction he may divide the band which
causes the structure, or withdraw the constricted coil of
intestine from the aperture in the omentum or mesentery
into which it had slipped. If it be a case of twisted
bowel the gut must be untwisted. The intestines are
then to be returned, the wound closed by the continued
suture, and the application of strips of plaster. The patient
should then have his knees bent over a pillow, he should
be kept perfectly quiet, his diet should consist principally
of ice and barley water, and opium should be given.
Two cases in which this operation was performed, have
been published in the 30th and 31st volumes of the
Medico-Chirurgical Transactions. The first was treated
by Dr. Golding Bird and Mr. Hilton; after strangulation
had existed for fifteen days, permission was obtained to
perform the operation; the obstruction was found and
the intestine liberated; the patient died apparently of
exhaustion, having survived the operation nine hours.
The second case was treated by Mr. Druitt; the operation
was performed after the obstruction had existed for fourteen days, the bowel was relieved, but the patient afterwards sank from rupture of the intestine and effusion of its contents.

Notwithstanding this unfavourable result, it is evident that the cases fully justify the proceeding, and show how life may even be saved in this way. When our diagnosis becomes more certain, and we obtain clearer views of this subject, an operation may be performed at an earlier period, and probably with better success.