OBSERVATIONS
ON
INTESTINAL OBSTRUCTIONS,
DEPENDING ON INTERNAL CAUSES;
AND ON
THE MEANS TO BE EMPLOYED FOR THEIR RELIEF.

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Received Aug. 3rd—Read Nov. 9th, 1847.

At this advanced period in the history of medicine, it might reasonably be supposed that a disease must be either very insignificant in its consequences, or of very uncommon occurrence, if it have escaped very ample, and it may be sufficient, consideration; and no doubt the expectation would be usually realized. But there are diseases which are neither uncommon nor insignificant, and yet their history remains to be told: and of the number are obstructions of the bowels dependent on internal mechanical causes.

It is true that these affections have not entirely escaped notice; but since the Memoir of Hevin, confessedly very imperfect, no full consideration of the subject has been attempted, except in the Theses of Manoury and Bonnet, which are little known; and in our own country no author has devoted himself to the elucidation of the difficulties presented in the diagnosis and treatment of these diseases.

The personal experience of any man, however ample may have been his opportunities of observation, scarcely enables

him to comprehend fully the whole subject ; but the records of cases are now sufficiently extensive to justify me in endeavouring to place the question of diagnosis and of treatment upon some clearer basis than they at present possess ; and I trust the Society will feel that, in this attempt, I shall not be making an improper use of its time or its patience.

For the purpose of fairly considering these affections, it is necessary that I should clearly state, *First*, what I mean by intestinal obstructions dependent upon internal causes ; *Second*, I must inquire whether the symptoms by which they are characterized are so clearly marked as to make the diagnosis satisfactory ; *Third*, I must ascertain whether we can rely on ordinary means of treatment for their relief ; and if not, whether we are justified in having recourse to surgical operations, performed with a view either to remove the obstacle or to establish an artificial anus.

To discuss these questions properly, I have collected the histories of 169 cases of obstruction.

Of these I found 136 on record ; the remaining thirty-three are unpublished, but have been communicated to me by my friends, among whom I must particularise Dr. Hodgkin, or were observed by myself.

The amount of materials so collected is all I possess for the purposes of deducing rules of conduct in these cases, and I think it is enough ; and if the results are, in my hands, inconclusive, it will be owing either to the nature of the subject, or to my want of ability to make the necessary deductions from them ; and not to any want of materials for the purpose.

I comprehend under the term intestinal obstructions, all mechanical obstacles situated within the abdominal cavity, which, by their action upon the intestinal tube, intercept the course of faecal matter.

They may be caused by an accumulation of matter within the canal, which may act by choking up the tube, (the matter may be hardened faeces, biliary or other concretions, or morbid growth,) by invagination, by twisting, or by a con-

traction of the intestine itself; in consequence of morbid action; by causes acting from without the tube, such as tumours making pressure, or bands constricting the intestine; or by the constriction exercised through the agency of the unyielding edges of an abnormal opening.

It will, of course, be observed that my definition excludes one class of cases in which obstruction may be complete, and the symptoms may, up to a certain point, resemble the cases of obstruction I propose particularly to consider—I mean cases of disease of the cæcal appendix. Usually, however, these cases admit of a more certain diagnosis. There may be equally obstinate constipation, fæcal vomiting, anxious countenance, and abdominal pain; but as there is usually quite sufficient indication to direct attention to the right iliac fossa, and to make the diagnosis pretty clear, I think these cases should be considered apart.

Such obstructions as I have selected for consideration are by no means of uncommon occurrence. I have endeavoured to estimate their frequency, by appealing to the experience of persons who have accurately noted not only these but all cases which have come under their observation; and I think it useful to give the results, although they may be only an approximation to the truth.

Out of 500 post-mortem inspections made by Louis, he discovered them only three times. Dr. Boyd out of 908 inspections, observed them eight times; Mr. Paget out of 224 cases, saw two instances; Mr. Prescott Hewett out of 760 cases, observed nine instances of obstruction. In all 2,392 cases, and twenty-two instances of obstruction. It would seem, therefore, that such obstructions are observed once out of every 100 post-mortem inspections.

Of the causes of obstruction which I have mentioned, it is difficult to say which occurs most frequently; but supposing recorded cases to represent fairly the relative frequency of each, then invagination, as compared with any other single cause, would occupy the first place.

Of the 169 cases which constitute the foundation of my

remarks, sixty-three were instances of invagination, sixteen were caused by the pressure of tumours from without, nineteen were the results of stricture from disease of the parietes, eleven were the result of intra-intestinal tumours, hardened fæces or concretions, and sixty were caused either by constriction, by bands, by adhesion, by the passage of the intestine through some abnormal opening, or by a twisting of the intestine upon itself.

The ordinary signs of intestinal obstructions are often, simply, constipation with more or less discomfort of the stomach and abdomen; and these symptoms may be quickly relieved. When the obstruction is more obstinate, these symptoms may be more severe; there may be vomiting, and the matter ejected may even become of a fæcal character, and in many instances relief, by ordinary means, may still be obtained, though with more difficulty. When the obstruction is caused by a mechanical and unyielding agent, the same train of symptoms may be manifested, and they become more severe in proportion to their duration. The countenance assumes an expression of anxiety, the heart's action is quickened, the breathing is more hurried, and there is great prostration and want of sleep, but the intellectual faculties are unimpaired. In the grouping of these symptoms there is, however, much variety.

Thus the *pain* may come on suddenly and with great violence, or there may have been occasional uneasiness or pain, with or without other signs, for months or even years. It may be diffused over much of the abdominal cavity, or it may be confined to a particular point, but at an advanced period of the disease the whole cavity usually becomes tender or painful. The pain is sometimes continuous, but there are usually paroxysms of more or less severity; still there may be no considerable abdominal pain through the whole progress of the disease up to the death of the patient, although that may be brought about within twenty-four hours. Instances of the kind are mentioned by Morgagni, by Fleury, by Spry, and others.

The *constipation* is usually complete; but there are some cases of invagination where small stools, containing an admixture of sanguineous mucus and faecal matter, are passed, and tenesmus is sometimes present. The other cases of obstruction are rarely accompanied by any other stools than those which may be procured by washing out the large intestines.

Vomiting is not frequently absent in these cases; and it commonly proceeds until the vomited matter acquires a faecal character; but I find that in several of the recorded cases, and in two instances which have come within my own observation, the sickness was not a distressing symptom, neither did it end in faecal vomiting. In many instances it does not appear to have occasioned severe suffering.

The same may be said of the *abdominal tension*; it is usually great, and, to the patient, a very distressing symptom; but there are many cases of obstruction, from various causes, in which the abdomen was comparatively flat.

These signs may be observed, in all their completeness and intensity, in any case of intestinal obstruction, no matter how it is caused. But as it is desirable, as far as possible, to determine the cause of obstruction, because it may influence our plan of proceeding as to treatment, we must endeavour to ascertain whether the particular cause of obstruction is indicated by any particular modification of the symptoms I have described.

It seems to me, then, desirable to preface my description by a cursory detail of the more prominent symptoms which were presented in cases of the several varieties of obstruction which I have described, because they will illustrate the similarity of the symptoms produced, and the difficulty of establishing the differential diagnosis of the disease.

For the following interesting case of ileus, I am indebted to Dr. Todd.

Mr. I., a solicitor, aged 45, of temperate and active habits, was subject to constipated bowels, for which he was in the habit of taking an aloetic pill daily. On Wednesday evening, June 30, having some friends with him, he took a little brandy

and water (which always disagreed with him). On Thursday morning he awoke in a rigor, and with a feeling of uneasiness in the lower part of the abdomen, which soon became painful. He was bled from the arm, leeches on the abdomen, had fomentations, had calomel and opium, black draught, ol. ricini, &c., but without any relief. At three o'clock on the morning of the 2nd of July, Dr. Todd saw him, and found him in great agony; the abdomen was very tympanitic and extremely tender to the touch, sonorous on percussion on the epigastrium, but dull in the pubic and hypogastric regions: the voice was tremulous, the breathing was quick, and the face anxious. There had been no motion nor urine for twenty-four hours: no vomiting except once after a black draught. Pulse 120, feeble; the extremities were becoming cold; the intellect was clear. He was ordered to take opium largely, and nourishment. Six hours afterwards he died without any alteration in the symptoms.

Post-mortem, July 3.—The peritoneum was of a leaden colour with patches of redness: there was a small quantity of turbid serum in the pelvis; there were a few flakes of soft lymph on the small intestines. The last foot and a half of the small intestines was healthy, empty, and contracted. All the small intestines above that was very much dilated and filled with liquid fæces. The stomach was likewise much dilated and filled with liquid. The transition from the dilated to the contracted portion was abrupt and sudden, and there was no mark of external constriction or compression of any kind. The mucous membrane of the intestine was slightly red, but afforded no evidence of inflammation. The muscular coat had a dusky hue.

The *second* case I shall detail is one of obstruction by a biliary calculus; it occurred in the practice of Dr. Watson, and is thus described:—

“Very lately I attended an elderly lady who, from Wednesday morning to the next Monday noon, had had no alvine relief, notwithstanding the employment of the most active cathartics. She suffered frequent paroxysms of pain and vo-

miting, but the abdomen was scarcely, if at all, distended, nor was it tender. At length she complained that what she vomited was stercoraceous,—to use her own words, ‘ what came upwards ought to have passed the other way.’ It was a thin, brown, ill-smelling fluid. Dr. Mayo and Mr. Arnott were now associated with me in this case, and they touched and felt the abdomen, as I had previously done. The lady observed that their hands were rather heavy, and she fancied the pressure they made had displaced something within. And I believe that it was so; for before our consultation in the next room was over, word was brought us that the bowels had acted. She had passed a liquid motion, precisely resembling the stuff she had last vomited. The next day, with one of several similar stools, a hard lump was voided, which proved to be a gall stone, as big as a walnut. It had probably been impacted higher up.”

The *third* case was the result of the accumulation of fæcal matter, and is described by De la Martiniere.

A young man of 18 or 20 wishing to put an end to an obstinate diarrhœa, ate a quantity of hard eggs. Obstinate constipation followed, and resisted all remedies. The patient had all the symptoms of volvulus,—sickness, constipation, abdominal pain, and tension. He was bled, and purgatives of various kinds were administered, but without effect; the urgency of the symptoms increased, and the vomited matter became fæcal. Quicksilver was administered. The fæcal vomiting persisted, and he died some days afterwards. The intestines were prodigiously distended between the stomach and a column of hardened fæces which was impacted in the jejunum.

The *fourth* is a case of obstruction caused by intra-intestinal tumour; it occurred to Mr. Allen, from whose notes it is transcribed.

A. R., aged 38, was seen Feb. 3: she complained of pain in the region of the stomach, with constipation. He ordered her to take hyd. chlor. c. opio, to be followed by castor oil. The next day she was much worse; the bowels had not acted;

there was vomiting of a green fetid matter, and pain on pressure. Ordered that fifteen leeches should be applied upon the abdomen. Calomel and opium every six hours, to be followed by enemas.

5th.—Vomiting continues; constipation and tenderness persist. Pulse 90. Ordered to have more leeches, hydrocyanic acid, &c.

6th.—The pain is more intense and in paroxysms; she is much troubled with flatus. Ordered VS. ad 3xij.

7th.—She has passed an easier night, and has not vomited since the last visit. In the evening the severe pain returned, and extended over the whole abdomen, and was followed by much fæcal vomiting. Ordered Rep. VS.

8th.—The vomiting continues; the strength is failing. Ordered ʒvj. brandy with beef-tea daily. The gums are spongy from mercury.

9th.—Fæcal vomiting continues. It persisted till the 20th; on that day the enema brought away a quantity of thin fæculent matter. The injections brought away more on the 21st and the 22nd; on the 23rd the bowels acted without assistance; the vomiting was less frequent, and she was much improved; but there was still occasional vomiting.

On the 9th of March, whilst sitting up in bed, she felt something give way in the abdomen, and died in fourteen hours.

Upon inspecting the abdomen, a large quantity of thin frothy fæcal matter was found in the cavity. A small rupture was found in the lower part of the jejunum; about sixteen inches of that intestine was in a gangrenous state. Below the rupture the intestine was occupied by a solid fibrous fleshy body about three inches in length. It was connected with the mucous coat by a very narrow neck. It had produced some invagination.

The *fifth* case was a malignant contraction of the colon.

H. C., aged 36, was Resident Medical Officer to the St. Marylebone Infirmary; he was subject to frequent irregularities in the functions of the intestines, and had been the

subject of fistula in ano. I was suddenly summoned to see him late one evening ; he had a basin at his side, in which there was probably a pint of unequivocal fæcal matter, which he had vomited a few minutes before. He said, that after dinner he felt there was something wrong about the stomach ; nausea came on, followed by vomiting. He first threw up the food he had taken at dinner, and, soon after, what there was in the basin.

Some nausea continued ; the abdomen was tense and tender ; and there had been complete obstruction for thirty-six hours. He took immediately hyd. chlor. gr. x. opii gr. j. ; and it was ordered that an enema containing beef-tea and olive oil, of each half a pint, should be thrown up every four hours. In the course of the next day the bowels were copiously relieved. All the unpleasant symptoms quickly subsided, and he was apparently convalescent. On the evening of the second day, at night fall, he most imprudently walked out, and felt chilled. In the course of the night very urgent symptoms returned ; the constipation was complete ; the sickness was incessant ; the abdomen was sore and tense. On this occasion all means failed, and he died. Upon examination, a malignant contraction was found at the angle formed by the transverse and descending colon ; it barely allowed of the passage of a number eight bougie.

The *sixth* was a case of malignant tumour, pressing upon the colon from without the tube.

D. C., aged 73, suffered for some years from irregularity of the bowels. On the occasion of my seeing him, he had been constipated for forty-eight hours, and the usual means of relief had failed. There was much abdominal uneasiness and considerable tension, but no sickness. The ordinary cathartics were used by the mouth and the rectum, for thirty-six hours, without overcoming the constipation. The abdominal tension had become very great,—there was much distress of the stomach, with vomiting of fæcal matter, and hiccup. It was now determined to rely upon mercury externally and internally, and beef-tea injections. Calomel and opium were

given three times a-day, and mercurial ointment was rubbed over the abdomen morning and evening. Within thirty-six hours from the time of commencing this treatment, the bowels began to act, and within a fortnight he was able to leave town. In a few weeks he returned, and suffered a relapse. The same means were employed, but without effect: he died on the sixth day. The post-mortem inspection revealed the cause of mischief, a malignant tumour pressing upon the descending colon.

The *seventh* was a case of invagination.

A man aged 29, of delicate constitution, was brought into hospital suffering from acute pain in the abdomen, which was not increased by pressure; the abdominal muscles were contracted and rigid, there was no tension, nor appreciable tumour, the face was pale and anxious. The pulse was small but not frequent. There was nothing wrong about the head or the chest, and there was no hernia. He was attacked suddenly on the morning of that day with pain and vomiting. The sickness had abated during the day, but the pain continued. There was obstinate constipation. Sedatives were administered by the stomach and the rectum, and cataplasms were applied upon the abdomen. The pain increased and the vomiting returned, the abdominal tension became more distressing, the anxiety greater, the eyes sunken, the pulse more frequent. The symptoms became hourly more severe; on the fifth day the vomiting became faecal, and on the tenth day he died. There was peritonitis, and invagination of the ilium in the cæcum and colon.

The *eighth* was a case of constriction by bands.

A man 36 years old was brought into the general hospital with the following symptoms: violent pain and tension of the abdomen, tenderness on pressure, thirst and vomiting, cold skin, small quick thready pulse. He attributed the attack to a cold caught by sitting on the grass. The symptoms abated under treatment, but on the fifth day they returned with violence, accompanied by obstinate constipation and faecal vomiting. He died on the ninth day after admission.

Post-mortem inspection revealed extensive peritonitis. A membranous band, $2\frac{1}{2}$ inches long and half an inch broad, extended from the anterior surface of the mesentery as a kind of loop: through it a portion of ilium passed and was strangulated. Above the strangulation the tube was distended and inflamed, below it was pale and contracted.

The following case is the *ninth*, and was caused by the passage of the intestine through an abnormal opening: it is stated more at length than the others, because the circumstances are sufficiently remarkable to warrant it.

On Saturday the 7th of May, I was requested to proceed immediately to the Court of Queen's Bench, to see a gentleman who was suddenly taken ill. I arrived there shortly after he had been carried into one of the upper rooms. I found him lying on the carpet doubled up, and suffering from most excruciating pains, occurring in paroxysms, and affecting principally the right side of the abdomen, but it was most severe under the liver and toward the umbilicus. He could bear firm pressure on the part without any aggravation of pain, rather a diminution.

The account he gave of himself was, that he had left home that morning quite well; that he was engaged up to past one o'clock in the duties of his office, sitting down with papers before him; that he was suddenly seized with the pain while thus occupied, and that it quickly acquired its greatest intensity; that it was at first accompanied by nausea, and that the bowels were at the same time slightly moved.

Taking into account the kind of pain, the suddenness of its occurrence, its seat, a yellowishness of the conjunctiva, the state of the pulse (52) and of the abdomen, and the fact that on several occasions pains similar in kind, though less severe, had occurred to him and disappeared within half an hour, I came to the conclusion that the pain was probably occasioned by the passage of a gall-stone, and that the best present remedy was a dose of opium; it was sent for and administered. I desired that if, in the course of half an hour, the pain was sufficiently abated, he should be conveyed home

and have a warm-bath ; if not, that the opiate draught should be repeated.

At five o'clock I saw him at his own house. I found that the second draught had been necessary, and that the severity of the pain had greatly abated. Before six o'clock he was in the bath, and expressed himself as being greatly comforted by it. When taken out of the bath, all he complained of was a diffused soreness extending over the whole abdomen. The pulse was 54, and less laboured than when I first saw him ; the complexion yellower.

At seven o'clock he took hydr. chlor. gr. xiiij. opii gr. j. It was followed in three hours by the following draught : ol. ricini ꝑvj. vitel. ovi q. s. tinct. sennæ co. ꝑij. aq. menthæ q. s. ut fiat haustus.

At ten o'clock I saw him again ; there was no material change in any respect ; there had been slight sickness, three times within an hour soon after he had taken the pills, but there was no action upon the bowels ; pulse 54.

At half-past seven o'clock on Sunday morning I saw him. The night had been free from violent pain, and there had been no sickness ; there had been uneasiness, but not enough to prevent him from occasionally dosing. The soreness of the abdomen was somewhat increased, and there was a rigidity of the parietes ; still he could bear, without complaint, firm pressure ; the tongue was more coated than on the previous night, and the pulse was 106. I ordered a draught of tartrate of potash and infusion of senna, which was taken at eight o'clock.

At eleven o'clock there was no material change ; no action upon the bowels, no sickness, but there was more tympanitis ; pulse 120. A castor oil enema was administered ; it was retained for half an hour, but it brought nothing away with it.

At three o'clock Dr. Watson saw him with me. There was no nausea ; the tympanitis had increased ; the abdomen was very tense ; the tenderness on pressure was not considerable ; the contour of a distended portion of intestine was distinctly evident on the right side ; the pulse was

150, and weak ; the tongue was coated, and the features were pinched.

The impression now was, that whatever had caused the intense initiatory pain, it was probable that there was at present some internal intestinal strangulation.

It was directed that he should have a large warm-water injection, fomentations to the abdomen, and in the event of pain increasing on the right side, that leeches should be applied :—besides those means, he was to take ext. coloc. co. gr. v. 4th horis.

The warm-water injection was given, but he could not bear more than a pint, and it brought away nothing with it. The colocynth was taken, and it occasioned no nausea. A mustard poultice was laid upon the abdomen, and supported for an hour with comfort to the patient.

About five o'clock, instead of leeches it became necessary to administer brandy, the pulse having become weak, and failing ; the stimulus was continued from that time, but he never rallied ; and he died, without any change in the symptoms, about ten o'clock,—thirty-three hours from the occurrence of the first symptoms.

His mental faculties were preserved in all their integrity to the last. Five minutes before his death, a clergyman, who had been requested to attend for the purpose of administering the Sacrament to him, came to his bedside, when the patient observed that it was too late, and he immediately died without the slightest struggle.

It was clearly desirable, in this case, that a post-mortem examination should be had, and to it the friends made no objection. It was then arranged that it should be made on the next morning between eight and nine o'clock. When I went to the house for the purpose of proceeding with it, one of the friends suggested that it might be said we were too precipitate, that he was scarcely cold. With such an idea existing, I said it would be better to defer the inspection until the succeeding morning. This was done, and certainly we had cause to regret the delay. Although the death occurred only thirty-four hours before the examination was made, and

although only sixty hours before, he was apparently in good health, decomposition was greatly advanced.

The abdomen was enormously distended, the scrotum was as large as a child's head, the surface of the trunk was covered by very large vesicles containing a dark-coloured and very offensive fluid, and a good deal of dark bloody fluid had escaped from the mouth and nose. The cellular tissue was so distended with gas, that as soon as an incision was made through the skin, it escaped with a loud hissing noise.

When an opening was made into the abdominal cavity a good deal of dark fluid blood escaped, and probably six or eight ounces remained in the pelvic cavity. The intestines were so distended that they could not be kept within the abdomen. A portion of intestine on the right side, not thus distended, but gangrenous in appearance, left no doubt that there must be strangulation somewhere. Upon turning up the small intestines, it was at once evident that a portion of the ilium had passed through the right side of the mesentery. Careful observation was made at this point, and a very small opening was apparent, with an extremely dense margin; through this about eight inches of the ilium had passed and become strangulated. The opening was so small that the point of the little finger could not have been admitted if the intestine had been absent, and much difficulty was experienced in getting a common director to pass through it, by the side of the gut, and when there, several cuts with a sharp knife were necessary to liberate the intestine.

The state of the body made it prudent not to pursue the investigation any further, especially as the cause of death was so clearly made out.

The peculiarities of this case were, the sudden violence with which the attack commenced, the subsequent absence of those symptoms by which strangulation of intestines is commonly characterized, and the rapid termination of the disease in the death of the patient. On the day previous to the occurrence of the attack, the bowels had been copiously relieved by a five-grain pill composed of colocynth and blue pill.

The patient described himself as leaving home quite well on the morning of the attack, and walking down to Westminster Hall, where he continued discharging his official duties until the moment when his suffering commenced. Now did the severe pain mark the moment of the intestine passing through the mesentery, or did it mark the passage of a gall-stone? and was the intestine forced through the mesentery during the writhing and agony consequent upon the passage of a biliary calculus? No gall-stone was found, and therefore the question remains open. It is true that there are many cases of external hernia where the stricture was very tight, and where agonizing pain was quickly developed; it is true that in some of the cases on record of internal strangulation, violent suffering has occurred suddenly, and therefore the urgency of the first symptoms do not constitute a sufficient reason for believing that, strange though it be, the intestine may not have been protruded through the opening at the moment the pain came on, and the patient at rest; but the opening was so small that it seems scarcely possible to have happened in this case. In La Fayette's case there was no sensible inconvenience until the excessive pain occurred, and yet the patient was dead within thirty-six hours. The case in many respects resembles our own, and there are on record others not unlike it.

Whatever explanation may be adopted, I apprehend the question of gastrotomy could hardly have been entertained in that case.

The impression which must be produced by reading the preceding cases is this, that, no matter what may be the cause of the obstruction, no certain remarkable difference is observed in the more prominent symptoms by which it is accompanied. There are in all abdominal pain, abdominal tension, obstinate constipation, and sickness; but in the mode of their occurrence it would be difficult to point out any distinct difference. Thus constipation, abdominal pain or uneasiness, with tension, and sickness of the stomach, are present, in greater or less intensity, in most cases, but there

is no certain and definite line to be drawn, either as to the time at which they occur, or the severity with which they are ushered in, whether the obstacle be a biliary calculus or a band of false membrane.

The constipation may have the same general characters, whether the obstruction be caused by hardened fæces, by a contraction depending upon ulceration or other disease, by bands or by tumours: this is certain. It is true that some cases of invagination are accompanied by diarrhœa or by dysentery, but in the great majority of cases the constipation is complete.

The same may be said of sickness; it is usually a very distressing symptom, and ends in fæcal vomiting: but it may be as obstinate in a case of invagination, as in a case of tight strangulation of the ilium by bands. It may be as urgent, and the vomited matter may as soon assume a fæcal character, in a case of invagination, as in a case of the passage of the intestine through an abnormal opening. The abdominal tension is often excessive, but there are on record many fatal cases, where it was not so great as to occasion the patient much distress; and in some instances the abdomen has been quite flat, and, no matter what the obstructing cause may be, the gaseous distention of the intestine may equally take place, and with equal intensity.

Taking the symptoms altogether, it is true that when the obstruction is complete and suddenly developed, they are usually more urgent than when it is slowly produced; but there are cases in which the obstruction has terminated life, within forty-eight hours, without much sickness or severe pain. In cases of invagination, or where a tumour gradually encroaches upon the calibre of the tube, where the canal becomes contracted by change of structure, the pain does not commonly, even up to a late period, exhibit so much intensity as in the former case. But I say again, that we cannot with confidence rely upon these distinctions, the exceptions are so many.

For some time I had hoped that by arranging the cases in

small groups the symptoms might be made to assume a more characteristic form ; but I found that distressing sickness, severe pain and abdominal tension might be present or absent in any case, no matter what may have been the cause of obstruction : that life might be extended as long in a case where the intestine passed through an unnatural opening, as in a case of gradual malignant contraction.

It is of course desirable to know the *seat* of the obstruction ; but we shall be unable to obtain that knowledge in many cases. There are, however, certain means which we must not lose sight of, which will materially assist us in coming to a conclusion : there are others, upon which some persons rely, which will prove only broken reeds. Thus it is said that the vomiting and pains are more severe when the obstruction occurs in the small than in the large intestines, and I think there is some truth in the remark ; but, after an anxious consideration of the cases before me, I find the exceptions to the rule so many, that I do not think we can safely rely on it. It has also been said that much assistance may be derived from observing the condition of the urinary secretion ; that if it be copious, the obstacle must be far removed from the stomach, and *vice versâ* ; but the exceptions to this rule are also many.

Laugier thought that by a careful examination of the distended convolutions of intestine, much assistance might be derived in determining the seat of the obstruction ; and to a certain extent he is right : but in some cases the distention is trifling, and in all cases the examination must be made before the general abdominal tension is considerable, or it may be difficult to profit by it. There are many cases in which a careful examination of the distended intestines will afford most important assistance, in determining the seat of the obstruction. It is true that in a case where the ilium is obstructed near its termination, the jejunum and the ilium may be so much distended, that it may seem difficult to determine whether the distention affects them or the descending colon ; but the absence of distention of the ascend-

ing and transverse colon will go far to remove the obscurity, especially when assisted by an exploration, by means of a long tube, per rectum. There are, certainly, cases in which we may satisfactorily follow a distended intestine up to the point of obstruction, but there are many more in which this sign will fail us. However, it has been found useful in diagnosis, and we must take it for what it is worth. In Mr. Luke's case, described hereafter, he found the colon distended down to the sigmoid flexure, and that fact, added to the impossibility of passing a tube far up the rectum, or throwing up much fluid, left little doubt on his mind that the lower part of the colon was the seat of the obstruction; and he was right.

It must, however, be borne in mind, with reference to the tube, that it may produce an error in diagnosis: it may reach the obstruction and then be bent back upon itself; this has happened in my own experience and also in that of Mr. Luke.

Still the history of the case, the particular seat of pain, the occasional existence of a tumour, which is now and then detected in cases of invagination, and indeed in some other cases, before there is much abdominal tension, the distended convolutions, the long tube and the injection, will usually afford us most important assistance in coming to a conclusion, as to the seat of the obstruction. At the same time, it is certain that in the experience of the ablest men they have failed.

The diagnosis being at best but uncertain,—though it may be sufficiently conclusive to justify us in acting upon it,—it is proper to inquire into the results of the treatment usually employed, because, if those results be not very unfavourable, the doubtful diagnosis, and the gravity of operations performed upon the abdominal cavity, might stand in the way of our having recourse to them.

Certainly in a large number of these cases the symptoms are aggravated by the drastic treatment employed for the purpose of overcoming the obstruction; and although I admit that Croton oil and such irritants have occasionally succeeded

in relieving the obstruction, in most cases I am confident they have left matters worse than they found them. Opium and blood-letting have in many cases allayed irritation and spasm, and Calomel given, at the same time, in large doses, has sometimes seemed to exercise a happy influence over the obstruction, and not least in those cases where its appropriate action has been excited in the system. Associated with such means, enemata, of various kinds and quantities, frequently repeated, are most valuable.

Of the cases to which I have referred, 169 in number, and subjected to various modes of treatment, certainly 133 terminated fatally. If they constitute a fair average of the results of such cases, I apprehend there can be no doubt that where a disease terminates fatally under ordinary treatment, in seven cases out of nine, it will be granted that it is proper to entertain the question, whether a better chance of life be afforded by surgical operation. It must be understood, however, that I do not insist upon that average of results as being absolutely correct; but it was the only means I possessed for obtaining data on a large scale in severe cases, and it is at all events an approximation to the truth, for I apprehend that most of the severe cases which have been successfully treated have found a record. There is no doubt that a large number of cases of obstinate constipation do yield to ordinary treatment, but it is probable that in many of those cases the obstruction did not depend on mechanical causes at all.

Before I express my own opinion, or the data on which it is formed, as to the expediency of having recourse to surgical operations for the relief of intestinal obstructions, I will shortly refer to those of several men who have carefully considered the subject.

Hevin concludes his Memoir* by saying—"How are we to remedy those cases in which the symptoms may be so similar, the causes so different, and which, though so formidable,

* Mem. de l'Académie de Chirurg., tome iv. p. 201.

present no positive sign to mark the nature of the cause, or the situation which it occupies? It is clearly out of the domain of operative surgery." At a later period, he says that if a band could be detected it would clearly prescribe gastrotomy, because the section of the band may save life: but, he adds, unfortunately we cannot distinguish it by any certain sign.

Mensching said, "that in the uncertainty of our diagnosis, few men could be found so little jealous of their reputation, and having so little scruples of conscience, as to dare to perform an operation which must expose the patient to so much danger."

Manoury, who applied himself with much success to this question, says,*—"The operation of gastrotomy is sometimes indicated; it should be performed before the inflammation is considerable: the incision ought to be made as near as possible to the point where we suspect the strangulation to exist." "If the operator does not find the seat of strangulation, or if this strangulation be of a nature which cannot be removed by operation, it may be convenient to establish an artificial anus, by opening the intestine, between the stomach and the point of strangulation."

Bonnet says,†—"After having witnessed the miserable end of persons who were the subjects of those obstructions, the autopsies have convinced me that an operation might have saved life. I have sought and found cases favourable to my opinion, many which are in opposition to it, still more which were not worthy of confidence. I have seen cases in which an operation ought to have succeeded. I do not dissimulate the gravity of the question that I have raised, and which should only be resolved by experienced surgeons. And if in the eighty years that have passed since Hevin wrote his Memoir, surgery, anatomy and pathology had remained stationary, I should have abstained from agitating the question; but it is not by eluding a difficulty that we surmount it."

Otto says,‡—"At the commencement of the disease,

* Thèse de Paris, 1819.

† Thèse de Paris, 1830.

‡ *Prax. Med.*, Part 2, p. 13.

when the powers of life are in all their integrity, there is no reasonable surgeon who would decide upon such an operation, so many means ought to be employed before recurring to such an extreme measure. But in the event of all remedies being fruitless, the operation must have a very doubtful value, for of two things, one will happen,—either the powers of life will be so exhausted, that the patient will be unable to bear up against the consequences of the operation; or, the intestines may have become almost gangrenous: so that, in one or the other supposition, the patient's life will be lost."

Boyer says, in reference to this operation,*—"If we consider, 1st, that ileus may be the effect of a great number of causes; 2nd, that the symptoms being nearly always the same, whatever may be the cause of the constipation, it is impossible to determine, in each particular case, the cause of the disease; 3rd, that supposing even we could determine the cause, there is no index to mark the precise seat of the disease, and that, to discover it, a search is necessary, which is pregnant with great danger; 4th, that in invagination, the inflammation which is commonly set up determines adhesions, which render the disengagement difficult, if not impossible;—if we consider all the circumstances, we shall be convinced that there must be temerity in resorting to gastrotomy; and what I said of volvulus applies, without any restriction, to another species of intestinal strangulation which has been many times observed, and which is formed sometimes by bridles acting like ligatures, sometimes by an abnormal opening in the mesentery in which a portion of intestine is implicated."

Dupuytren says,†—"Internal strangulations have no fixed seat; their formation is independent of any constant organic disposition. The circumstances of their development are accidental and very variable; nothing sufficiently marks the interception by an obstacle capable of being removed, from that which is irremediable by operation. Their symp-

* *Traité des Maladies Chir.*, t. vii. p. 491.

† Sabatier, *Med. Operatoire*, par Begin et Sanson, t. iii. p. 503.

toms are not defined, and are therefore doubtful, and the means to be used by the surgeon for their relief are inefficacious or dangerous."

Our experience of operations upon the abdominal cavity for the relief of obstructions is now, I think, sufficiently large to justify us, from the results, in adopting some rule of conduct; and the fact of the great probability of loss of life under ordinary treatment, the comparatively successful results of operations upon the abdominal cavity in modern surgery, and our experience of surgical interference in cases of obstruction, may, though in opposition to some of the foregoing opinions, seem to warrant a recourse to gastrotomy, when the diagnosis is sufficiently clear.

Let us now see what that experience is. It extends to fifty-three cases. In twenty-six instances gastrotomy was performed on infants, for the purpose of establishing an artificial anus, the natural passage being imperforate. In twenty-seven instances the operation was performed upon adults, for various kinds of obstructions. I will describe in detail those cases which are either little known or unpublished, and will merely refer by name to those which are better known.

It is stated by some persons, but without any clear proof of the occurrence, that Praxagoras performed, or at least recommended, the operation of gastrotomy in a case of obstruction. That he did not perform it, is pretty clear. Whether or not he proposed it, depends upon the sense in which we accept the following expression, in Cœlius Aurelianus :*—"Vomitu utitur donec stercora faciat evomi. Aliquos etiam post vomitum phlebotomat, et vento per podicem replet." "Item confectis quibusdam supradictis adjutoriis, *dividendum ventrem* probat pubetenus." Le Clerc and Clifton believed that gastrotomy is here clearly indicated. Hevin and Haller concluded that the passage refers to the common operation for hernia.

Whatever may be thought of the passages from Cœlius

* Acuter Morbex, lib. iii. cap. 17, p. 244.

Aurelianus, one from Barbette* presents no such ambiguity :—"An non etiam præstaret, facta dissectione musculorum et peritonæi, digitis susceptum intestinum extrahere, quam certæ morti ægrotantem committere."

Bonetus,† in referring to Barbette, appends the following note, to prove that Barbette's recommendation had been carried into effect :—"Illustr. Baronissa a Lanti prope Castilionem ad Sequanam in Burgundiæ ducatu iliaco affectu laborans, pro deplorata habebatur. Offert se juvenis chirurgus diu castra secutus qui salutem certam pollicetur, modo nobilis ægra sectioni in abdomine faciendæ se submittat, concessam aggreditur chirurgus, multisque adductis et evolutis intestinis antequam convolutio et contortuplicatio appareret eam nactas explicat, et nodos dissolvit, post modum sedi restituit; hinc gastraphia facta, vulnus felicissimo successu consolidavit, integræque valetudini nobilem restituit; quæ sospitali suo stipendium annum constituit, cujus usura per triennium tantum frui licuit supervixit enim matrona."

Doubts have been thrown on the nature of the operation performed in that case. It was not seen by Bonetus, but it was communicated to him by the Rev. Mr. Pinault, a minister of the Genevese Church, who lived on terms of intimacy with the lady; and it is made matter of question whether the operation was not an ordinary one for strangulated hernia; but I think those who doubt are here rather sceptical.

The case detailed by Velse, and authenticated by Oosterdykius Schacht, is too clear to admit of any doubt :—"A woman, aged 50, exhausted by the suffering from ileus, deriving no relief from the various remedies employed, Nuck, who was consulted, pronounced the case to be one of intussusception, and requested an able surgeon to make an opening on the left side of the abdomen, at four fingers' breadth from the umbilicus, and in a direction obliquely

* Oper. Chirurgico Anat., 1672, de Abdom. partib. inter., pars iii. lib. iv. p. 144.

† Sepulchretum Anatomicum, lib. iii. sect. 14, p. 228, de dolore iliaco.

downwards and outwards. The intestines were drawn out and fomented with warm milk, while search was made for the invagination. It was found, and gently withdrawn. The intestines were then returned, the opening was closed by sutures, and the lady survived the operation twenty years."

Manoury* mentions the case of a man, aged 57, who, after eating three pounds of cherries, stones and all, experienced, during the night, severe pain in the right iliac fossa, with incessant vomiting. There was obstinate constipation; the belly was tumid; the vomiting became fecal. Operation was determined on. An incision was made in the linea alba. Great adhesions were found, and, from the right iliac fossa, purulent matter escaped. The obstruction was not discovered, and the patient died. Upon examination after death, it was found that the obstruction was caused by a band stretching from the mesentery to the cæcum, under which a portion of ilium passed, and became strangulated.

Fuschiust† describes the following case:—The patient, a man of 28, experienced sudden violent pain on the right side, a little below the umbilicus. Vomiting came on; there was obstinate constipation. The belly was not tumid, but a tumour could be felt where the pain was most severe. An operation was proposed and performed. Invagination was quickly discovered, the intestine was disengaged, and the patient recovered.

Recamier's case presented all the usual signs of obstruction; the greatest amount of pain was in the right iliac fossa. An operation was determined on, and Dupuytren was requested to perform it. He thought the incision through the abdominal walls should be made on the right side. Recamier insisted that it should be made on the left. The operation was performed accordingly. Search was made for the obstruction; the adhesions were extensive, and, when the hand was passed towards the right iliac fossa, pus gushed

* Thèse de Paris, 1819.

† Journal der Pratischen Heilkunde, 1825.

out. The operation was not proceeded with ; the obstruction was not found ; the wound was closed ; and the patient died. Upon examination after death, a portion of small intestine was found twisted around a band extending from the mesentery to the cæcum.*

In 1833, Reybard was requested to see a man, aged 28, who had had a suffering life for many years. During the previous six months his sufferings had increased. He had severe lancinating pain, extending into the left hypogastric region. The abdomen was enormously distended. By a careful examination he discovered a hard and apparently moveable tumour, as large as an apple, in the left iliac fossa. The distended colon could be distinctly followed. There were constant eructations, and the evacuations were very small and unfrequent, of a puro-sanguinolent character, and accompanied by tenesmus. Enemas could not be retained. An exploration was made by the rectum, by means of the finger, but no tumour was detected. Reybard satisfied himself that the tumour, which could be felt, was probably carcinomatous, and that it occupied the sigmoid flexure of the colon. He advised an operation, and the patient submitted to it. An incision, six inches long, was made, parallel to, and an inch and a half above the crest of the ilium. The peritoneum was opened to the extent of three inches. The tumour was found to implicate the intestine. It was removed with three inches of intestine ; and the ends were carefully brought together by sutures. Everything went on well until the fifth day, when the abdomen became tympanitic ; the lips of the wound were dragged apart by the tension. Under leeches and poultices the suffering abated. On the seventh day he was much better, but there had been no stool. On the tenth day, after an enema, the patient had a stool. Thirty-eight days after the operation he took solid food, had natural stools, and the cicatrization of the wound was complete. In six months, there was a return of lancinating pain, there was

* It is doubtful whether this description and that of Manoury do not apply to the same case.

a reproduction of the tumour, and he died about twelve months after the operation. The body was not examined after death.

In the "American Journal of the Medical Sciences"* are the following cases—one by Mr. Manlove, the other by Dr. Wilson:—

Mr. Manlove's patient was a boy aged seventeen, who had suffered from obstinate constipation for twelve or fifteen days. There was vomiting; the abdomen was enormously distended; the extremities were cold, and the pulse was feeble. An incision was made on the median line; it extended nearly five inches. Extensive adhesions were immediately perceived. The intestine was punctured, apparently unwittingly. No further search was made for the obstruction, and an artificial anus was established. Fæcal matter passed freely from the wound until the seventeenth day, when it took its natural course, and the patient recovered.

Dr. Wilson's case was a negro man. He had obstinate constipation and vomiting, with the usual signs of obstruction. Dr. Wilson concluded that there was invagination. An incision was made, and the intestines were pulled out until the obstruction was discovered. At a point in the ilium an invagination, to the extent of an inch, was found; it was disengaged with some difficulty, and the patient recovered.

Monod's case† was a woman, aged 25. Some time before she came under treatment she had received a blow upon the abdomen in the ilio-cæcal region. There were constipation and pain in the neighbourhood of the right iliac fossa, and a large hard tumour was discovered there; and after some time vomiting came on. The vomited matter soon acquired a fæcal character, and the other symptoms became very urgent. Gastrotomy was determined on. An incision was made at the point where the tumour was found. A dis-

* Vol. x. p. 235.

† Archives Gen. de Med., 2nd Serie. tome ii. p. 455.

tended intestine was immediately apparent; it was punctured, and an artificial anus was established, but no further search was made for the obstruction. The patient died. Upon examination after death, the cæcum was found so contracted that it would scarcely admit a female catheter. The intestine which was punctured was the ilium.

In Mr. Luke's case the patient was aged 41. He had not been a sufferer from constipation until nine days before his admission into the London Hospital. The constipation had been complete for eight days, and there were flying pains extending from the left iliac region over the abdomen, accompanied by tension. There was constant vomiting. Purgatives were administered by the mouth and the rectum, and calomel and opium were given every four hours; within forty-eight hours there was incipient ptyalism. The constipation persisting, a tube was passed per rectum, apparently to the extent of twenty inches. At a later period it was introduced by Mr. Luke, who ascertained that it did not penetrate beyond the rectum, but became folded upon itself. Mr. Luke being satisfied, from the exploration with the tube and the other signs, that the obstruction existed at the termination of the colon, it was determined, on the sixth day after admission, to make an exploratory puncture in the left iliac fossa. The incision was four inches in length. Upon opening the peritoneum the intestinal tension was found to be so great as to make it necessary that the external opening should be lengthened. Even then, difficulty was experienced in getting at the obstruction, and it was not accomplished until the gaseous distention of the intestines was relieved by the introduction of a small trocar. The intestine was then slit up to the extent of an inch and a half. The finger, passed through the opening in the gut, detected the stricture, which felt like a circular induration. The patient slept during the night; next morning the sickness was unabated; the tension was still considerable. He died within twenty-four hours.

Post-mortem.—The small intestines were found much in-

flated. The colon had twice its usual diameter. The peritoneum enveloping the transverse colon was ruptured to the extent of about six inches. The stricture was situated about eight inches from the anus, in the sigmoid flexure of the colon, and occupied about five inches of the gut. It was completely impervious, and was the result of chronic thickening.

In the case treated by Dr. Bird and Mr. Hilton, and published in the last volume of the Society's Transactions, the patient was 20. The constipation was almost complete for many days. The diagnosis formed was, that there was strangulation of the small intestine by bands, and, ordinary means having failed, gastrotomy was performed. The obstruction was discovered, the intestine was liberated, and the patient survived the operation nine hours.

Dr. Todd's case was a man of 26, subject, from his boyhood, to attacks of pain in the abdomen, accompanied with constipation. The present attack commenced April 25. The pain was at first severe, with sickness, pulse 85. Opium and fomentations were ordered, and produced relief. The pain and sickness returned. Aperients were introduced by the stomach and rectum, but the symptoms became more urgent. Pulse 140. A warm-bath, with warm-water injections, and leeches to the abdomen, were now ordered, but without much relief. The most severe pain was around the umbilicus. The abdomen was much swollen and tympanitic, especially around the umbilicus. Mercurials, with opium, by the stomach, and mercurial inunctions, were now tried. On the 29th the vomited matter was brownish and pultaceous, the pain about the umbilicus was increased on pressure. The abdomen was more generally tender; there was dulness on percussion in the right iliac fossa, over the cæcum. Ordered that the bowels be inflated with air. This was done, but it caused a great feeling of distention; however, the patient thought he afterwards experienced relief from it.

30th.—To have hyd. chlor. gr. x. opii gr. j. statim, and to be repeated at night.

May 1.—The dulness was still marked over the cæcum and

around the umbilicus. A larger quantity of air was injected again, and the tube was passed up the rectum to the extent of fourteen or fifteen inches. It was bent when it was withdrawn.

May 2.—He complained of more pain, the abdomen was more tender, the matter vomited was more suspicious, though not distinctly stercoraceous. To take *Ex. coloc. comp. gr. x.* *Ol. croton mjj. 2^{da} horis.* *Ol. ricini, Sp. tereb. aa. ʒj.* *Ol. croton mv. fiat enema, statim utend.*

This evening a consultation was held, and Mr. Simon performed an operation for the formation of an artificial anus in the right iliac region. The intestine was exposed, secured and punctured, and about forty-eight ounces of a light-coloured fæculent fluid escaped. The obstruction was found not to exist in the ascending colon as was imagined, but probably in the small intestine. It was necessary to support the patient by stimulants during the operation.

May 3, 4 A.M.—He has been very restless since the operation was performed, and he has vomited continually. He died at 8 o'clock. At the post-mortem inspection a band was observed extending from the mesentery across to the mesocolon; and a portion of ilium was found implicated and strangulated by it.

In Pillore's case of obstructed rectum the patient died on the twenty-eighth day after operation.

In Fine's case the operation was performed for scirrhus of the rectum: the patient survived three months and a half.

In Freer's case, for stricture of the rectum, the patient died on the eighth day after operation.

In Pring's case, also for stricture, the patient recovered.

In Markland's case of stricture the result of the operation was also favourable.

Of Amussat's four cases of obstructed rectum, three patients recovered from the operation.

In Velpeau's case the operation failed.

In the two cases described by Dufresse-Chassaigne the operation was successful.

In Evans's case of contracted colon the patient survived the operation several months.

In Maisonneuve's case of stricture the patient did not survive the operation many hours.

Of the twenty-six cases in which the operations of Littre, Callisen and Amussat have been performed, in infants, for imperforate anus, in each instance the incision was made in the left iliac fossa, or in the left lumbar region, and an artificial anus was established. Of these, eight were successful, the patients survived at least a year; twelve died within a month; and six were doubtful; at least the history is defective.

I have found nineteen cases in which artificial anus was formed, in adult life, for obstruction in or near the rectum. In seventeen cases an incision was made either in the left iliac fossa, or the left lumbar region; and in two instances an opening was made in the right iliac fossa. Of these operations nine were successful.

In eight instances the operation was performed at other points of the abdomen, and without the establishment of artificial anus; and of those, four appear to have been successful.

These operations, formidable as they no doubt are, are at last only modifications of operations which we undertake every day; namely, those performed for the relief of strangulated hernia. The advantages in favour of the latter are the following: there is more probability that our diagnosis as to the nature and the seat of the strangulation will be correct, and the abdominal cavity is exposed to a smaller extent. And, even with those advantages, more than one case in three terminate fatally. In the present operation, apparently fourteen out of twenty-seven have failed. But, even in ordinary cases of strangulated hernia, we may be deceived as to the seat and the nature of the strangulation. We may have an external hernia; we may operate; but the patient dies; and an internal strangulation is discovered at a distance. In

Velpeau,* such cases are referred to. Mr. Hewett kindly communicated to me two cases in which there was external hernia; but after death it was found that the symptoms of strangulation were caused, in one case, by a small obturator hernia; in another, by a very small femoral tumour. In my own experience, at the same time that there was a femoral hernia in a state of strangulation, the commencement of the rectum was blocked up by a fibrous mass. Still these cases are not of ordinary occurrence, and it must be admitted that the diagnosis in external hernia is much more satisfactory than in those cases where the obstruction is situated internally. I am, however, of opinion that, when those internal obstructions have been more carefully studied, we may be able to determine, in some cases the nature, and, in others, at the least the seat, of the obstruction, with more accuracy than has been hitherto usually done.

With the exception of cases requiring the Cæsarian operation, the ancients do not seem to have entertained the idea that gastrotomy was a justifiable operation. I know it was the opinion of Le Clerc, that Praxagoras recommended a recourse to it, in cases of obstruction, when other means failed; but I am not satisfied that his advice was acted upon: and, indeed, I am in doubt whether, in later times, the case of the Baroness Lanti, mentioned by Bonetus, was not something more like our ordinary operations for hernia than what we regard as gastrotomy in the present day.

Whatever dread deterred men from making incisions into the abdomen formerly, little of it now remains among ourselves. The impunity with which extensive wounds have been made in the abdominal cavity, for the purpose of extracting ovarian tumours, or cysts, has left a very general impression that such wounds are much less dangerous than was formerly believed. That this impression may cause a somewhat reckless disposition to resort to operations upon this cavity is, I fear, to be apprehended. I am by no means certain, how-

* Med. Op., Art. Hernie.

ever, that the results obtained from operations performed for the extraction of a fœtus, or the removal of an ovarian cyst, can be properly applied to the question, where the case is one of obstruction. In the former cases there is probably no inflammatory action existing. In the case of an ovarian tumour, I think the peritoneal surface is considerably modified, less disposed to inflammatory action than in health; whilst, in cases of obstruction, we shall not be justified in proceeding to operation at an early period, as we might do in a case of external hernia where the diagnosis is simple; but we shall probably wait until a state of things is developed in the part which must be very unfavourable to the success of such an operation. Still I say, that in many cases it is our only resource, and that it is not without promise of success; and I conceive that when it appears that, under ordinary treatment, so large a proportion as seven out of nine of these cases of obstruction from mechanical causes terminate fatally, and that, of the cases submitted to operation, thirteen out of twenty-seven have terminated favourably, we are justified, even in the present imperfect state of our diagnosis, in having recourse to an operation which affords such increased chances for the preservation of life, provided we can satisfy ourselves as to the nature of the obstruction.

The ground having been so far cleared, we come to the question, when is it proper to proceed to operation? and probably of all points connected with the subject this is the most difficult of solution. If we could say that the obstruction was complete and not removable, we could not proceed to operate too early; but this we cannot do: the obstruction may give way after many days, when even fœcal vomiting has supervened: and when it is borne in mind that probably a third of the cases of obstructed bowels are caused by invagination, and that of such cases nearly a fourth recover under ordinary treatment, our difficulties are not lessened.

Still we have ultimately to decide whether ordinary means should be further persevered in, whether the patient is to be

abandoned to his fate, or whether recourse should be had to operation. In reference to this question Dr. Watson says, "Common sense and common humanity answer, you must abandon ordinary means the instant you are convinced that there is a mechanical obstacle which cannot be overcome." But he says again, and truly enough, "But how are you to know this?" Here his suggestions are, as usual, judicious:—"We fear the existence of some hopelessly impassible mechanical impediments when, the constipation being obstinate, we discover a tumour or hardness in some part of the belly; or 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. And this is the distinctive symptom on which I wish to fix your attention. The abdomen gradually enlarges, especially if the patient is able to retain food; the intestines fill up above the obstacle; and the throes of pain occur, attended with sickness; and during these pangs you may feel immense coils of intestine, as big perhaps as one's arm, rise and roll over with loud roarings and flatulence. When this takes place, the time for giving purgatives is certainly over."

But it has been said, supposing the operation to be undertaken, is it certain that the obstruction can be removed? I apprehend not. It is true that in a case of invagination we may be unable to withdraw the invaginated portion, and that in a case of contraction from diseased parietes we may be unable to dilate it; that in a case of intra or extra intestinal tumour we might be unable to remove it; but whatever the nature of the obstruction, supposing it not to be susceptible of relief by operation, it is in our power to make an artificial anus, as near as we can get to the seat of the obstruction; and the existence of such an infirmity, even when incurable, is consistent with a considerable extension of life, unless the opening be nearer the stomach than it need be in ordinary

cases of obstruction, which are usually found not higher than the inferior portion of the ilium.

Believing that many practitioners will be able to make up their minds that the time is come for something more decided than croton oil, or calomel, or quicksilver, and that operation is justifiable, the question remains, where is the incision to be made? 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 conceive 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 experience we possess shows that, whatever may be our notions or plans of relief, there are not more than two well-authenticated cases in which constricting bands have been severed; and with the exception of cases of invagination, not more than two cases in which the integrity of the intestine has been respected, and the obstacle successfully removed; but there are many in which life has been saved by the establishment of an artificial anus; and I apprehend it is to that point our attention must be most earnestly directed.

The conclusions to which I come, after a careful review of all the circumstances to which reference has been made, are as follows:—

1st. That intestinal obstructions, dependent upon causes acting within the abdominal cavity, are by no means of rare occurrence.

2nd. That they may occur at any period of life; and that although a particular variety of obstruction may be more frequently seen than another, at a particular period of life, there are still so many exceptions to the rule that we cannot rely much upon the probability that a particular obstruction is present at a given period of life.

3rd. That the diagnosis of the existence of an obstruction is usually not difficult.

4th. That the diagnosis of the nature and the seat of the obstruction is, in most cases, most uncertain and unsatisfactory.

5th. That beyond the general history of the case, the most probable means of ascertaining the seat of the obstacle is, to follow carefully the distended intestine up to the point of obstruction.

6th. That under ordinary treatment these cases are fatal in the proportion of, probably, seven out of nine.

7th. That although no reliance can be placed on purgatives, on mercury, on opium, or any variety of injection, and that although in many cases they seem to aggravate the suffering, yet as it is unquestionable that in some cases they have been administered with relief, we cannot advise that they should be discarded, but we doubt the prudence of continuing to use them beyond two or three days.

8th. That the interference by surgical operation is justifiable when three or four days have passed without any relief from ordinary means (provided the constipation be complete and vomiting of fæcal matter continue), because it affords a greater chance for the preservation of life than ordinary means.

9th. That if the indications as to the seat of the obstruction be sufficient to satisfy the surgeon, it is at or near that point that the incision should be made ; but if there be much doubt, it is most prudent to make the incision on the median line.

10th. That if it be found impracticable to remove the cause of the obstruction, or imprudent to make any extended search for it, relief may be obtained by forming an artificial anus as near as may be prudent to the seat of the obstruction ; and that if it be, as it frequently is, near the termination of the ilium, an incision on the median line admits of its accomplishment as near as may be to the termination of that intestine.