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ITS CAUSES *and* TREATMENT

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CONSTIPATION; ITS CAUSES AND TREATMENT.*

By DAVID RIESMAN, M. D.

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PROBABLY the single complaint most frequently made by patients as we see them from day to day, is that of constipation. It is scarcely necessary to define this term; but there is in it a concept not always properly appreciated. By constipation, we ordinarily understand abnormal infrequency in defecation; but the condition may exist—and this is the concept that I have just referred to—with bowel-movements of average frequency, when the quantity of excreta is too small.

Constipation is most common in the female sex, and I think you will agree with me that it is rare to see an adult woman whose bowels move regularly. Constipation is also not rare in children, and is seen even in infants at the breast. At times, it is a sort of family attribute.

It is remarkable how well the general health often tolerates constipation. Even extreme degrees may be unaccompanied with any visible impairment of health. In such cases it is doubtful whether treatment is advantageous.

In the average case of constipation, the bowels move with difficulty once in two or three days; in more marked cases, once in four or five days or a week. Many patients have no bowel-movements unless they take physic; and there are rare cases in which the bowels move, spontaneously or with medicine, only at long intervals. I myself have seen a young girl whose bowels moved once in every month, at the time of the menstrual period. Her mother would often go two weeks without a bowel-movement.

Gould and Pyle, in their "Curiosities of Medicine," relate a number of cases even more remarkable than this. In the case of de Cabalis, the bowels did not move for thirty-seven days; and in that of Révolat, for six months. A patient of Tommassini's had, between the age of twenty and twenty-four years, a bowel-movement every eight or ten days; and at twenty-six, once in twenty-two days. When thirty years old, his appetite was so good that he would eat as much as two ordinary men; he suffered with intense thirst but his urine was normal in quantity and in quality; the abdomen was not enlarged, and the tongue was in good condition; no medicine benefited him. Emily Plumley lived one hundred and two days with an imperforate anus. She had but little nausea; and only occasionally had regurgitation of her mother's milk, due to overfeeding. Fleck reports the case of a man that had but five or six bowel-movements a year. In the intervals, he passed small quantities of hard feces once in eight or ten days; but the amount was so small that it constituted no more than the refuse of one meal. Two or three days before the principal evacuation, he would become ill and, after a sharp attack of colic, would pass a large quantity of hard, offensive material. He would then feel better for two or three hours, when the symptoms would be repeated; and so on, until he had four or five movements that day. On the following day, he would have slight diarrhea, and thereafter the bowels would return

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to their former condition. During the period of constipation, fecal accumulations could be seen and felt in the ascending and the transverse colon. The man, who was well nourished, was after a time practically cured at Marienbad.

It must not be forgotten that constipation may be associated with diarrhea. This diarrhea is due either to the irritation produced by the long-continued pressure of the fecal mass against the bowel-wall, or to a channeling of the column of impacted feces, permitting the discharge of liquid material through the channel.

To classify the causes of constipation is a difficult task, partly on account of the great variety of causes, and partly owing to the obscurity of some of these. A rather practical division is that into Functional and Organic.

A. FUNCTIONAL. The first of the functional causes is

Lack of Attention to the Bowels—the voluntary suppression of the desire to defecate. This factor is particularly operative in the case of women, whose occupation is frequently such that they do not care to interrupt it to perform what they consider a postponable act. When cooking, ironing, washing, or baking, they do not like to stop to empty the bowels. The sense of shame furthermore, frequently causes them to retain the bowel-movement. When away from home, they do not have access to places of convenience in the same degree as do men, who can enter public buildings, cigar stores, or taverns, to attend to the calls of nature.

Under the head of neglect or inattention, is sometimes placed the habit of reading at stool. This, Illoway considers a very pernicious habit, and states, epigrammatically, that no one can empty the bowel and fill the head at the same time. I must say, however, that I doubt whether reading is so objectionable as this author believes. When the bowels are in good condition, no more attention is required to have a movement than is necessary to digest the food after it has been swallowed.

2. *Lack of Exercise.*—This is a well-recognized cause of constipation, and is one reason that patients in bed suffer with sluggish bowels.

3. *Diet.*—An important factor in producing chronic constipation is diet. It is particularly the so-called nourishing foods—the nitrogenous foods—that lead to constipation, because they are so completely utilized that there is not sufficient residue to excite peristalsis. Vegetable foods leave a residue of cellulose, which stimulates the bowel to action. Fats and oils likewise promote peristalsis, through the agency of the fatty acids set free and the soaps formed from them. The fats also prevent the feces from becoming dry.

Before leaving this part of the subject, permit me to say a few words regarding the composition of the feces. Many persons believe that when they have eaten little or nothing, they do not need to have a bowel-movement; but it should be remembered that a large part of the feces consists of substances contributed by the intestines and that no small fraction is formed by the bacteria, which, already numerous in the stomach-contents, become enormously increased in amount during the slow descent of the excreta.

4. *Lack of Water.*—This I believe to be a fruitful cause of constipation, especially in infants and in young children.

5. *Psychic Influences.*—It is the common experience of many persons that any disturbance of the routine of daily life conduces to constipation. Many become constipated when traveling; and nervous shocks of all kinds may bring about a similar result. Mental depression, melan-

cholia, and other depressive forms of insanity, are often accompanied with obstinate constipation. The essential cause of such constipation is probably a stimulation of the splanchnic nerves, which are the inhibitory nerves of the intestines; but co-existing atony of the abdominal walls is a possible factor in some cases.

6. *Fevers.*—These, unless accompanied with inflammatory processes in the intestine, are usually attended with constipation; and there is commonly a postfebrile sluggishness of the bowels. The latter is at times very marked in patients convalescing from typhoid fever, and may lead to fecal impaction. I recently had under my care a young woman who, after passing through a severe attack of this disease, had obstinate constipation. Enemas brought about slight movements, but the patient experienced no relief. High irrigation was also ineffectual, and it became necessary to empty the bowel with the finger and a spoon, before drugs and enemas had any effect. J. N. Henry has reported similar cases. There is, besides, a postpartum constipation which also may develop into distinct fecal impaction.

Bokai has investigated the cause of febrile constipation and has come to the conclusion that it is not to be explained either on the ground of a deficiency in the secretion of the digestive juices or on that of an insufficient ingestion of food. His experiments on rabbits show that fever stimulates the inhibitory nerve-apparatus of the intestine. He has made the interesting observation that the injection of morphin, by arresting the action of these nerves, causes a return of peristalsis. This is in line with the teaching of Lauder Brunton that, in the constipation resulting from ovarian and other distant troubles, morphin, by removing the inhibition, often overcomes the constipation. In febrile, postfebrile, and postpartum constipation, muscular atony and feebleness of the expulsive power of the intestine may play a prominent part.

7. *Insufficient Ingestion of Food in Cases of Carcinoma of the Stomach or of the Esophagus.*—In these cases the intestines often become much reduced in caliber.

8. *Lead-Poisoning.*—This is a cause of constipation that must be borne in mind, as it is operative at times when least suspected.

9. *Obstruction of the Biliary Passages and Cancer of the Head of the Pancreas.*—The first directly prevents the inflow of bile into the intestine; and the second, by compressing the common duct, produces the same result. The consequent constipation seems to be due, in part, to the reduction in the quantity of food taken, and in part to the lack of the influence of the bile upon peristalsis.

10. *Obesity.*—Particularly excessive infiltration of fat into the mesentery and the intestinal wall.

11. *Horse-back Riding.*—I have been told by an old army-doctor that cavalrymen are subject to chronic constipation, and that this condition often proves quite troublesome. Ordinary horse-back riding for pleasure is not, to my knowledge, productive of constipation.

12. *The abuse of Purgatives, Enemas, and Suppositories.*—I mention this last merely by chance; it is in reality, a most potent and common cause of constipation. A mild constipation would often correct itself, if let alone but the ease and cheapness with which small, active pills may be obtained by the laity favor interference.

Several writers, especially Fleiner, recognize a so-called spastic constipation in which the intestine becomes partially or completely occluded at the point of spastic contraction, opposingan effectual obstacle to the

passing of the bowel- contents. The origin of the condition is obscure, but it seems probable that reflex causes are principally operative.

B. Organic Causes.—The organic causes of constipation are of two principal varieties. First, those depending upon factors outside the intestine; and second, those referable to the intestine itself. These two groups may be termed respectively, Extrinsic and Intrinsic.

1. Extrinsic Organic Causes.—These are:

a. Pressure by tumors in the abdomen or by the pregnant or retroverted uterus.

b. Pressure by exudates.

c. Pressure by constricting bands resulting from peritonitis; Meckel's diverticulum; adhesions developing after the removal of the appendix, etc.

d. Weakness of the abdominal walls, depriving the act of defecation of assistance from the abdominal press. Under this head belong pendulous abdomen, diastasis of the recti, and large ventral hernia.

e. Peritoneal inflammation; appendicitis.

f. Laceration of the perineum, causing a weakening of the pelvic floor with resulting impairment of the expulsive power.

g. Diseases of the stomach. The most important of these are hyperchlorhydria, ulcer, and cancer. In a measure, the constipation attending these is of functional origin, and might justly be discussed under the head of functional causes.

h. Diseases of the heart, lungs, liver and kidneys, especially those associated with passive congestion of the intestinal mucosa—a congestion caused by obstruction either of the general or of the portal circulation.

2. Intrinsic Organic Causes.

a. Obstruction by Tumors of the Intestine.—This is an important cause, frequently overlooked. It should especially be thought of in those cases in which constipation has come on in middle life, in persons whose bowels had previously been regular. In small annular carcinomas involving the large bowel, there is often no cachexia. A suggestive symptom, however, is the occurrence of attacks of painful colic. The tumor, in arresting the movement of the intestine, to use an illustration given by my friend Dr. Beates, acts as does the bridge of a violin. After a variable period, there may be a sudden, acute obstruction, suggesting either volvulus or internal hernia, and not a slowly-growing tumor. I have seen at autopsy two cases in which the diagnosis had not been made during life, the acute onset of the obstructive symptoms having led the physicians astray. As metastasis is late in developing in cases of circular carcinoma, an early diagnosis, with removal of the tumor and anastomosis of the cut ends of the bowel, may bring about a permanent cure. To repeat, I would emphasize the importance of realizing that constipation coming on in middle life, and associated with intermittent attacks of colicky pain is suggestive of malignant disease.

b. Displacement of the Intestines.—This is a fruitful cause of constipation, and presents itself under a variety of forms. There may be prolapse of the whole intestinal mass—so-called enteroptosis, the significance of which has been studied by Glénard. More common than prolapse of all the intestines is the descent of the transverse colon, giving rise to the so-called colonic M. Displacement of the colon seems to be frequently

associated with a lengthening of the large bowel—or, at least, of the mesocolon. The sigmoid is often unduly long and strays away from its normal habitat. It may lie in the pelvis, or over in the right iliac fossa. Curschmann, in an elaborate paper, has pointed out many of the anomalies that may be encountered. In such circumstances, it is but natural that the propulsion of the fecal contents should become more difficult; especially so, in view of the dry state in which they are found upon reaching the lower colon. Such conditions, it is apparent, may readily lead to the development of a vicious circle. The presence of the heavy fecal masses favors the elongation of the mesocolon and the dislocation of the bowel; and this, in turn, helps to increase the constipation. In many instances the intestinal displacement is associated with floating kidney.

c. Malformation of the Intestines, such as giant dilatation of the colon and defective development of the muscular coat, are conceivable causes of constipation. With regard to the latter, it is probable that such a congenital underdevelopment of the muscularis of the intestine is rare. It is likely, of course, to last throughout life, and may be the responsible factor in cases in which, throughout his lifetime, an individual has infrequent bowel-movements without any decided impairment in health.

d. Chronic Catarrhal Enteritis.—This is often associated with pronounced constipation. According to Einhorn, the evacuations may occur once in two, three, or four days; and, then, only with the aid of cathartics. As to the cause of the constipation, Nothnagel assumes a decreased activity on the part of the automatic nervous apparatus of the intestines, this being the result of the catarrhal process. In some cases, constipation and diarrhea constantly alternate.

e. Morbid Conditions about the Rectum and the Anus, such as hemorrhoids, fissures, fistulae, and strictures, produce constipation. The first two are usually the consequences of constipation; but, when once established, they serve to intensify it, thus constituting another example of the circulus vitiosus.

Rectal Crises in Locomotor Ataxia occasionally lead to constipation. I have seen a very instructive case of this kind. The patient had been treated with irrigation and purgatives. Rectal examination revealed nothing abnormal; but an investigation of the nervous system showed absence of the knee-jerk, Argyle Robertson pupil, and ataxia. After a time, general paresis developed. In no case of constipation should examination of the rectum be neglected; and it sometimes is not sufficient to make merely a digital examination. It may be of advantage to use the speculum, and even the proctoscope or the sigmoidoscope; as pathologic conditions beyond the reach of the finger may thus be revealed.

f. Obstruction by Foreign Bodies, such as gall-stones or masses of hair.

g. Chronic Intussusseption.—This is a possible cause of chronic constipation; but its pathology is not well understood, and its recognition is difficult. By detailing a case that I believe to have been one of chronic intussusseption, I may be able to throw a little light upon the diagnosis of the condition:

Mrs. E. Van B., forty years of age, came under my care in September, 1902. She stated that two years previously, while at a wedding, she had suddenly been seized with pain along the line of the colon and intense tenesmus, accompanied with the passage of small quantities of mucus and blood. A high enema had been given, and the acute pain had subsided; but for a week afterward she had passed small amounts of mucus. From that time until I saw her, she had suffered with constipation, the movements

having consisted of small, very hard, black, spherical masses, and having frequently been accompanied with the passage of mucus.

When seen by me, the patient had straining every morning. The movements were scybalous; but, just at that time, she was not passing any mucus or blood.

I thought that I would try irrigating the bowel, but the patient urged me not to do so, as she was afraid it would cause her pain. However, I insisted, only to discover that she was right. The passage of the tube was easy, but when the water flowed in, the patient suffered excruciating pain and went into a state of collapse. For a week or ten days thereafter, she was confined to bed. I was unable to explain the phenomenon, but I concluded not to try irrigation in her case again.

The constipation persisted. From time to time there were attacks of straining, during which the patient passed small quantities of semiliquid blood, sometimes with and sometimes without mucus. The latter was also at times discharged independently of blood.

Rectal examination, made upon many occasions, revealed nothing to explain the condition. All that could be found was a heavy, retroverted and tender uterus. As a rule, there was no tenderness over the abdomen; nor could a tumor or anything abnormal, except apparently a distended cecum, be felt. The colon did not seem to be thickened.

At irregular intervals, there were attacks of pain in the right iliac region, which to her always suggested appendicitis; but at no time could I find any evidence of that condition, the pain and tenderness being over the cecum and along the ascending colon.

Many measures were employed to relieve the patient from her suffering. Rectal injections of sweet oil, even in small amounts, produced a great deal of pain and straining, and had to be abandoned. Massage did no harm; but, likewise, no good. The best results were obtained through the use of some of the various ferments on the market—with the exception of pancreatin, which she could not bear—and with a pill of nitrate of silver and hyoscyamus. When mild, the attacks of straining yielded to the administration of bismuth subnitrate; when severe, an opiate was always required.

The patient remained fairly well during the spring and the summer of 1903, but in the fall her trouble returned. On January 1, 1904, she was suddenly seized with pain in the left side of the abdomen, in the region of the descending colon and the sigmoid. The pain was intense, and soon radiated into the suprapubic region where it became fixed. There was some distension of the abdomen, and exquisite tenderness above the pubes; active peristalsis could be seen through the thin abdominal walls. Thirty-six hours later, tenesmus with the passage of mucus and blood supervened.

Rectal examination at this time revealed the presence of an intussusseption, the intussusseped bowel being readily felt high up in the rectum; and dangling from near its apex was a pediculated, fleshy tumor the size of an English walnut. Examination with the speculum and electric light confirmed what the finger had found.

The patient was a poor subject for operation; but, as the intussusseption continued to increase and treatment proved of no avail, the risk was taken. The intussusseption was relieved without difficulty, but a paralysis of the bowel, with absolute constipation and fecal vomiting, ensued. A second operation became necessary, but after the abdomen had been opened it was impossible to reinstitute peristalsis,

The intestine was utterly lifeless, and looked like that of a cadaver. It was incised and its contents were removed, but fecal vomiting, continued until death occurred.

As I intend to make a full report of this case at some other time, I shall not go into further details, except to say that the frequent seizures of pain with which the patient suffered, and for which examination of the rectum and of the abdomen externally supplied no explanation, were, I firmly believe, due to recurrent attacks of intussusseption of the bowel.

h. Strictures Following Dysentery, Typhoid Fever, or Tuberculosis.

TREATMENT. I need not discuss at length the unpleasant fact that the treatment of constipation is one of the most trying of the lighter tasks that fall to the lot of the physician. In undertaking it, the first aim should be to discover, if possible, the cause. This may be done upon the general principles of diagnosis, either by induction or by exclusion. The latter is often the more helpful, but it presupposes a fairly exhaustive knowledge of the sum-total of the causes, which, I am sure, the list that I have given does not exhaust.

Let us assume that we have before us a case of chronic constipation in a woman. She has been constipated for a number of years—perhaps since an attack of typhoid fever, since her girlhood, or since her first pregnancy. We examine her, and find that she has no pronounced signs of organic disease in the abdomen; that her uterus is not displaced; that her abdominal walls are a little relaxed, and that the ascending and the descending colon are slightly thickened and possibly a little tender. She tells us that for years she has used purgatives, having run through the gamut of the well-known ones, and has found it necessary to increase the dose of each. I saw a case of this kind yesterday. The patient is a woman that has suffered with constipation for a long time and has taken as many as six aloin, strychnin, and belladonna pills at a dose—even then, with only a very unsatisfactory result.

Such are the majority of cases that come to us. Now what shall we do?

The first principle is to insist upon regularity in defecation. Whether the desire exists or not, the patients should make an effort to evacuate the bowels at the same hour every morning. In order to emphasize this as strongly as possible, I urge them to perform this function at five minutes past seven or five minutes past eight o'clock, instead of at seven or at eight; since it is seven o'clock until eight, and is eight until nine.

2. All purgative measures are discontinued — tentatively, however, and experimentally; for it may be necessary to resort to them again later on, should the measures instituted fail.

3. *Diet.*—When speaking of the causes of constipation, I pointed out under this head the character of diet conducing to constipation. It follows from what I then said that the diet should contain vegetables, cereals, fruits, and an abundance of fats. Naturally, however, when prescribing a diet to correct constipation, the patient's general condition must be kept in mind. If he is a diabetic, one is limited by the restrictions of that disease; and if there is chronic dyspepsia, the bulky vegetables and the cereals may not be well tolerated. Stewed fruits are useful; and raw apples, figs, oranges, etc., assist the general treatment.

4. *Water.*—I have already expressed my views concerning water. Cold water is preferable to hot, and I am in the habit of directing patients to drink one glassful before breakfast and two before retiring. If there are

no contraindications, I advise the ingestion of water freely between meals.

5. *Exercise.*—A person whose occupation is sedentary should walk as much as possible outside of business hours. It may be feasible, also, to indulge in other forms of exercise, such as tennis, golf, skating, swimming, and rowing, according to the season and the opportunities and ability of the patient.

6. *Calisthenics.*—In several instances I have seen good results from physical-culture movements; and I believe that they are destined to play an important part in the treatment of constipation, as well as in that of other morbid conditions. To instruct patients I have employed trained men and women, who give courses, at the termination of which the patients are able to continue the exercises without supervision. A simple but useful movement is to lie on the floor, on the flat of one's back, and raise the legs alternately; and another is to lie in the same position, and lift the trunk without the aid of the arms.

7. *Massage.*—Massage of the abdomen, when skillfully executed, is very helpful, especially when combined with calisthenics. While it is advisable to have this massage performed by a person trained in the work, this is not always possible, on account of the expense involved or for other reasons. In such cases, I have, within the past year, employed the so-called massage-roller, which has given me considerable satisfaction. The movements are made first in the direction of the colon, and then around the umbilical region, to stimulate the small intestines. Massage is contraindicated in the spastic form of constipation.

8. *Oil-Injections.*—Now comes what I may call the *piece de resistance* of the treatment of constipation; this is oil-injections. These were first suggested by Fleiner, of Heidelberg, and have proved to be a valuable addition to our therapeusis. I have been employing them for two or three years. At first I was in the habit of using half a pint, but I found that such a large quantity was not well tolerated, and that the results were not so good as when a smaller amount was used. I now direct the patient to inject through a piston-syringe from two to four ounces of sweet-oil, warmed to body-heat by standing the containing bottle in a vessel of hot water. The injection is given slowly on retiring, and the oil is retained in the rectum all night. It is very rare for it to be rejected, if a small quantity is used. In the morning a bowel-movement usually occurs. This is sometimes preceded by the expulsion of most of the oil, but sometimes the oil is completely absorbed during the night. Such absorption is naturally beneficial to lean persons. A fountain-syringe should not be used for giving the injections, as the rubber soon wears out, and the oil flows too slowly to suit the patient. Hard-rubber, glass, or metal syringes answer the purpose best. Glass is the neatest, and metal the cheapest.

I could cite a considerable number of instances in which regulating the hour of defecation, correcting the diet, increasing the supply of water, and giving oil-injections have cured a chronic constipation of years' standing. Indeed, I may say that the oil-injections alone were the curative agent, because most of these patients had previously carried out orders regarding diet and punctuality in defecation, though they had not always received directions as to the water-supply.

9. *The Ether-Spray.*—There are, however, cases that do not yield to any of these measures, in any combination. Before returning to drugs, I should advise the use of a measure that in one recent case has been remarkably successful; this is the ether-spray advocated by Boas. About 100 grams, or 3 ounces, of ether are sprayed on the bare abdomen

through an ordinary atomizer. This procedure is repeated every two or three days, according to the necessities of the case. The cold produced by the evaporation of the ether acts as a powerful stimulant to persitalsis. Probably the ice-pack would produce a similar result.

Permit me to relate the case to which I have just referred:

Miss G. L. B., a young woman of twenty-six, was sent to me by Dr. Helen Murphy, of this city. The patient had suffered with constipation for thirteen years, and had been in the habit of taking three aloin, strychnin, and belladonna, or three cascara pills at a time. These, however, would produce only an incomplete evacuation of black, scybalous masses. As a possible cause of this constipation, she mentioned the fact that when a child she had had a chair pulled out from under her. Her sister is quite constipated, and her mother also, but to a slighter degree.

Rectal examination was painful, but otherwise negative. There was some tenderness in the right iliac region. The kidneys were not floating. The patient's general health was below par and she was underweight.

From long experience she was thoroughly familiar with the dietetic and hygienic treatment of constipation; and, having carried it out without success for a long time, she had no hope that it would be possible to conquer her stubborn ailment.

I prescribed physical-culture exercises under an instructor, and injections of sweet oil. The result was not very encouraging, and, as a last resort, I commenced the use of the ether-spray.

This I applied first at my office, in order to show the patient the method to be employed. I then allowed her to use it at her home, cautioning her in regard to the danger of fire. Her bowels responded almost immediately. The spray has long since been discontinued and at present the patient seems to be entirely free from constipation. She has gained considerably in weight, and her general health is better than it has been for years.

10. *Abdominal Binders.*—When the abdomen is pendulous or when there is diastasis of the recti muscles or floating kidney, a properly made abdominal binder is of great value.

11. *Drugs.*—I have, so far, purposely refrained from mentioning drugs, because they are so rarely curative. The cascara preparations are usually the most efficient, although I have derived some satisfaction from using the bitter mineral waters. There is, however, one drug that I believe to be destined to occupy a prominent place in the therapeutics of constipation and intestinal atony. This is eserin, or physostigmin, which has the property of stimulating unstriated muscle. Although I have used this remedy several times, I have not had sufficient experienc with it to discuss its value. The late Dr. Packard, however, had great faith in it. It is usually given in the form of the salicylate, in doses of 1-60 of a grain three times a day. I have given it hypodermically as well as by the mouth. The value of strychnin in intestinal atony and constipation needs no special emphasis.

12. *Electricity.*—I have had no experience with electricity, but good authorities recommend it, especially in the form of intrarectal faradization.

13. *Operation.*—When the constipation is due to some anatomic defect optt is not remediable by means of the ordinary therapeutic measures, eharation may prove justifiable. Without going into details, I should state the indications for operation to be as follows: Splanchnoptosis, stricture from malignant disease of the bowels, adhesions and constricting bands, obstructing foreign bodies, pendulous abdomen and diastasis of the recti of extreme degrees, and chronic intussusseption.