knowledge, exploratory operations for the relief of abdominal obstruction, the cause of which cannot be diagnosed, are not warrantable. Operations performed at the hernial regions, in search, it may be, for suspected *réduction en masse*, are, of course, quite outside this rule. It refers only to opening the abdomen in the middle, with the intent to introduce the hand and search for the obstructed part.

If, however, we turn to certain cases in which the precise cause of obstruction is definitely diagnosed, then a very different decision must be arrived at. In cases of invagination, when the included tract is long and when other measures have been exhausted, abdominal section is probably the best method of treatment. Here the surgeon knows what he is going to attempt, and that in the majority of cases it can be easily accomplished. The operation is justifiable at a comparatively early stage, when there is not much risk of rupture of the bowel, and but little difficulty may be expected in getting the contents back into the abdomen. Yet even here the operator encounters the discouragement of knowing that Nature is competent to the cure by sphacelus of some of the most desperate forms of intussusception, and it is not yet settled whether leaving them to this chance involves less or more risk than operating. My own opinion is, however, definite; and in any such case, enema, insufflation, and other measures, having had patient and repeated trials, I should not hesitate to open the abdomen. I have done this in two cases, and in one of them with perfect success; and successful cases have also been recorded by Mr. Howard Marsh, Mr. Howse, and other surgeons. In the peculiar form of intussusception beginning at the cæcum and advancing until the inverted ileo-cæcal valve presents at the child's anus, I should suspect that an operation will always be required, for I know of no reliable record of the recovery of such a case either by gangrene or by the measures to which we may apply the name of rectal taxis.*

It will be obvious to any one conversant with the present state of our knowledge in respect to the causes of obstruction, the diagnosis of its different forms, and the best means for their relief, that great advance has been made of late years. Our gains have been, as usual, the result of the combined labours of many. I regret much that the short time at my disposal has wholly precluded any attempt to mention in their proper place in my paper the various steps taken and the names of those to whom we have been indebted for them. It would, however, be alike ungracious and ungrateful if, speaking as I do at the request of our Association, I were to omit to mention that, amongst our own contemporary countrymen, we owe very much to the labours of Mr. Phillips, Dr. Peacock, Mr. Gay, Dr. Wilks, Dr. Bristowe, Dr. Hilton Fagge, Mr. Callender, Mr. Bryant, Dr. Buzzard, Mr. Waren Tay, Mr. Wagstaffe, Dr. Spender, and Dr. Stephen Ward. To all these observers we owe thanks for the careful record and analysis of facts, and for important suggestions made in connection with them. To Mr. Maunder, Mr. McCarthy, and Mr. Wagstaffe, we are indebted for the revival of the operation for artificial anus in the right groin, and for three successful cases. Mr. Bryant and Mr. Howse have each had successful cases of exploration in the inguinal region and division of bands; and Mr. Howse and Mr. Howard Marsh have both opened the abdomen for intussusception and saved their patients. Mr. Hancock and Dr. Buchanan of Glasgow have each proved by a case of recovery that abdominal incision in cases of obstruction from peritonitis is not necessarily fatal, and may, perhaps, be beneficial. I am not aware that anyone in English practice has yet succeeded in saving a patient by incision in the linea alba in order to search for bands, etc. Many operations of this class have been performed; and, amongst others, Mr. Hilton, Mr. Hulke, and Mr. Annandale, have the satisfaction of knowing that their measures were based upon a correct diagnosis and deserved a success which unfortunately they did not obtain.

* My opinions on this subject will be found in detail in two papers in the *Medico-Chirurgical Transactions*.

ABSORPTION OF QUININE BY THE PLACENTA.—M. Porak has published a series of researches relating to sulphate of quinine, from which it results that this salt passes slowly through the placenta, since its presence is very constantly found in the urine of newly born children when the administration of the medicine has preceded delivery by an hour and a half. A dose of seven grains and a half, and often a little less, suffices to prove the passage of sulphate of quinine through the placenta. Sulphate of quinine, administered to parturient women, appears to exercise an injurious influence on new-born children. This is seen in the greater frequency of icterus, and in the notable wasting of the children during the first days which follow birth. This medicine should not, therefore, be employed as an oxytocic.

LARGE DOSES OF BELLADONNA IN INTESTINAL OBSTRUCTION.*

By NORMAN KERR, M.D., F.L.S., London.

CASE I.—In July 1873, I was called to M. B., a charwoman, aged 68, and found her suffering from severe pain in the right inguinal region, great abdominal distension, stercoraceous vomiting, hiccup, extreme prostration, dry and deeply coated tongue, pulse 102 and thready. She had been suddenly seized, while washing nine days previously, with pain in the abdomen, followed at once by faintness, nausea, and simple vomiting. There had been no motion of the bowels since. Strong purgatives had been tried. The case seemed hopeless, and the patient said she was dying. After an enema of warm water and ten grains of colocynth and hyoscyamus had proved ineffectual, she became so prostrate that the last rites of her church were administered. Looking at the case as beyond hope of recovery, I gave what seemed to me then an heroic remedy—viz., two grains of extract of belladonna every hour. To the intense though agreeable surprise of all, in eight hours, when she had taken sixteen grains, there was copious relief; and she made a steady recovery, leaving her bed seven days thereafter. She is still alive and well. Ice, iced milk, and soda-water by the mouth, and beef-tea enema by the rectum, were administered before the alvine evacuations set in, and were continued for eighteen hours afterwards. Constant opiate fomentations and repeated enema of warm water were the only other remedies employed. This case occurred in country practice, as also did No. 2.

CASE II.—In October 1873, I saw S. H., wife of an agricultural labourer, aged 42: she had been confined of a living child twelve days previously. Her abdomen was enormously distended; she had constant pain in the right inguinal region, no motion since her confinement; vomiting had lasted for four days, and had been stercoraceous for six hours. She had a coated tongue; pulse 100; great depression and distress. It was thought that she was dying, and the parochial officer was sent for (for whom I attended), as she said the doctor and midwife who had officiated at the birth had declined to attend her now. She had taken three ounces of castor-oil, an ounce of salts, and twelve "Beecham's pills" (said to be worth "a guinea a box"). The treatment consisted of warm enema, hot opiate fomentations, nourishing enema, and two grains of extract of belladonna every hour. In six hours, after taking twelve grains of the belladonna, she had abundant relief. Complete recovery followed in five days.

CASE III.—This and the following cases were in London. In August 1874, J. C., shoemaker, aged 34, had had no motion for twelve days. He had had simple vomiting four days, stercoraceous five hours. Pulse 102. He had great abdominal distension, and pain in the right lumbar and umbilical regions; pallid countenance; and clammy perspirations. When I saw him, he said he was dying, and looked like it. He had taken salts, castor-oil, and pills. The treatment consisted in fomentations, warm enema, gruel, and beef-tea *per rectum*, ice and extract of belladonna in two-grain doses every hour. He was relieved in seven hours and a half, after taking fourteen grains. This I believe to have been a case of obstruction at the junction of the ascending with the transverse colon, arising from inflammation and narrowing of the colon, caused by drinking and aggravated by mechanical pressure from the posture he was compelled to adopt in the exercise of his calling. He is still alive, and as healthy as a spasmodic drunkard can hope to be.

CASE IV.—In November 1876, S. H., female, aged 78, had had no motion for thirteen days. There was considerable abdominal distension. Vomiting had been simple seven days, stercoraceous eight hours. She was anxious, depressed, and delirious, and had severe epigastric pain. The treatment was fomentations, enema, and extract of belladonna one grain every hour. Relief followed after taking nine grains; recovery was rapid. There have been two attacks of obstruction of a similar nature since; the first, which had lasted for eight days, yielded to seven grains of the belladonna extract; and the second, which had lasted seven days, to five grains.

CASE V.—In February 1877, M. S., female, aged 58, with umbilical hernia of long standing, had had four attacks of obstruction. I attended her in the second, third, and fourth. On the first of these latter, there had been no motion for eight days. Pulse 100. There was great abdominal distension. Vomiting had lasted six days, and had been stercoraceous seven hours. She had violent and continuous epigastric pain. The treatment consisted of fomentations, enema, and brisk purgative. There being no effect in four hours, one grain of

* Read in the Section of Medicine at the Annual Meeting of the British Medical Association in Bath, August 1878.

belladonna extract was given every hour; and, after nine grains had been taken, copious alvine evacuation ensued. In two attacks since, the latest being last month, eight grains and nine grains respectively were effectual.

No alcohol was prescribed in any of the above cases, but patient No. 1 took about two ounces of port wine before the belladonna treatment was begun. In the after-treatment, and as a preventive of obstruction, the most effectual remedy I have found has been pulvis glycyrrhizæ composita. The belladonna treatment was suggested to me by the perusal of a paper by Mr. Macrae of Gateshead-on-Tyne in January 1873.

ON LATENCY OF SYMPTOMS IN ACUTE ABDOMINAL AFFECTIONS.*

By E. MARKHAM SKERRITT, B.A., M.D. Lond., M.R.C.P.;

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IN a discussion on the diagnosis and treatment of the causes of intestinal obstruction, it has occurred to me that a paper will not be out of place which gives the results of an experience that perhaps has been somewhat exceptional: an experience in which it has been the rule in acute abdominal affections for the symptoms to be more or less obscure and latent, so that the condition present has not been marked by those features which are usually described as its characteristics. And, as in several of the most striking instances the chief clinical fact has been obstinate constipation, the importance of such cases has been impressed upon me as influencing the diagnosis, and therefore the treatment, of cases of intestinal obstruction.

A brief outline of several instances will best support my statement.

A woman aged 47 was admitted into the Bristol General Hospital, with a history of ten days' complete obstruction of the bowels. There had been three similar attacks during the preceding five years. There was a total absence of all acute symptoms, both local and general. There was no anxiety or pain; the pulse was good; the temperature normal; the skin warm and moist; the tongue perfectly clean; the abdomen was much distended, but entirely free from pain and tenderness; there was no vomiting. Two days later, without any previous change, symptoms of perforation set in suddenly, and the patient died. On *post mortem* examination, there was no mechanical obstruction; but intense peritonitis existed; over the caecum and adjacent part of the colon, the peritoneum was mottled with dark ecchymoses and greyish-black gangrenous patches; and inside this portion of the gut were deep gangrenous ulcers with sloughy and blackly ecchymosed bases and edges.

In this case, the cause of the obstruction was thought to be probably fecal accumulation; it proved to be cessation of peristaltic action from intense enteritis. And yet there had been an entire absence of all acute symptoms up to the occurrence of perforation.

Again: last May, a young man aged 19 was admitted into the Bristol General Hospital. A week before, there had been vomiting and diarrhoea for two days, without any febrile symptoms; vomiting had continued, but diarrhoea had given place to complete constipation. The pulse was 80, large and soft; the temperature subnormal; the tongue almost clean; the abdomen moderately distended, almost free from pain, and but very slightly tender at the lower part on firm deep pressure. There was frequent bilious vomiting. Two days later, without the development of any further special symptoms, the patient sank rather rapidly and died. On *post mortem* examination, there were ulceration and perforation of the vermiform appendix, peritonitis, enteritis throughout the whole small intestine, and, from three inches above the valve, the ileum was plugged for four inches with a solid fibrinous cast. Here the only positive clinical evidence was the presence of constipation with persistent bilious vomiting. As the onset was acute, the absence of the causes of chronic obstruction was indicated; and, in the decision between those of acute obstruction, there was one point to which great importance was attached: the two days' diarrhoea which preceded the constipation; this was looked upon as strong evidence in favour of enteritis apart from any suddenly produced mechanical obstruction. This conclusion was adhered to in spite of the almost entire absence of those symptoms and signs usually described as characteristic of intense enteritis, for the reason that, in my experience, it had been the exception for such acute abdominal affections to resemble the descriptions ordinarily given of them.

Again, a patient was lately admitted suffering from a severe attack of acute dysentery. Up to the time of his death, there was but little pain, and the abdomen was soft and flaccid, and almost free from tenderness. And yet the *post mortem* examination showed that peritonitis existed; that perforation had taken place; and that the whole of the large intestine had been transformed into a mass of ragged sloughs, and was so rotten that, in removal from the body, it fell to pieces and became quite unrecognisable.

With regard to acute peritonitis, I cannot say that I have never seen a case typical according to the usual description of this condition; but I must say that such a case has been the exception; and that, in the majority of instances I have met with, there has been an absence, to a greater or less degree, of the so-called typical symptoms. In fact, my experience has compelled me to teach that, although the presence of the symptoms usually described as characteristic of acute peritonitis is most valuable, yet their absence, local or even general, does not by any means negative the existence of that disease.

The bearing of what I have said upon the question of diagnosis in intestinal obstruction is obvious, inasmuch as more or less complete cessation of the action of the bowels accompanies acute peritoneal inflammations and the graver forms of enteritis; and, if these conditions are not marked by their distinctive symptoms, there is great chance that the true nature of the condition may be overlooked, and the constipation put down to some one of the causes of chronic obstruction of the bowels.

And yet I think that this latency of symptoms is not without its positive value in diagnosis; for I believe that, where the obstruction is due to some suddenly induced mechanical cause relievable by timely operation, the acute symptoms are far more commonly pronounced; that in such a condition their absence is the exception; and that, therefore, an absence of urgent symptoms is so far evidence against the utility of surgical interference.

My experience has, therefore, led me to the following conclusions.

1. An entire absence of acute symptoms may coexist with an intense local inflammation; and therefore it is prudent, in all cases of intestinal obstruction, to adopt treatment consistent with this knowledge.

2. If, in a case of intestinal obstruction, urgent symptoms are in abeyance, this is so far in favour of the view that the obstruction is either non-acute, or, if acute, is not to be relieved by operation.

I have been induced to bring this paper before you, in order that I may learn how far my experience in acute abdominal affections has been consistent with that of members present who are far better qualified than myself to speak authoritatively upon this subject.

RESPIRATION OF ASCENDING AND DESCENDING RHYTHM.

By W. JULIUS MICKLE, M.D.,

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IN its typical form, this remarkable phenomenon consists of a respiratory cycle in which respiration, at first light and unfrequent, becomes, by an ascending scale, fuller, more forcible, frequent, and exaggerated, until marked dyspnoea is attained; and which gradually subsides, by a descending scale, to a condition of complete apnoea, that persists for a considerable period and completes the cycle; after which a fresh cycle begins by light and almost imperceptible respirations. Each cycle is naturally divided into the period of apnoea and the period of respiration or dyspnoea. First described by Cheyne, and nearly thirty years later by Stokes, it is often named after them; and to the Irish school we are indebted for much that is known on the subject. Yet it is possible, as believed by the late Dr. Warburton Begbie, that Hippocrates observed and recorded an instance of it in the case of "Philiscus, who dwelt near the wall", and died on the sixth day of the duration of an acute illness, in the course of which were marked nervous symptoms, and whose respiration throughout was "large and rare, like that of a person who required to be reminded to breathe".

The three recorded in this paper are the only cases in which I have detected typical respiration of ascending and descending rhythm (Cheyne-Stokes) among the insane. In the first, the general extreme atheroma of the arteries was the most striking feature observed at the necropsy; the atheromatous change, with the resulting rigidity, inelasticity, and tendency to dilatation, being most marked in the thoracic aorta, the left subclavian, and the coronary and cerebral arteries; whilst the principal cardiac alterations were dilatation and hypertrophy of the left ventricle. Associated with these changes was the chronic renal disease, and the Cheyne-Stokes respiration was not developed until

* Contributed to the discussion on the Diagnosis and Treatment of the Causes of Intestinal Obstruction, in the Medical Section at the Annual Meeting at Bath.