Researches on the pathology of the intestinal canal. Part II. On the inflammatory affections / by John Abercrombie.

With the Author's best Compts

RESEARCHES

ON THE

PATHOLOGY OF THE INTESTINAL CANAL.

Part II.

ON THE INFLAMMATORY AFFECTIONS.

By JOHN ABERCROMBIE, M. D.
FELLOW OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

PRINTED BY GEORGE RAMSAY AND COMPANY.

6

RESEARCHES

ON THE

PATHOLOGY OF THE INTESTINAL CANAL.

Part II.

ON THE INFLAMMATORY AFFECTIONS.

Betwixt a fatal case of ileus, and a fatal case of enteritis, there is usually a considerable similarity in the morbid appearances which are observed on dissection. In both we generally find a portion of intestine in a state of distention, and the distended part is more or less inflamed, with exudation of coagulable lymph, lividity, or gangrene. But when we trace more accurately the history of the two affections, we discover an important difference. We find reason to believe that ileus may be fatal in the state of distention without inflammation, and that enteritis may be fatal without distention; or, in other words, that the distention is the primary disease in the one, and in the other, the inflammation. In a former paper I have endeavoured to trace the pathology of ileus, and I have proposed various conjectures in regard to the nature and origin of the

disease. I conceive it is to be viewed as the disease of a muscular organ, originating in a part of that organ being distended beyond its power of contraction. A muscular organ thus distended passes into inflammation, as we observe in the urinary bladder. One of the sources of this distention I have supposed to be, such a debilitated state of the muscular fibres at a particular part of the canal, that they are distended before that impulse from the healthy parts above, which in their natural state would have excited them to contraction. Now, nothing, I imagine, is more likely thus to destroy the action of muscular fibre than inflammation. I do not mean to enter upon the question, whether this be a primary or a secondary effect of inflammation, but we have, in various parts of the body, ample evidence of the fact, that muscles which have been inflamed, are much impaired in their muscular action, and often completely paralyzed. If we suppose, then, a portion of the muscular coat of the intestinal canal to be thus weakened or paralyzed by inflammation, and that the healthy parts above are forcibly propelling fluid matters and flatus into this portion, we readily conceive how it is distended before this force, and the case then assumes the usual appearances of ileus. Enteritis, then, or primary inflammation of the intestinal canal, may be said to be one of the causes of ileus, or, in other words, to terminate in ileus; while, on the other hand, ileus originating in other causes, usually terminates by inflammation of the distended part; and thus the two cases, which differ widely at their commencement, are, at their termination, remarkably similar.

If these principles be correct, it will follow, that the symptoms and the morbid appearances of ileus will accompany enteritis only when the inflammation is seated in the muscular coat; and this leads us to a most important distinction in the inflammatory affections of the intestinal canal, both in regard to the seat of the inflammation, and the symptoms which accompany it. In regard to the former, we shall see reason to believe, that the inflammation may be primarily seated either in the peritonæal, the muscular, or the villous coat, giving rise to important diversities in the symptoms, and that it may spread from one structure into another, producing remarkable changes of the symptoms, at different periods of the same case. Thus, while the inflammation is confined to the peritonæal coat, it is probable that the disease may go on without interrupting the muscular action of the canal, or that the irritability of the muscular fibres may even be increased, so as to occasion diarrhœa. When the inflammation, again, is in the villous coat, the mus-

cular action may also be unimpeded, and may be still more likely to be increased; but when the inflammation in either case extends to the muscular coat, the symptoms pass into those of ileus.

These conjectures correspond with the phenomena which we observe in diseases of this class. We find inflammatory symptoms in the abdomen, connected with a natural and healthy state of the action of the intestinal canal; and we find them connected with diarrhœa. In both these conditions, the disease may be fatal without interruption of the intestinal action, and yet proofs of most extensive inflammation may be found on dissection; and, on the other hand, a case may begin with a natural state of the bowels, or with diarrhœa, and, at a more advanced period, may pass into ileus. In connection with these varieties in the symptoms, we find, in the fatal cases, diversities equally important in the morbid appearances. In many we find gangrene combined with deposition of coagulable lymph; but in some we find extensive gangrene without this deposition, while, in others, we observe such deposition in great quantity, without the slightest appearance of gangrene. Now, the deposition of coagulable lymph is probably to be considered as the result of inflammation of the peritonæal coat, while the muscular coat, I imagine, is to be viewed as the seat of gangrene. The two appearances, indeed, are very often combined, but, if this distinction be correct, it will furnish us with a criterion by which we may judge, in many cases, of the primary seat of the disease, and some singular facts occur as the result of this investigation. In those cases which are primarily inflammatory, that is, distinguished from the commencement by pain, tenderness, and fever, gangrene is not so frequent as we are apt to suppose; and it very rarely occurs uncombined with gelatinous deposition; while in those cases which begin as ileus, that is, with obstruction of the bowels, without fever or tenderness, gangrene will be found to be very common, and frequently to occur without gelatinous deposition. But, farther, it will be found, that, in several of the cases which terminated by exudation without gangrene, there was no obstruction of the bowels, or not till an advanced period of the disease, while the symptoms of ileus had existed from an early period in those cases in which there was extensive gangrene: and in case 9th, in which there were both extensive exudation and gangrene, the intestinal action was at first natural, and afterwards there occurred symptoms of ileus. These results are curious, and if they shall be verified by farther observation, they are important. They give considerable probability to the conjectures

which I have proposed in regard to the pathology of these affections,—that the inflammation may affect the whole structure of the canal, or may be confined to one of the coats;—that, when it affects the muscular coat, obstruction takes place, but that, when it is confined to the peritonæal coat, the muscular action of the canal may go on without interruption;—that the proper termination of the disease in the peritonæal coat is gelatinous exudation, in the muscular gangrene.

These principles I propose for farther investigation; and I shall at present only add a comparative view of the cases of ileus and of inflammation, which will be found in this and the preceding paper. Setting aside the cases which were connected with mechanical obstruction, I have described eight fatal cases, which were selected as exhibiting the symptoms of ileus without primary inflammation. Of these the terminations were the following:

Distention without inflammation in -	1
Distention with inflammation, slight, and quite recent,	2
Gangrene without exudation, - - -	2
Gangrene with slight exudation, - -	3

In this paper I shall describe eight fatal cases, which were selected as exhibiting primary symptoms of inflammation; and of these the terminations were,

Extensive exudation, without gangrene, -	5
Exudation, accompanied with gangrene, - -	3

In none of the former was there exudation without gangrene, and in none of the latter was there gangrene without exudation. I exclude from this comparison the remarkable case, (case 11th,) because I conceive that in it the affection of the bowels was not the fatal disease. It is highly valuable, as shewing the state of the parts when a severe attack of this kind had been recently recovered from.

These cases were originally arranged, according to their symptoms, under the two heads of ileus and inflammation, without any attention to the mode of their termination; and it was only after the first series was printed that this peculiarity in their terminations occurred to me; for, in arranging the cases of this second part, and searching for a case of primary inflammation which was fatal by gangrene without exudation, I found that I had no such example. The subject is worthy of careful investigation. It is a remarkable fact, that in all the inflammatory cases there was exudation of considerable extent; that in more than half of them it was the only morbid appearance, and

a prominent appearance in all; that of the cases of ileus, again, three were fatal without either exudation or gangrene; that gangrene occurred in all the remaining cases as the prominent appearance, and the only appearance in two out of five. The following conclusions from these facts I state at present merely as conjectures.

1. In all the cases which exhibited symptoms of primary inflammation, the peritonæum seemed to have been extensively affected; and in various parts of the body we see reason to believe, that the symptoms accompanying inflammation of membranous parts are more acute than in any other structure. Is it, then, probable that, in the acute affections of the bowels, the inflammation is primarily seated in the peritonæal coat?

2. In several of the cases of ileus which were fatal by extensive gangrene, there had been no primary symptoms of inflammation, and in some of them not till a very short period before death. Is it, then, probable, that inflammation may exist in the muscular fibres without producing acute symptoms, and distinguished only by symptoms of ileus, and that, in these cases, the symptoms of acute inflammation supervene when the inflammation extends to the peritonæal coat? Were this rendered probable, it would add considerably to our pathology of ileus, and would throw much light on the action of several remedies which are found efficacious in producing very sudden resolution of the disease, such as large bleeding and the application of cold. It would, however, still be probable that there are cases of ileus which proceed from other causes, and require a different treatment. The subject is most important. Much observation is required to throw light upon it.

3. I shall afterwards give my reasons for believing that inflammation may exist in the peritonæal coat without producing very violent symptoms. If, therefore, each of the two structures may be separately affected, and with this diversity of symptoms, it will be probable that it is when the inflammation affects both the peritonæal and muscular coats at once, that we find the combination of inflammation and ileus, which we express by the term Enteritis. It is in this sense that I mean to use the term Enteritis in the following part of this paper.

Symptoms of Inflammation in the Intestinal Canal.

Sect. I.—*Inflammation confined to the Peritonæal Coat.*

The title which I have placed at the top of this section, I merely propose as expressing the opinion which I have been

led to form in regard to the nature of the insidious and dangerous disease which I mean to describe. It differs so remarkably from the disease which is usually described under the name of Enteritis, as fully to merit a distinct investigation.

The disease begins with pain in some part of the abdomen, varying very much in its seat, its degree, and its general characters. It is sometimes nearly general over the abdomen, and sometimes confined to a particular part, as one side of the abdomen, or very frequently to the lower part, immediately above the pubis. It is increased by pressure, and, in some cases, it is little complained of, except when pressure is applied, being rather acute tenderness than actual pain. In other cases there is acute pain, which comes on in paroxysms, very violent while it continues, so as probably to occasion screaming, but going off completely after a short time, leaving only the tenderness on pressure, which is sometimes in such a degree that the weight of the bed-clothes gives uneasiness. Yet, notwithstanding this tenderness, the patient may be, during considerable intervals, free from any acute pain when he lies perfectly still, but it is excited by various exertions, as coughing, sneezing, a full inspiration, and by any motion of the body.

According to the seat of the disease, various neighbouring organs are affected. When it is in the lower part of the abdomen, it is generally accompanied by frequent painful desire to pass urine, and an acute pain extending along the urethra. Sometimes the secretion of urine is greatly diminished, or nearly suspended. There may be along with this such frequent desire to pass it as leads to the suspicion of retention, but the catheter being employed in such cases, the bladder is found empty. When the disease is in the upper part of the abdomen, there is frequently vomiting, and sometimes a peculiar convulsive eructation or belching of wind, which continues without intermission for a considerable time. But vomiting is not a regular symptom, and seems only to occur when the disease is in the upper part of the canal. Sometimes we observe hiccup and quick short breathing, probably connected with an affection of the diaphragm. The pain sometimes suddenly shifts its place, as from the region of the stomach to that of the bladder, or from one side of the abdomen to the other. In some of these cases it leaves its former seat, in others, both continue to be affected at once.

The pulse is frequently little affected, especially in the early stages. It may be from 80 to 90, or 96, but is sometimes scarcely above the natural standard. The state of the bowels varies considerably; but a leading peculiarity of the disease is,

that they are not obstructed. Sometimes there are frequent calls to stool, with scanty slimy discharges, sometimes a more copious diarrhœa, with much pain and straining, but very often, perhaps most commonly, the bowels are in a natural state, being readily moved by very mild medicines. These evacuations, however, produce no relief; on the contrary, the patient generally complains of violent pain during the operation of the mildest purgative, and after the operation is over, all the symptoms are found to be increased.

Such are the general characters of this affection. It differs from enteritis in the bowels being natural or loose; the pulse being little affected; the pain often occurring in paroxysms, so as to be mistaken for a spasmodic or flatulent affection; and in the absence of vomiting, except in certain cases formerly referred to. These peculiarities are chiefly observed in the early stages; as the disease advances they usually become less remarkable; the pulse rises, the pain becomes more fixed and permanent, the belly becomes tympanitic, and, at a certain period, obstruction takes place, and the case passes into all the usual symptoms of enteritis. It may, however, be fatal without this change; the bowels continuing regular, and the pulse from 80 to 90, until a very short time before death.

The disease, as will be seen from the cases, may be fatal in three days. On dissection we find uniformly effusion of coagulable lymph; in some cases very extensive, and frequently effusion of a turbid or puriform fluid, sometimes in considerable quantity. Gangrene is rare; and, as far as my observation extends, never occurs as the prominent appearance; it being, when it does occur, slight and partial, and always accompanied by extensive deposition of coagulable lymph. I have stated my conjectures in regard to the nature of this disease. I conceive it to be inflammation, confined to the peritonæal coat, and that, in consequence of this, the muscular action of the canal is not impeded. It may continue a considerable time, and perhaps be fatal in this state, or it may spread to the muscular coat, and give rise to the usual symptoms of enteritis.

Inflammation of the peritonæum may occur in a more limited form than in the disease which I have now described, and, according to the seat of it, may assume the appearance of disease of various organs, as the bladder, the kidney, the liver, or, when seated in the membrane covering the diaphragm, may simulate disease of the lungs. I think I have seen it in one case seated in the ligaments of the liver, and giving rise to very obscure and anomalous symptoms. When it occurs in the neighbourhood of the kidney, I think it may induce the proper

Ischuria Renalis, which is usually fatal by coma and effusion in the brain. I do not know whether inflammation may be seated in the peritonæum lining the parietes of the abdomen, without affecting the intestinal canal. I have seen some cases which I supposed to be of this nature, but I have not ascertained it. The cases to which I refer terminated favourably.

Sect. II.—*Inflammation confined to the Muscular Coat.*

There is much obscurity in the pathology of muscle, particularly in regard to the effect of inflammation on muscular fibre. Perhaps we have been too much in the habit of passing over the investigation by an indiscriminate application of the term Rheumatism. We cannot doubt that muscular fibre is liable to gangrene, but rheumatism never terminates in gangrene. It is probable, then, that muscular fibre is liable to an inflammation differing materially from rheumatism. The most remarkable example of it in the extremities is in the high inflammation which follows compound fractures, and which often terminates in extensive gangrene. We see it also in the psoæ muscles, where it generally terminates by suppuration; sometimes of such extent that every trace of muscular fibre has been lost, nothing being left but the sheath, full of purulent matter.* Though the subject be extremely obscure, I think we are warranted in supposing that the muscular fibres of the intestinal canal may be the seat of inflammation, and that it may terminate in gangrene. I have already mentioned the circumstances which induce me to conjecture that inflammation in the intestine may be confined to the muscular coat, that it sometimes exists there producing ileus, but not accompanied by symptoms of active inflammation. Did this take place in the remarkable case, (Case 3d of my former paper,) in which there was extensive gangrene, though there had been no symptom of active inflammation till a few hours before death? It is mere conjecture, but it is a point highly deserving of minute investigation.

Sect. III.—*Inflammation affecting the Muscular and Peritonæal Coats at once.*

I think we may consider it as fully ascertained, that extensive inflammation may exist in the intestine without producing ob-

---

* See Thomson's Lectures on Inflammation.

struction or symptoms of ileus; and it is highly probable, that, in such cases, the inflammation is confined to the peritonæal coat. On the other hand, we have seen that ileus may exist without inflammatory symptoms, while an inflammatory action seemed really to have been going on, which was probably seated in the muscular coat. When both these structures are affected at once, I think there is produced the genuine enteritis, which may be designated as a combination of the symptoms of active inflammation, with symptoms of ileus;—tenderness of the abdomen and fever, with obstruction of the bowels and vomiting. If these principles are correct, it will follow, that enteritis may appear under three forms, and this division seems really to correspond with the phenomena which meet us in the history of these affections. (1.) The disease may begin in the muscular coat, (whether originally inflammatory, or consisting of loss of action from other causes,) and may at an advanced period affect the peritonæal coat. In this case the symptoms will be first those of ileus, afterwards passing into those of active inflammation. (2.) The disease may begin in the peritonæal coat, and afterwards extend to the muscular, in which case there will be the symptoms of peritonæal inflammation passing into enteritis. This form of the disease is exemplified in Case 9th, and the appearances are such as we should expect upon the principles which I have proposed; extensive exudation of coagulable lymph combined with gangrene; and in Case 10th, in which there was the same course of symptoms, but fatal without gangrene. (3.) Both structures affected at once producing the genuine enteritis.

Sect. IV.—*Inflammation of the Villous Coat.*

This subject presents a most important field of investigation, in which hitherto little has been done. The appearances are generally, a considerable portion of the inner surface of the intestine covered with irregular patches of inflammation. These are of various extent, and are often sensibly elevated above the level of the surrounding parts. Sometimes they present on their surface numerous small vesicles, and at a more advanced period these seem to pass into minute ulcers. The symptoms appear to vary according to the seat of the disease: when it is in the lower part of the canal they seem to be nearly allied to dysentery. When it is in the small intestine there is generally a peculiar painful diarrhœa, in which watery matters pass through in large quantity, with much pain and straining, any thing taken into the stomach exciting an irritation which

continues till it be thrown off. There is generally fever and thirst, and sometimes vomiting. It appears to be a common and fatal disease of infants, not easily distinguished in its early stages from their common bowel complaints,—very untractable, and frequently terminating by coma. In adults the disease occurs both in an acute and chronic form. The latter I suspect is not uncommon. I shall afterwards describe several examples of it, both in the state of simple inflammation and ulceration. The former, I believe, is more uncommon in adults as an idiopathic disease, but it seems to occur as a symptomatic affection in cases of malignant typhus. I mean afterwards to attempt an outline of this important subject, and only refer to it here in this superficial manner, in connection with the subject of this paper, to introduce the remarkable case (Case 13th) in which this affection seemed to pass into enteritis.

Examples of the Leading Varieties of Inflammation of the Intestinal Canal.

I.—Extensive Peritonitis with Diarrhœa.

Case I.—A woman, 30, a servant, unmarried, after being feverish for a day or two, was seized, on 8th December 1817, with diarrhœa, accompanied by considerable pain. On the 9th the diarrhœa continued; the pain was severe, and was increased by pressure. Pulse 90. Took some purgative medicine, which was vomited, and at night was bled to ℥xii. I saw her for the first time on the 10th, when I found her sinking. Pulse very frequent, and feeble; features contracted; a good deal of pain; some vomiting; belly tympanitic. Died at night. *Dissection.*—There were most extensive marks of peritonæal inflammation; nearly the whole surface of the intestinal canal being covered by a coating of coagulable lymph, which extended also over the convex surface of the liver, and over the whole surface of the spleen. It was in greatest quantity about the right side of the colon.

To this very important case I consider the two following as analogous.

Case II.—A girl, aged 16, had been for a week or two observed to be considerably fallen off in her appearance, and was affected with diarrhœa, which was frequent and severe, and had resisted various remedies. (4th September 1819.)—The diarrhœa continued, with considerable pain, which was most severe round the umbilicus. The

abdomen was tense and painful on pressure; the tongue was clean; the pulse rather frequent; but the appetite was unimpaired, and the girl was going about her usual employments. She took some opiates, and a blister was applied to the abdomen. (5th.)—Little change. (6th.)—Pain more severe; twisting round the umbilicus, and much increased by pressure. Diarrhœa increased; evacuations watery, copious, and rather dark-coloured; pulse 120, and small; abdomen tense, and a little tumid. Was bled to ℥xv. (7th.)—Symptoms much relieved. Blood buffy and cupped. From this time she continued to improve till the 14th, when the pain suddenly returned with great severity, increased by pressure, and accompanied by dysuria. Bowels open; pulse 112, and small. Was bled to ℥xv. (15th.)—Pulse 100; pain in the region of the bladder, extending along the urethra, with dysuria; bowels moved repeatedly and copiously; evacuations pretty natural; abdomen still tender. Was bled to ℥xii., and blistered. Blood buffy and cupped. (16th.)—Symptoms relieved; took an opiate. Pulse being still frequent, began to take digitalis, and in a few days was free from complaint.

Case III.—A lady, aged about 40, complained of frequent diarrhœa, accompanied by violent pain over the whole abdomen, especially the lower part. The pain was aggravated before the evacuations took place, but it was never gone, and it was sometimes aggravated without evacuation; it was increased by pressure. Pulse about 108; tongue dry, with thirst; no vomiting. Evacuations extremely frequent, copious, and varying in appearance, being sometimes dark, watery, and offensive, sometimes whitish. I have no notes of the particular details of this case. It was treated by bloodletting, which was repeated three times; the pulse then came down, and the pain and tenderness of the abdomen were removed, after which the natural state of the bowels was restored by the usual means.

II.—Peritonitis with a Natural State of the Bowels.

Case IV.—A girl, aged 15. On Sunday, 2d March 1817, was at church in her usual health; in the evening complained of some pain of the abdomen. (3d.)—Had pain of the belly and some vomiting; took castor oil, which operated copiously. (4th.)—Pain continued, with some vomiting, but not urgent, and the complaint excited no alarm. Bowels open. Was seen by a medical man, who found her pulse 116, and very small, and the belly painful on pressure. (5th.)—Belly tense and tympanitic; symptoms not relieved. Was bled without benefit. Sunk rapidly, and died at night. I did not see this case during the life of the patient. I was present at the examination of the body. *Dissection.*—On opening the abdomen the whole of the small intestines presented one smooth uniform surface, being firmly glued together, and the interstices filled up by an immense deposition

of coagulable lymph, which was quite soft and recent; the mass also adhered to the parietes of the abdomen. There was a similar deposition, though in smaller quantity, on the surface of the great intestine, and was traced nearly to the extremity of the rectum; it also appeared on the surface of the liver. The omentum was inflamed and dark-coloured, and there were considerable marks of inflammation on the peritonæum lining the parietes of the abdomen.

Case V.—A girl, aged 15. (12th May 181 .)—Had fever, with pneumonic symptoms; was bled with relief; the fever subsided gradually, and on the 19th she was considered as well. On the 20th, at night, she complained of some pain of the belly, which soon went off, and through the night she felt no uneasiness. (21st.)—Had violent pain, with vomiting; pulse frequent; pain increased by pressure. Took some laudanum, and afterwards purgative medicine. The vomiting subsided after the laudanum; the pain was much alleviated, and was only complained of on pressure. The purgative medicine did not operate during the day, but operated in the night four or five times. I saw her for the first time on the morning of the 22d, and found her moribund. Pulse not to be counted from its weakness; features collapsed; belly tympanitic. Died in less than an hour after the visit. *Dissection.*—The bowels in several places, especially on the ileum, were inflamed with effusion of coagulable lymph. At the lower end of the ileum, about an inch from the caput coli, there was an inflamed portion, in the centre of which there was a white spot the size of a shilling, and in the centre of this spot a round aperture, which admitted a small quill; the edges of it were rounded and a little thickened. Much fluid feces and gas had escaped into the cavity of the peritonæum, and the bowels were not distended. There were in some places a few livid spots, but no gangrene.

Case VI.—A man, aged 50, had acute pain of the hypogastric region, with dysuria. After the operation of a dose of castor oil, on the following day the pain was so much increased, as to produce writhing of the body: urgent ineffectual efforts to pass urine; pulse natural. Relief was obtained from the warm bath, after which urine was voided. 3d day, Pain and dysuria continued; pulse nearly natural; bladder found empty by the catheter. (4th.) Copious evacuations by stool; some high-coloured urine passed; pulse 90 and soft; tongue white. (5th.) Pain returned after a saline purgative, which operated scantily; it was chiefly referred to the left iliac region; increased by pressure; restlessness; much flatus from the stomach; some vomiting on taking anything; pulse 96, in the evening 84. (6th.) The pain had shifted to the right iliac region; pulse 124, small and weak; features collapsed; body cold; died at 4 P.M. *Dissection.*—Much exudation and adhesion over the whole surface of the bowels. The ileum, cæcum, and colon, were injected with

numerous blood-vessels, in some places so as to acquire a dark colour, but the texture remained entire and firm. The appendiculæ pinquedinosæ were injected and covered with a viscid effusion, communicating the appearance of a mass of disease. The external and posterior portion of the bladder appeared also a little injected; other viscera natural. *

Case VII.—A woman, aged 45, (26th October 1816,) had frequent vomiting, and pain across the epigastrium, which was increased by pressure, by motion, and by a full inspiration; pulse 84; tongue white; bowels had been moved in the morning. Was bled to ℥xii. and took laxative medicine.

27th. Vomiting subsided; pain not relieved, but extended farther down over the abdomen; much increased by pressure; pulse 84. Was bled again, but only ℥vi. obtained; took castor oil.

Vespere.—Bowels moved fully five or six times; evacuations at first scybalous, afterwards thin and feculent. Severe pain, occurring in paroxysms; great tenderness over the whole abdomen; tongue white; pain excited by a full inspiration, and by motion; pulse 84, of good strength. Was bled to ℥xx.

28th. All the symptoms relieved; bowels open; was well in a few days.

Case VIII.—A gentleman, aged 25, (18th September 1816,) was affected with pain in the bowels, and frequent desire to go to stool, with scanty slimy discharges; pulse natural; took castor oil, which produced several stools, thin, feculent, and pretty copious; pain of the belly continued, not constant, but occurring in paroxysms, and aggravated by motion; belly painful when pressed; pulse then 80; considerable dysuria. Was bled to ℥xvj. and took a moderate opiate.

19th. Easy in the night, but in the morning the pain returned with such violence as to occasion screaming and extreme distress; it was chiefly about the umbilicus, but sometimes shifted to the stomach; violent pain in the region of the bladder, and extending along the whole course of the urethra; much dysuria; some vomiting; belly very tender; pulse from 90 to 100; several feculent consistent stools after a mild enema. Was bled to ℥xvj.; took gr. x. of aloes. After the bleeding, the violent pain subsided; the tenderness continued; repeated vomiting; and occasional short paroxysms of pain; dysuria continued, and at one time amounted to retention, which was relieved by a mild enema; bowels open; took an opiate at night.

20th. Much depression; sickness and faintness; belly tender and a little tympanitic; lay on his back, but could not bear the pressure of the bed-clothes; dysuria abated; no constant pain, but occasional

---

* This important case is by Dr Marshall Hall. For the more particular details of it, see Vol. XII. of this Journal, p. 426.

paroxysms of short duration; respiration short and quick; countenance anxious; voice feeble; pulse 100; tongue foul; some vomiting; on taking a full breath, felt severely pained and cramped across the epigastrium. Was bled to ℥xii.; took some aloes, and at night gr. vi. of calomel.

Was much relieved after the bleeding; belly bore pressure; breathed more freely, and spoke more vigorously; pulse 100; tympanitic feel gone; discharged much flatus, and bowels were moved once.

21st. In the early part of the night was restless, with delirium and frequent vomiting. In the morning his bowels were moved four or five times, with much relief; pulse 80; all the symptoms abated. From this time continued well; discharged much hardened feces for several days.

In this important case, I believe the bleeding ought to have been repeated on the evening of the 19th, and the opiate seemed to be rather injurious.

III.—Peritonitis passing into Enteritis.

Case IX.—A gentleman, aged 20, (3d September 1812,) was affected with pain in the lower part of the belly, increased by pressure; bowels regular; pulse from 84 to 90; complaint began on the 2d; was bled freely, and took laxative medicine, which operated fully.

4th. Pain much relieved, but not gone; pulse 90; bleeding was repeated, and a blister applied.

5th. 6th. Pulse natural; complained only of occasional griping pain; took laxative medicines, which operated; the stools were green and watery, but copious.

7th. Free from complaint in the morning; bowels open; but the stools were still green and watery. In the afternoon complained that some laxative medicine produced most unusual pain; and at night had fixed pain in the upper part of the belly, with shivering, followed by heat; pulse 84. Through the night had copious feculent evacuations, without relief of the pain; vomited repeatedly.

8th. Pulse 96; fixed pain in the upper part of the belly; the whole abdomen was hard and painful on pressure, and a little tympanitic; repeated vomiting. From this period the bowels became obstructed, and the case resisted every active remedy; repeated blood-letting; blistering; cold applications; purgative injections; tobacco injections; various purgatives, &c.

9th. Pulse 100; pain unabated, but bore pressure better; belly tympanitic; vomiting abated; no stool, except some very scanty discharges of watery matter. At night, the pulse rose to 126; features contracted; belly swelled and tympanitic; hiccup; pain much abated. In the night the bowels were moved. Sunk gradually, and died at 9 o'clock on the morning of the 10th. *Dissection.*—All the intestines much distended, and glued together at every part by most extensive deposition of coagulable lymph; omentum highly inflamed,

and adhering to the intestines. At the lower end of the small intestine an extensive portion was gangrenous, and another at the lower part of the colon before it forms the sigmoid flexure. At this place the posterior part of the intestine, and a portion of the mesentery, were considerably thickened. The appendix vermiformis was gangrenous, and an opening had taken place in it, through which liquid feces had escaped into the cavity of the abdomen.

Case X.—A gentleman, aged about 20, (10th December 1817, late at night,) was found writhing and screaming, from violent pain in the abdomen, every part of which was tender to the touch; great pain and difficulty in making water; frequent vomiting; pulse 96, soft and rather weak; had felt pain for several days, but it increased on the evening of the 9th, with vomiting; took laxative medicine in the morning of the 10th, which operated freely three or four times, but since these evacuations the pain was much increased. Was largely bled, and took a moderate opiate.

11th. Much relieved; no vomiting; pain much abated; pulse 90, and of good strength. Bleeding was repeated; a mild enema.

In the course of the day, had some violent paroxysms of pain, and vomited twice; belly bore pressure better, except at one spot at the lower part of the right side, where it was acutely tender; urine passed more easily; pulse at night, 96: bowels moved: evacuation thin and feculent. Bleeding was repeated at night; cold applications to the abdomen; blister; mild enema.

12th. Pulse 90; no stool; less pain, but much tenderness of abdomen; very little vomiting; no tumefaction of abdomen. Two small bleedings, no more being borne; large blister; various laxatives.

13th. Pulse increasing in frequency, and becoming feeble; abdomen enlarged at the lower part, as if the bladder were distended, but by the catheter it was found to be empty; abdomen still tender; no stool; urine very scanty, and passed with much pain. Tobacco injections and various purgatives were employed.

14th. Pulse 120; no stool; no urine; belly tympanitic; lay through the day in a state of great exhaustion, with much vomiting, and died at night.

Dissection.—Extensive inflammation of the ileum, the inflamed parts extensively glued together, and pressed down into the pelvis by the distention of the parts above, which were inflamed also, but with less exudation; no gangrene; bladder inflamed and collapsed; omentum inflamed; about 1 lb. of puriform fluid in the cavity of the peritonæum.

IV.—Enteritis.

Case XI.—A young lady, aged 18, (4th March 1813,) complained of pain in the lower part of the belly, increased by pressure. Pulse 126. Some vomiting.

Was bled largely, and took laxative medicine; soon after had one stool; but, the pain and fever continuing, the bleeding was repeated at night, and the other usual remedies ordered.

5th. No relief; no stool. Pulse 120. Various laxatives, cold applications, tobacco injections, &c. were used without benefit, except that the cold applications to the abdomen (iced water) produced great alleviation of the pain.

6th. No stool; much pain; great paleness and sinking. Pulse 120. Various purgatives and injections were persevered in.

7th. Began to discharge after the injections some green slimy matter. Pain as before; pulse 120; countenance depressed and pale.

From this time the pain began to subside, and the pulse to come down gradually. On the 11th it fell to the natural standard. By persevering in the use of laxative medicines and injections at short intervals, the bowels began to yield, and on the 12th were fully moved four or five times.

From the commencement of her illness she had been affected with a pain in the left ear, and about the seventh began to complain of violent headach. This increased gradually; and on the 22d she died of an affection of the brain, which I have formerly described, (Obs. on Chronic Inflam. of Brain, case 11th.) From the 12th to the 22d, the bowels continued to discharge their functions in the healthy manner. *Dissection.*—The caput coli, and about eighteen inches of the lower end of the ileum, were of a dark livid colour, but not altered in their structure. Intestines in other respects were healthy.

Case XII.—A child aged 3 years and 3 months. (12th February 1812.)—Was affected with urgent vomiting and great thirst, all the liquid taken in being vomited almost immediately, mixed with large quantities of light green fluid. Pulse very frequent. Countenance sunk and anxious. Complained of no pain. She had been unwell for four or five days, but slightly. Took laxative medicine on the 9th, which operated freely. On the 10th seemed much better, and the bowels were quite open. Complained once of pain in her bowels, but had not mentioned it again. Vomiting began late on the evening of the 10th, and was very urgent through the whole of the 11th. Bowels had not been moved since the vomiting began.

The usual remedies were employed without benefit. The vomiting continued urgent, and the bowels obstinately obstructed. 13th.—Vomiting abated; medicines retained, but no effect from them. She continued through the day at times restless and feverish, at others oppressed and exhausted. Died in the night.

Dissection.—Stomach externally healthy; internally slightly inflamed, and containing much dark-coloured fluid. About a fourth part of the small intestine, at the upper part, was lightly inflamed; in many places black and gangrenous; in others, adhering from effusion of coagulable lymph. The diseased portion was greatly distend-

ed, and contained much dark-coloured fluid, but no feces. Immediately below this part the intestine became at once completely contracted, empty, and of a white colour, except a few streaks of superficial redness.

V.—Inflammation of the Villous Coat passing into Enteritis.

Case XIII.—A woman, aged 38, had been for more than a week affected with fever, want of appetite, and frequent diarrhœa, with much pain, when, on 13th June 1819, she was suddenly seized with most violent pain of the abdomen, especially about the lower part; but it afterwards extended over the whole abdomen. On the 20th the pain continued most violent, and was increased by pressure and by inspiration. Pulse 130; urgent vomiting. An attempt was made to bleed her, but very little was obtained, and soon after the pulse sunk, with coldness of the body; some discharge from the bowels. (21st.)—I saw her for the first time. Pain still severe; urgent vomiting, and hiccup; bowels obstructed; pulse 140. Died in the afternoon. *Dissection.*—Extensive inflammation on the outer surface of the small intestine, especially at the lower part, where there was considerable exudation and gangrene. Extensive inflammation of the inner surface in various places; and the inflamed portions were covered with minute ulcers or erosions. At one place, at the lower part of the ileum, there was a more extensive destruction of the villous coat, about the size of a shilling; this portion was surrounded by a ring of inflammation, with numerous small ulcers, and in the centre of it there was a small opening which perforated the intestine; the outer surface at this place was of a dark livid colour.

The high importance of the subject must be my apology for detailing so many examples, calculated, I trust, to illustrate the pathology of this most insidious and dangerous disease. They seem to warrant various pathological conjectures and important practical conclusions, both of which I must propose very briefly.

I.—*Pathological Conjectures.*

(1.) It is probable that intestinal inflammation may be primarily seated either in the peritonæal, the muscular, or the villous coat,—that it may be for a considerable time confined to one of them; and may afterwards pass from one to another, or may affect all the three.

(2.) It is probable that the terminations of inflammation are, in the peritonæal coat gelatinous exudation and serous effusion;

in the villous, erosion or ulceration, sometimes with exudation; in the muscular, gangrene.

(3.) It is probable that, when the inflammation is confined to the villous coat, the action of the canal is increased,—when to the peritonæal coat, that it may be increased, or may be natural,—that, when it affects the muscular coat, the action is impeded so as to produce obstruction or ileus.

II.—*Practical Conclusions.*

(1.) Extensive and highly dangerous inflammation may exist in the intestinal canal without obstruction,—may exist and go on to a fatal termination while the bowels are spontaneously loose, or are easily moved by mild medicines.

(2.) No diagnosis can be founded in such cases on the appearance of the evacuations; they are sometimes slimy and in small quantity; sometimes copious, watery, and dark-coloured; and sometimes quite natural.

(3.) Extensive and highly dangerous inflammation may be going on with every variety in the pulse. It may be frequent and small, it may be frequent and full, or it may be little above the natural standard through the whole course of the disease.

(4.) Extensive inflammation may go on without vomiting and without constant pain, the pain often occurring in paroxysms and leaving long intervals of ease.

(5.) The peculiar tenderness which marks inflammation is the principal guide of the practical physician. Whenever this occurs, whatever may be the state of the pulse, and whatever the condition of the bowels, a disease is going on which will require his most eager attention, and his most active remedies.

Outline of the Treatment of Intestinal Inflammation.

In the treatment of this affection it is of essential importance that our attention be steadily and precisely directed to the real disease with which we are contending, and be not distracted by circumstances which may be considered as occasional effects of it. The disease is inflammation; and to subdue that is our great, our leading object in the treatment. An effect or concomitant by which our attention is apt to be distracted in many cases, is obstruction of the bowels. Now, this obstruction is not the disease,—it is only an effect of it, and an effect which, even

in the severest cases, is often wanting. This we have seen in various examples. We have seen the bowels obstructed,—we have seen them natural,—and we have seen them spontaneously loose; and under these various circumstances we have found the disease going on with equal certainty, and equal rapidity, to a fatal termination. We have seen no reason to suppose that the retention of feculent matter was injurious in the one case, or that the copious evacuation of it was productive of the slightest benefit in the other. On the contrary, there are facts which must lead to a suspicion that the action of purgative medicine upon the intestinal canal, when it is in a state of inflammation, rather tends to increase than diminish the disease. I do not assert that this principle is applicable to every case without discrimination. There may be examples in which acrid and irritating contents are acting injuriously, and there may be cases which supervene upon ileus, to which perhaps other principles must be applied. But I think it must be admitted that, in the ordinary cases of enteritis, the obstruction of the bowels is the immediate result of the inflammation;—that it is to be removed by subduing the inflammation, and by this only,—and that, could it be removed by any other means, it would in no respect improve the situation of the patient, as the original and highly dangerous disease would remain unchanged. On this important and delicate point I would not speak with unbecoming confidence; but I do submit, whether the whole phenomena of abdominal inflammation do not lead to the impression, that the use of purgatives is no part of the treatment in the active stage of the disease, and whether they are not likely to be injurious rather than beneficial. Even in the cases in which there is no obstruction, but in which mild purgatives operate readily, the patient generally complains of aggravation of the symptoms after their operation. How much more likely is this to occur in cases of proper enteritis, in which active purgatives are often given in repeated doses without avail? If benefit in these cases be expected from evacuation of the bowels, that benefit is not obtained, while there can be little doubt that an additional cause of irritation is thrown into the diseased parts; and why is this object thus defeated? because there exists in the intestine itself a disease which prevents its action, and which prevents purgatives from producing their usual effects. It would no doubt be desirable, in many of these cases, that the canal were freed from the presence of feces; but the question is, whether the injury from their presence can be compared with that which must arise from violent and ineffectual efforts to expel them,—from violent and ineffectual excitement of parts which

are already in a state of active inflammation. I have formerly referred to a fact which is also of essential importance in this inquiry; that, when purgatives do operate in cases of this kind, they generally bring off nothing but watery matters; and that it is only after the disease is subdued, and the bowels have recovered their healthy action, that solid feces are thrown off, which, we have every reason to believe, had been lodging from the commencement of the disease. There are, then, two views of this important subject which I submit for investigation and inquiry. (1.) That in the cases which I have considered as peritonitis, in which purgatives operate fully, we have no reason to consider their operation as beneficial during the active stage of the disease. (2.) That in the cases of proper enteritis their operation is defeated by the very disease with which we are contending.

In the treatment of enteritis, indeed, it is of essential importance that the intestines should be kept free from distention; but it is a point deserving most attentive inquiry whether this may not in general be done by means which are both safer and more effectual than the use of purgatives; particularly whether there be not, in the ordinary cases of enteritis, an action in the healthy part of the canal itself, which would answer every purpose that can be desired, did there not exist some great obstacle to its action, and whether our object ought not to be to remove this obstacle rather than to increase the action itself. The obstacle arises from the deranged action of the inflamed parts, and the chief means by which it is to be removed are those by which we subdue the inflammation; but there is a powerful auxiliary, which I think is calculated to answer the purpose for which purgatives are given, and that is the tobacco injection. I have formerly alluded to the precautions with which this very powerful remedy ought to be administered; the great advantage attending the use of it in enteritis is, that, while it tends to move the bowels and keep them free from distention, it is, at the same time, powerfully calculated to allay vascular action, and may thus assist in keeping down the inflammation.

These principles I submit for farther investigation. Several facts which I have related certainly give considerable reason to believe, that, when the intestinal canal is in a state of active inflammation, the tendency of purgatives is rather to increase than diminish the disease; and I think I am warranted in proposing this rule,—that they are not to be considered as a part of the treatment of enteritis, but rather to be avoided, if it be possible; that is to say, except there exist some strong and decided reason for having recourse to them. What the cases are

in which such reasons exist must be left to the judgment of the practitioner; perhaps in those which have supervened upon long continued costiveness or ileus, and when there is such a distention of the bowels with flatus or other matters, as must be highly injurious. In such cases, if we fail in obtaining the desired effect from the tobacco injection, or mild laxative injections, mild purgatives may be necessary, after the first activity of the inflammation has been subdued. But in how many instances are these causes wanting?—Do we not often see enteritis supervene upon the powerful operation of a drastic purgative, especially on exposure to cold after such operation? And in how many cases do purgative medicines which have been taken on the first appearance of the symptoms operate fully? To push the use of purgatives in such cases would be manifestly unnecessary, and probably injurious. The disease which we have, then, to contend with, is simply inflammation, and it must be combated in the most active manner by the appropriate remedies. These are few and simple; the most important is bloodletting repeated according to the urgency of the symptoms and the strength of the patient. Of local remedies, large topical bleeding and blistering are often extremely beneficial. In a considerable number of cases I have used with evident advantage the application of cold, by covering the abdomen with cloths wet in cold water or iced water, or by pounded ice in a large bladder. Of iced water given by injection I have had little experience, but I believe it to be a remedy deserving of attention. The inflammation being subdued, the bowels are then to be moved by gentle laxatives, aided by mild injections. This, however, is often a matter of considerable difficulty, arising, I imagine, from a weakened or paralysed state of the muscular fibres, which has been produced by the inflammation. I cannot say with confidence what is the best mode of treatment, but I think that mild medicines, in moderate doses, repeated at short intervals, and steadily persevered in, succeed better than the more powerful. Perhaps long-continued friction of the abdomen may be useful, and warm-bath. Our object should be to produce natural and healthy evacuation, and nothing more. Strong purging may be followed by a tympanitic state of the abdomen, not to be recovered from.

In all cases of active inflammation, bloodletting can be of little avail except it be used at an early period, and pushed to such an extent as to make a decided impression upon the system, indicated by weakness of the pulse, paleness, and some degree of faintness. During this state of collapse, an impression is made upon the disease, which, however, is often lost, as soon

as the circulation has recovered its former vigour. On this account, in every inflammation of a vital organ, it is, I think, of essential importance, that the first bleeding be carried to such an extent as to make a most decided impression, and that attention be paid to prevent this advantage from being lost, by repeating it after a short interval, whenever the effect of the former begins to subside. In various inflammatory diseases I have used with manifest advantage the following method. The treatment is begun with a full bleeding, which produces weakness of the pulse and a considerable degree of faintness; the latter soon subsides, but the pulse continues weak for a longer time. Whenever it begins to recover from this weakness, a small bleeding is repeated, so as again to break the force of it, and for this purpose, perhaps, no more may be required than five or six ounces. Such a bleeding is again repeated at another very short interval, and so on till we have reason to believe that the disease is subdued. The advantage of this method is twofold. (1.) By thus keeping up the effect of the first bleeding, the disease is likely to be checked at a very early period; and, (2.) The quantity of blood that is lost, is in the end much smaller than may often be required under other circumstances. For if, instead of this, we allow the patient to lie after the first bleeding ten or twelve hours, or even a shorter period, the effect of it is often entirely lost, and it is then necessary to repeat it to the same extent as before. Twenty ounces of blood may be required upon this method for producing that effect upon the system, and, consequently, on the disease, which, on the other, may be procured from five; and, besides this, in the interval the disease has been gaining ground, its duration is protracted, and the result consequently rendered more uncertain. The inflammation of a vital organ should not be lost sight of above an hour or two at a time, until the force of it be decidedly broken; and except this take place within the first twenty-four hours, the termination of it must be considered as doubtful.* On this important subject I shall only add the following beautiful illustration of the effect of bloodletting in inflammatory diseases. A man, aged 24, after being for several days affected with acute rheumatism, was seized with a strong pulsation in the region of the heart, which, after two days, was accom-

* In a violent inflammatory case, in which it is probable that repeated bleeding may be necessary, great benefit is obtained from the very simple expedient of inserting a little ointment between the lips of the orifice after the first bleeding. Adhesion is thus prevented, and blood may be taken from the same orifice many times.

panied by acute pain in the same situation, and anxious oppressed breathing. These symptoms had continued one day when I first saw him; the pain was violent, and impeded respiration; the breathing was so much oppressed as to prevent him from lying down, and the pulsation of the heart was so violent that it could be felt by the hand over every part of the thorax, and even on the upper part of the abdomen. The pulse was 106, and intermitted about twelve times in a minute. Several of his joints were still affected; his feet and ankles particularly were swelled and intensely painful, incapable of bearing the slightest touch or motion, and in a state of high vivid inflammation, resembling erysipelas. He was bled to above thirty ounces, which he bore without faintness. Two hours after I found the symptoms somewhat relieved, but by no means removed, and the inflammation of his feet as before; the pulse 112, and strong. He was then bled to eighteen ounces. When that quantity was taken he became extremely faint, and the pulse exceedingly weak; and he lay in that state of faintness for upwards of half an hour. During this time every symptom in the thorax was removed, and the inflammation of his feet completely disappeared; they became of a pale and natural colour, and could be pressed or moved in any way without uneasiness. On the following day he continued well. After another day or two the rheumatic affection returned to his ankles, but in a slight degree, and without fever, and it soon yielded to the usual remedies. The value of this case depends on the beautiful illustration, furnished by the disease on the ankles, of what was probably going on within, and of what probably takes place in every internal inflammation when the remedies are employed in a decided manner.

Before I conclude these very general remarks, I would briefly allude to some circumstances which often occur during the treatment of enteritis, and which are apt to embarrass the young practitioner.

1. The pulse continuing very frequent after the local symptoms appear to be considerably subdued by repeated bleeding. While this continues there is always danger of the inflammation being renewed. In this state digitalis is given very freely with much advantage.

2. A tympanitic state of the abdomen. If this occur before the inflammation is subdued, the prognosis is extremely unfavourable. But it may occur after the disease is checked, from a temporary derangement of the muscular action. It, however, requires most minute attention. Gentle friction may be employed, and the pressure of a roller. Mild injections are useful,

to which a little assafœtida may be added; but I think I have seen the greatest advantage in this condition from injections containing bark in powder in large quantities. Mild laxatives may be given, but medicines that would act strongly are to be avoided. These excite for the time, but when their action is over the parts are only still farther exhausted, become again distended, and may pass into gangrene. The disease is a loss of muscular action which is left by the inflammation, and it requires the most delicate management. It has frequently an alarming appearance, and may leave for a considerable time a deranged action of the parts, which often assumes the characters of organic or mesenteric disease. A boy, aged six, had acute pain in the abdomen, much increased by pressure and by inspiration; short, anxious breathing; pulse extremely frequent. He was bled from the arm, and took some laxative medicine which operated, and he was very much relieved. He then did well for two days, when, on visiting him at night, I found him oppressed and restless; countenance anxious; pulse above 140; the belly enlarged and tympanitic, and painful on pressure. Injections, containing bark in powder, and some tincture of assafœtida, were given every three hours with great relief, with friction, &c. Under this treatment the affection soon subsided, and in a few days he was able to be out of bed, but he continued feeble and sallow, with some cough, bad appetite, frequent pulse, and a withered emaciated appearance. Being sent to the country he recovered gradually, and is now in perfect health, but he continued in the state which I have mentioned for several months. I am persuaded that many cases, especially in children, which assume the appearance of mesenteric disease, depend upon a morbid condition of the muscular action of the canal, which impedes the process of digestion and assimilation. It is treated by good air and exercise, tepid bath, friction of the abdomen, with gentle compression, and vegetable bitters, as the colombo powder, combined with small doses of rhubarb or aloes.

3. A state different from the former, in which the abdomen is somewhat enlarged but hard, almost resembling, in some cases, a mass of organic disease. This is a formidable symptom, but if it occur after the inflammation is subdued it may be recovered from. The nature of it is obscure. It is certainly connected with some degree of intestinal distention, but it is not tympanitic; it is hard and tense, sometimes painful on pressure, and has an alarming appearance. A young man, aged 17, whom I attended in a severe attack of enteritis, was free from complaint about the 7th day from the attack. On the 9th his pulse began to rise again; and his belly, especially about

the lower part, became enlarged, very hard, and painful on pressure; the bowels open; his pulse, when sitting up, 120. In this state, in spite of every remonstrance, his friends carried him to the country. I expected to hear of his death, but the affection gradually went off, and he returned to town, in a few weeks, in perfect health.

4. Cessation of the pain, sinking of the vital powers, great weakness of the pulse, and coldness of the body. These are generally considered as indicating gangrene, and, consequently, a hopeless state of the disease. I have in the former paper on ileus produced evidence of the most important principle, that these symptoms do not necessarily indicate gangrene. I have shewn them connected with inflammation which was slight and recent, and I have shewn them recovered from. I shall now only add the following example. A man, aged 40, was affected with enteritis in the usual form, for which he was treated in the most judicious manner by a respectable practitioner. On the 5th day the pain ceased; the pulse was 140, and extremely feeble and irregular. His face was pale, and the features contracted, and his whole body was covered with a cold perspiration; his bowels had been moved. In this condition I saw him for the first time. Wine was given him to the extent of from two to three bottles during the first twenty-four hours. On the following day his appearance was improved, his pulse 120, and regular; the wine was continued in diminished quantity. On the third day the pulse was 112, and in a few days more he was well.

In a case such as this there could be no doubt as to the only mode of practice that could be attempted, but there are cases in which, at a particular period of the disease, wine is given with much advantage, though the symptoms are much more ambiguous; and it is often extremely difficult to decide upon the plan which ought to be adopted. A lady, aged about 35, on the 7th day after delivery, was seized with violent pain over the whole abdomen, most severe across the stomach and towards the right side; much tenderness on pressure; urgent vomiting; great restlessness; respiration short and oppressed; pulse 140, and sharp. The pain was aggravated by inspiration, and by every motion of the body. She was bled and blistered, and took laxative medicine, which operated freely. After the bleeding she was very much relieved; could breathe without uneasiness; the vomiting subsided, and the pulse was much diminished in frequency. This was in the night. On the following day the pulse rose to 150; the breathing was quick, short, and oppressed; some vomiting; countenance

was neither pain nor tendernesss of the abdomen, which was to the feel soft and natural; lochia natural. Wine was given in the quantity of a small glass every hour; and injections of beef-tea, each containing ℥ss. of bark in powder, and 60 drops of laudanum. These were repeated as often as they were discharged, which was generally from one to two hours. After some hours the symptoms were improved. Next day the pulse was from 125 to 130; on the third day from 112 to 120. Thus she gradually recovered, having continued to take a bottle of wine in each twenty-four hours. For some time she suffered severely from an aphthous state of the mouth and throat, accompanied by burning uneasiness at the stomach, and pain in the bowels. These complaints yielded to a decoction of logwood.