NOTES ON INTESTINAL OBSTRUCTION: ITS DIAGNOSIS AND TREATMENT.*

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MR. PRESIDENT AND GENTLEMEN,—The first suggestion which it seems necessary to make in reference to the subject which we are assembled to discuss concerns a source of fallacy in diagnosis. Not only is it very difficult in many cases of *band fide* mechanical obstruction to form a correct opinion as to the cause, but there are, I believe, very numerous cases supposed to be obstruction which are not really such at all. I refer to cases in which constipation, pain, and vomiting—the three cardinal symptoms of occluded intestine—are met with in connection with peritonitis, perityphlitis, the passage of a gall-stone, or the impaction of a calculus in the ureter. In each of these, the simulation of acute obstruction is often most deceptively close. The sickness is often urgent, the constipation appears to be insuperable, and the whole aspect of the case seems to indicate “a stoppage”. Yet the symptoms are not due to any mechanical cause, but for the most part to reflex disturbance. I have no doubt that many cases of this kind have passed as recoveries from obstruction, and have gone to exalt the reputation of this or that special method of treatment. Many years ago, I obtained a *post mortem* examination in the case of a gentleman, aged thirty, for whom, during life, we had used enemata and anaesthetics, suspecting obstruction. It proved to be one of general peritonitis from perforation of the appendix. More recently, in the case of a little boy, whom I saw at Bournemouth, in whom urgent symptoms of obstruction had developed suddenly, Mr. Gregory White, who made the necropsy, found a precisely similar condition of things. In each of these cases, the propriety of opening the abdomen had been discussed; and although I had declined it in both, yet, so difficult had the symptoms been of interpretation, that in both I thought it right to administer anaesthetics and make trial of abdominal taxis. I have seen several other fatal cases in which I have been consulted for obstruction and diagnosed peritonitis; but, as no *post mortem* examination was obtained, they are of little value as evidence. In a case seen during the last year, with Mr. Corner of Poplar, which appeared very urgent, we examined under chloroform and diagnosed peritonitis, commencing about the caecum; and the child, under treatment by opium and entire absence from stomach-feeding, recovered. I might relate numerous cases in which what was supposed at first to be obstruction passed away with conditions—jaundice, etc.—which confirmed the suspicion of gall-stones, some of them even of extreme severity. In one of these, in which repeated consultations had taken place and strongly divergent opinions had been expressed, we agreed, when the bowels began to act, to have the stools carefully strained. This was done, and a gall-stone of the size of a horse-bean was found. I am, of course, not now speaking of cases in which gall-stones are large enough to block the bowel: these are obviously cases of obstruction; but of those in which the symptoms are due to a small stone impacted in the gall-duct.

There is no class of cases which illustrates more strongly than these the necessity, in all instances of supposed obstruction of the bowels, of taking down the facts with careful accuracy.† If the earliest symptoms be studied, there will usually be found some facts more or less inconsistent with the idea of obstruction. There may have been diarrhoea at first; or the symptoms may have set in with sudden and unwonted severity; or the pain may have been disproportionately severe; or it may be that the part in which the pain began is precisely that suggestive of gall-stones or of typhlitis. If the case be one of peritonitis or of perityphlitis, the history of a rigor at the onset and the use of the thermometer may help the diagnosis. Temperatures in abdominal cases are, however, often misleading. In other cases, the diagnosis may be helped by measures of treatment. Thus, the sickness may have been in part due to the persistence in attempts to give food or

medicine by the stomach, and the constipation to the fact that everything in the shape of purgative medicine has been promptly rejected by vomiting. In such, if the stomach be allowed absolute rest and purgative enemata be tried, all suspicion of obstruction may often be quickly removed. In many of these cases, however, it is to be admitted that, with every precaution, the diagnosis remains very obscure, until it is set at rest by the recovery or death of the patient. It is to be noted that they are almost all short cases, and that, if mistaken for obstruction, they are precisely such as might suggest the presence of internal hernia, volvulus, strangulation by a band, or some other condition susceptible of relief by operation. It is, therefore, most desirable that those surgeons who think favourably of abdominal operations for exploratory purposes, should be strongly impressed with the fact that many cases look like obstruction which are not so.

Leaving here the subject of simulation of obstruction, it may be convenient for the purposes of the discussion which is to follow, if we briefly enumerate the principal causes of real mechanical stoppage of the bowels. I must be content with the bare enumeration:

Intussusception;
Impaction of faeces or of foreign bodies;
Strictures—malignant, cicatricial, or simple;
Volvulus or twisting;
Internal herniae;
Strangulation by bands or congenital diverticula;
Pouching of intestine, and intestinal paralysis;
Pressure of tumours or dragging of the bowel out of place.

These, for practical purposes, may be suitably classed in four groups. The first of these is a large one clinically, but scarcely represented in the pathologists' lists: I refer to cases of impacted faeces. The second, intussusception, comprises probably half the fatal cases. The third, a very important group, includes all in which internal strangulation by bands, etc., is present; and it may be remarked that it is in reference to this group that the rules of treatment are the least settled. The fourth and last group comprises cases of stricture.

It cannot be too strongly insisted respecting the attempt to assign the special symptoms and course that, in connection with the particular region of bowel involved, very large differences result. In cases of “band” especially, the symptoms must vary with the part involved, its size, and the tightness of the constriction. On account of the omission to allow for these sources of difference, I find the rules laid down by authors somewhat unsatisfactory. These cases vary, indeed, as external herniae do; and, whilst some are strangulated, others are only incarcerated, and some perhaps simply irreducible.

I would suggest for the criticism of the meeting the following

MEMORANDA FOR DIAGNOSIS.

1. When a child becomes suddenly the subject of symptoms of bowel obstruction, it is probably either intussusception or peritonitis.
2. When an elderly person is the patient, the diagnosis will generally rest between impaction of intestinal contents and malignant disease (stricture or tumour).
3. In middle age, the causes of obstruction may be various; but intussusception and malignant disease, both of them common at the extremes, are now very unusual.
4. Intussusception cases may be known by the frequent straining, the passage of blood and mucus, the incompleteness of the constipation, and the discovery of a sausage-like tumour, either by examination *per anum* or through the abdominal walls.
5. In intussusception, the parietes usually remain lax, and, there being but little tympanites, it is almost always possible, without much difficulty, to discover the lump (or sausage-like tumour) by manipulation under ether.
6. Malignant stricture may be suspected when, in an old person, continued abdominal uneasiness and repeated attacks of temporary constipation have preceded the illness. It is to be noted also that the constipation is often not complete.
7. If a tumour be present and pressing on the bowel, it ought to be discoverable by palpation, under ether, through the abdominal walls or by examination by the anus or vagina, great care being taken not to be misled by scybalous masses.
8. If repeated attacks of dangerous obstruction have occurred with long intervals of perfect health, it may be suspected that the patient is the subject of a congenital diverticulum, or has bands of adhesion, or that some part of the intestine is pouching and liable to twist.
9. If, in the early part of a case, the abdomen become distended and hard, it is almost certain that there is peritonitis.
10. If the intestines continue to roll about visibly, it is almost certain that there is no peritonitis. This symptom occurs chiefly in emaciated subjects, with obstruction in the colon of long duration.

* Read in the Section of Medicine at the Annual Meeting at Bath, as an introduction to a discussion on the subject.

† For doing this, I would strongly recommend a plan which I described at the Association's meeting at Sheffield, and which consists in using a large sheet of paper, so ruled that an inch of space represents a day. It gives an admirable conspectus of a case.

11. The tendency to vomit will usually be relative with three conditions and proportionate to them. These are (1) the nearness of the impediment to the stomach, (2) the tightness of the constriction, and (3) the persistence or otherwise with which food and medicine have been given by the mouth.

12. In cases of obstruction in the colon or rectum, sickness is often wholly absent.

13. Violent retching and bile-vomiting are often more troublesome in cases of gall-stones or renal calculus simulating obstruction than in true conditions of the latter.

14. Fæcal vomiting can occur only when the obstruction is moderately low down. If it happen early in the case, it is a most serious symptom, as implying tightness of constriction.

15. The introduction of the hand into the rectum, as recommended by Simon of Heidelberg, may often furnish useful information.

MEMORANDA FOR TREATMENT.

1. In all early stages, and in all acute cases, abstain entirely from giving either food or medicine by the mouth.

2. Use anesthetics promptly. Put the patient under the full influence of ether; examine the abdomen and rectum carefully before tympanites has concealed the conditions; administer large enemata in the inverted position of body; and, if advisable, practise abdominal taxis. If you do not succeed at first, do it repeatedly.

3. Copious enemata, aided perhaps by the long tube, are advisable in almost all cases, and in most should be frequently repeated.

4. Fluid injections may be sometimes replaced by insufflation of air in cases of invagination, since air finds its way upwards better, and is more easily retained. It is, however, somewhat dangerous, and has, perhaps, no advantages over injections with the trunk inverted.

5. Insufflation is to be avoided in all cases of suspected stricture, since the air may be forced above the stricture, and there retained.

6. Saline laxatives are admissible in certain cases where impaction of feces is suspected, and in cases of stricture where fluidity of feces is advisable.

7. Opium (or morphia) must be used in proportion to the pain which the patient suffers. It should be administered by the rectum or hypodermically, and should be combined with belladonna. If there be not much pain or shock, it is better avoided, since it increases constipation and may mask the symptoms.

8. A full dose of opium administered hypodermically will put a patient in a favourable condition for bearing a prolonged examination under ether, and attempts at abdominal taxis.

9. In cases of uncertain diagnosis, it is better to trust to the chance of spontaneous cure or relief by repeated abdominal taxis, than to resort to exploratory operation; or, in desperate cases, iliac enterotomy should be done. Operations for the formation of an artificial anus in the right or left loin may be performed whenever the diagnosis of incurable obstructive disease in the lower bowel is made.

10. The operation for the formation of an artificial anus through the anterior part of the abdominal wall and into the small intestine should be resorted to only in certain cases of insuperable obstruction, in which the seat of disease is believed to be above the cæcum.

11. In all cases in which the precise seat of disease is doubtful, but the large intestine is suspected, the right loin should be preferred. If the colon here be found to be empty, the peritoneum may be cautiously opened and a coil of distended small intestine brought into the wound.

12. My last suggestion as to treatment is one which, speaking as I do in a Medical Section, I feel some delicacy in making. It is, however, I believe, a very important one, and it is this, that cases of mechanical obstruction are really surgical and not medical cases. They require manipulative measures both for diagnosis and for treatment, and they require them early. It is difficult to explain why it has come about that, as a rule, a physician is called in first, and nothing but drug treatment usually adopted in the early periods; and it is, I am convinced, much to be regretted. The surgeon is but too often asked to see the case only in the last stage, when it is thought that perhaps an operation may be desirable. At this period, the abdomen is distended, and an accurate diagnosis impracticable; but, what is worse, the stage at which abdominal taxis is most hopeful has passed. My remarks do not, of course, apply when the medical attendant possesses the knowledge and exercises the functions of both branches.

I find, on reference, that it is just twenty years since I wrote a paper advocating for all doubtful cases what I ventured to call ABDOMINAL TAXIS, and strongly dissuading from exploratory operations. Under the term abdominal taxis, were included all measures designed to effect the reduction of loops of intestine which had become twisted, misplaced, or strangulated, within the cavity of the abdomen. Chiefly, it implied putting the patient under an anæsthetic, and then alternately

lifting him by the legs and shaking him in the inverted position; then forcibly kneading the abdomen, giving enemata in the inverted position; and, lastly, making him lie for long periods on the belly, with the pelvis elevated. Since that paper was written, I have practised this kind of treatment in many cases, and I have never once opened the abdomen without knowing with tolerable certainty what I might expect to find. Whenever the diagnosis was uncertain, I have steadily refused to operate, or, if the case were not my own, have done my best to dissuade the surgeon in charge. Nor do I now see any reason to alter this rule of practice. It is true that a few cases die in which the *post mortem* examination reveals a band or a twist which it is probable that an operation might have relieved. I well remember that, soon after the publication of my paper, my friend Mr. Cooper Forster detailed in the *Guy's Hospital Reports* a case of this kind, in which the death seemed to be laid at my door. But it is not by isolated cases, but by general and average results, that the question must be judged; and, until either diagnosis can be made much more certain or the operation much less dangerous, exploratory abdominal section must, I think, be discontinued. The main argument against it is, of course, based on the fact that it is impossible to tell which cases are hopeless. It is within the experience of all that cases of most protracted obstruction, apparently in the most desperate state, not unfrequently recover without any obvious explanation. The case which chiefly prompted the paper to which I have referred was a most noteworthy one of this kind. A woman of middle age had suffered from obstruction during a long period, and appeared to be sinking. With the zeal of a young operator, I was most desirous to open the abdomen, and everything was prepared. I was dissuaded by some of my friends who were present, especially by Mr. Gay and Mr. Savory, who urged, not that the operation was not indicated, but that the woman was so ill that she would almost certainly die on the table. The operation was not done; but another attempt at abdominal taxis was substituted, and the woman recovered.* Many years after this, a case occurred to me in private which impressed itself on my memory. I was asked by two medical men of great experience to see a case with a view to exploratory operation. As I declined to do it, and the case appeared to them hopeless without, another surgeon was consulted. I still succeeded in carrying my point for non-interference, and our patient, although for several days in a most critical condition, finally made a good recovery. Another very similar one is detailed by my late colleague Dr. Bathurst Woodman in the *London Hospital Reports* for 1865. Here a woman aged 40 had experienced obstruction for twenty-five days, and her case had received every possible attention, both as regards diagnosis and treatment, at the hands of Dr. Davis, Mr. Maunder, and Dr. Woodman. Finally, with especial reference to opening the abdomen, a consultation of the whole staff was called. The operation was not done, and the patient recovered. It would be out of place to multiply facts of this kind; but I know that they are very numerous, and I hold that they prove conclusively that no one can tell when an abdominal obstruction case of uncertain diagnosis is hopeless, and that, unless it be practically so, the dangerous expedient of opening the abdominal cavity is not justifiable.

Let no one compare abdominal section under such circumstances with ovariectomy, or urge that recent observations as to the tolerance of the peritoneum afford legitimate encouragement to boldness in these cases. It is one thing to diminish the abdominal contents by the removal of a large tumour, and to deal with intestines which are healthy and empty; it is another and very different task to open an abdomen distended almost to bursting by inflated bowels which are in a state of disease and ready at various points to give way. However careful the operator may be, it is almost certain that he will finish in having half the intestines outside, and in being at his wits' end to get them back again; with, perhaps, the added horror of a rupture of the bowel and unlimited extravasation of feces. To reduce the bulk of the extruded bowel, acupuncture will have to be practised; and the surgeon will probably observe, just as he is returning the now collapsed coils, that little feculent bubbles of air are still escaping at his punctures. I speak not ignorant of misfortune. Antiseptic precautions may do much; but they can scarcely, I suspect, prevent the risk of peritonitis under such circumstances. It is clear that it is only in the early stage, before the intestines have become distended, that this operation can be performed with any fair chance of success; and at this stage I cannot think that any prudent surgeon would dream of resorting to it.

I venture to submit, then, to this meeting, as one of the most important propositions for our debate, *that, in the present state of surgical*

* It is of interest to add that in this case the patient, after an interval of some years' health, died in an attack of obstruction, but not under my observation.

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.*

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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.