IS THE ROUTINE EXHIBITION OF THE PREOPERATIVE PURGE DEFENSIBLE?

BY

EDWIN WALKER, M. D.,

Evansville.

In a paper read before this association at Cincinnati in 1906, I called attention to the great abuse of purgatives both by the laity and the profession. The people in general regard purgatives indicated in all ailments, and even take them when no disease exists. Practically every house has its "ever-ready" laxative. This state of affairs is due to the teaching and practice of the medical profession. Does not his family physician inaugurate every treatment with a cathartic? Even his surgeon, who professes scant faith in drugs, purges every patient before a surgical operation, no matter how simple. Can we wonder, then, that purgatives are almost universally employed? Yet every physician must know that their universal use is harmful, that they aggravate many diseases. In acute cases, serious consequences may ensue. They are not only powerless to cure constipation, but are the most frequent cause of this trouble. Constipation, in the vast majority of instances, is due to carelessness in habits and improper diet.

For the past five years I have noted in my histories, those who habitually use purgatives, and the results of correction of habits and diet, and it is astonishing how few are not promptly relieved by these simple methods. The few who are not, have some trouble which needs surgical or other treatment for relief.

Purgatives have a value in autointoxication and toxemia, but even in these they should be given on distinct indications only, for in many cases the poison is far out of reach of the cathartic, and its only effect is to weaken the patient.

When preparing the paper mentioned, I made quite an extensive search of the literature of the subject to inform myself how purgatives acted, and their exact effect on the human organism. The available information was very unsatisfactory; authors differing widely on the subject but all agreed, however, that they were irritants and are capable of producing enteritis. They

all produce liquefaction of feces, increase peristalsis and the formation of gas, the latter being due to excessive germ activity. This is exactly what we find in enteritis from any cause. Schmitt showed that normal constipated stools contain fewer germs and underwent decomposition slowly, even in an incubator. Roos was able to purge patients with live cultures of colon bacilli, while the dead germs had no effect.

The salines and mild laxatives doubtless do less harm, but the difference is only one of degree. The stronger purgatives, except perhaps calomel, are now but little used, the milder laxatives have taken their place; this is a great improvement, but even these should be given for definite indications only. I want to repeat the protest made three years ago against routine use of purgatives, and with careful inquiry into the etiology and the correct diagnosis of disease, they will be less frequently prescribed. Remove the cause by diet, habits or surgery and the laxative is superfluous.

It is, however, against the routine purge in all surgical cases, I wish especially to protest. If there is a hospital anywhere (except my own) in which the preliminary purge is not given to all patients operated upon, I have not heard of it. Such a universal practice is absurd. Surely every patient requiring operation is not suffering from trouble with the digestive tract; on the contrary, a vast majority have no trouble at all; why then make them sick and weaken them by a purge? We know that in the normal individual the process of digestion and evacuation is remarkably constant. It takes about seven hours for the stomach to empty itself, in five hours more the small intestine has extracted what nourishment it can and the remainder is pushed through the ileocecal valve. In the small gut the contents are always fluid and its movements are almost as regular and rhythmical as those of the heart. The time of the movement of food thus far (to the cecum) varies but little, unless there is a gross obstructive lesion.

The colon is more sluggish; extracting energetically the fluid, it pushes the mass along until it reaches the sigmoid, where it remains until defecation begins; this generally requires twelve hours. If, therefore, the patient has a normal alimentary canal, in twenty-four hours you can have an empty channel merely by giving a light digestible diet, without a purgation. Functional diseases need not concern us here as they rarely, if ever, interfere with the normal propulsive action of the stomach or small

intestines. In this part of the *prima via*, organic obstructive lesions only interfere with the normal course of the intestinal strain.

A condition of atony has been described, but some of the best authorities (Conheim) have never encountered atony of the stomach or small gut. There is no loading or clogging and solid or fluid matter is rarely found in them, when the patient has fasted twelve hours before the operation. It is in the colon, therefore, that we find the trouble, for careless habits, diet containing too little refuse to pass off, has in a measure injured the viscus. Metchnikopf says that the colon is a superfluous organ as we now live, and attributes "old age" to autoinfection from the gut, and thinks if the species were rid of it, life would normally be twice as long as it is now. There is no doubt that the consumption of vegetables and coarse foods is of advantage. Von Noorden has shown the great value of coarse diet in membranous colitis.

The colon is the portion of the canal which gives the most trouble to the physician, and also to the surgeon in preparation of his patients for operations in general. It normally constantly contains some fecal matter, but not enough to interfere with any operation, except on the large gut itself. In persons of constipated habit, I mean the milder forms, there rarely is enough fecal retention to interfere with operations on pelvic or abdominal organs, besides the colon. Large fecal impactions are very rare and when found are in the sigmoid and transverse colon, more rarely in the ascending colon. Any accumulation large enough to interfere with any surgical operation, except on the colon itself, could not be removed by a single purge; in fact, it only increases the amount of fluid and removes but little, if any, of the impaction. Anyone who has had a large fecal accumulation to remove, knows how slow, tedious and difficult it is to do it. I once observed a hard fecal mass in the ascending colon of a woman, which resisted all efforts at removal by purgatives and enemas for six months, until I thought it must be a growth of some kind. An operation became necessary for a pus tube and at that time I examined the colon, found a fecal mass and expressed it. If, therefore, the colon contains only a normal amount of feces, the diet and fasting with an enema or two will put the gut in good condition. If the accumulation is larger and of long duration and if time will permit, the colon should be unloaded by enemas of a solution of bicarbonate of soda, oil and large enemata of water, with a coarse diet. It is best if possible to do all this and have here an

interval of several days afterward, before the operation is undertaken.

The colon is the seat of real germ activity and the removal of masses would temporarily stimulate their increase. Besides, these accumulations indicate more or less colitis and there is greater danger from infections of this kind. If the accumulation is caused by an organic obstruction it is apparent that purgatives alone cannot remove it. It may be argued that the very fact that purgatives are so universally employed is *prima facie* evidence of their value and harmlessness. This does not necessarily follow; the profession has fallen into many fads, blood-letting, for example, which did much harm, and had to be banished by outside criticism.

Purgatives do affect the patient unfavorably, they weaken him and in the debilitated it might be enough to turn the scale. This is doubtless rare but does occur. One thing is certain, they make the patient more uncomfortable, and at a time when he has plenty to annoy him, we might at least spare him this. They surely do increase the formation of gas. The first change I noted after giving up the purge was that patients had less tympany and were thus spared much pain and discomfort.

After the operation, if patients can early take solid food and be out of bed, they will rarely need anything for the bowels, as they will act in a short time. If, however, by reason of nausea or other cause, but little food is taken and the patient has to remain in bed ten days or more, unless the bowels are aided, feces will accumulate in the sigmoid and rectum, and as their fluid contents are rapidly absorbed we may have a hard mass to contend with, which though not serious, may have to be broken up with the finger and removed, causing much discomfort and perhaps pain. With a few enemas this can be avoided and a laxative will rarely be required.

After intestinal resection I have waited from nine to twelve days, then observed a natural evacuation without a cathartic, and with no discomfort or trouble to the patient. I have followed the line of practice marked out in this paper for five years and my results have been better and my patients more comfortable than before.

CONCLUSIONS.

Purgatives can do harm and should be given only when indications are clear. The profession should abandon the slipshod,

routine methods now in vogue and should teach the laity, both by precept and example, the evils of the purgative habit.

The practice of purging all patients before surgical operations is unnecessary and injurious; they are made more uncomfortable, are weakened and the condition of the intestinal canal is not rendered more favorable but, on the contrary, germ activity is stimulated just as it is in enteritis, increasing the probability of infection when the gut is opened, and there is in addition to this more postoperative tympany.

A diet of digestible food for twenty-four hours or more and a fast of eight or twelve hours before, puts the intestine in the best possible condition for any operation, especially on the intestinal canal, except where obstructive lesions exist, and for these purgatives are worse than useless, and other measures are required.

In a few cases of milder fecal stasis a purgative several days before operation, followed by enemas are of service; these are, however, extremely rare.

The routine use of any powerful drug is to be deplored, and the habitual pre-operative purge is indefensible.

DISCUSSION.

DR. ALBERT GOLDSPOHN, Chicago.—When a man criticises adversely a practice that is so nearly universal, then certainly the burden of proof is upon him; and now is he bringing forth that proof? The author asks: would any surgeon rather operate on patients with diarrhea or with constipation? There I think he does not recognize that he is making an assumption which is incorrect—namely, when we purge the normal intestine by means of drugs we do not create an abnormal process in that intestine, as in the introduction of noxious material, or material that is a germ food, which causes multiplication of the flora in the upper segment of the intestine. By giving purgative medicines we increase the amount of normal function which is a different thing from a diarrhea, which is nature's reaction against microbic invasion and other irritations. I deny that a purging produced by a drug introduced into the normal bowel is the same thing as an enteritis. Again, the small intestine is not free from germs. It has its flora, the upper portion near the stomach almost none, but the nearer we get to the cecum the more numerous become the inhabitants, and the more virulent they become as well.

We would like to exclude the general abdominal cavity while working and make the field of operation in the pelvis a separate area. We want to operate in one segment and not expose the rest of the general peritoneal cavity; we can do that best if the

intestine is not distended. If this collapses, it recedes out of the way and can be easily held there by proper pads. I do not want to see the small intestine while doing an ordinary laparotomy and I succeed better if the intestine is not distended. If it is distended it becomes subject to friction or traumatism and to exposure to air. It is our business to keep all healthy peritoneal surfaces as far as possible from contact with dry air, even if it be sterile, on account of its desiccating effect which injures the serous coat.

DR. H. W. LONGYEAR, Detroit.—I agree most heartily with the first part of the paper. In my surgical work on the bowel, colon, and kidney, I have come against the too free use of purgatives a great deal. The systematic use of purgatives in cases of ptosis of the colon only increases the congestion, increases the symptoms and causes a spastic contraction of the bowel, so that my rule is to give *lubricants* and not cathartics. I use petrolatum oil in such cases to facilitate the action of the bowel.

In regard to the giving of cathartics before operation, it seems to me that is largely a mechanical question. We want to get the bowel as empty as possible. If we do an operation about the rectum or a perineorrhaphy, I should feel that it would be very dangerous to have a mass in the bowel come down after the operation. As to operating in the presence of diarrhea, that should be out of the question. We should not give a cathartic, so that there would be diarrhea while operating. We should get the bowel empty before the time of operation. I direct the use of a laxative early the day before operation and have the nurse wash out the bowel with a low enema the morning of the operation. In that way the bowel is rendered entirely quiescent.

DR. J. HENRY CARSTENS, Detroit.—This paper is a good one. There are excellent points in it, but really it depends upon the way we look at it and on the nature of the cases. An inflammation which produces a diarrhea is an entirely different thing from a diarrhea that is produced by a cathartic. A cathartic simply causes hypersecretion from the mucous glands so as to lubricate the parts and wash away the septic material. Dr. Walker says if you give cathartics you will find in the discharges a great many more microorganisms than without them, showing that the cathartics help to eliminate and wash away septic material that might become absorbed. The hard fecal matter in the rectum does not contain microorganisms, because these germs are up higher in the bowel; it is in the small intestines where they reside and cannot get down farther on account of the hard fecal matter that collects in the lower bowel.

The great American disease is constipation. People bolt their food, digestion is improperly carried on and, as a consequence, they resort to the free use of patent medicines and cathartics. They take these things and say they are good and

by taking them they eliminate and get rid of effete material, thus preventing absorption of this septic material. This does not mean that when you have an acute case to deal with, as for instance extrauterine pregnancy, you should wait and give the patient a cathartic, wash out the bowels and wait for twelve hours until the patient is dead. Not at all. You operate at once. The same way, when you operate on the vagina or perineum, you want the bowel well washed and cleaned out, so that you do not need to be bothered in the next three or four days with any movement of the bowels. I think a great deal of Dr. Walker's dictum, but still we must exercise judgment in the selection of our cases. All things considered, we want the bowels pretty well emptied before we operate.

Dr. Alexander Hugh Ferguson, Chicago.—On the whole I think we are using purgatives too much and enemas too little in preparing our patients for operation. I frequently say this, that if the surgeon would undergo the same punishment by taking as big a purgative as he gave the patient, he would not be in very good condition to operate on the case, to say nothing of enduring the operation. I think that some of our patients are made less resistant to an operation by overpurgation. At the same time sufficient purgation must be obtained to clear out the lower portion of the small bowel and enemas given to thoroughly clear out the large bowel. This, however, is not always practicable.

I recall two cases of death from gas-bacillus poisoning. The gas bacillus is taken into the alimentary canal with green vegetables. Both of these patients were operated on without the alimentary canal being cleared out. They were cases in which I was called in consultation, and since that time I have made it a rule to find out if patients have been eating raw green vegetables, and if so, 2 ounces of castor oil is always administered.

Dr. Charles L. Wright, Huntington (by invitation).—There is one portion of Dr. Walker's paper that interested me more than anything else, and that was the part with reference to giving cathartics before operation. It brings up the question as to what causes constipation. We know that the movement of the bowels is controlled by the sympathetic nervous system; that a disturbed patient gets constipation whether it is from an inflamed appendix, or the ovary, or from gall-bladder trouble, or whatever may disturb the sympathetic nervous system. We disturb Auerbach's and Meissner's plexuses which control peristalsis and which are disturbed along the muscular coats of the intestines. We know that when we perform an operation that immediately following it the patient is going to have constipation. Why? Because we have disturbed Auerbach's plexus and the bowel may be quiet for several days or a week from the shock done to these plexuses. I think Metchnikoff is right when he says that the material retained in the intestine for a week is perhaps laden with germs and so far as we know toxemia may develop

from it, hence in order to prevent that we should stimulate Auerbach's plexus beforehand and anticipate the constipation that is going to follow by cleaning out the bowel, so if constipation should follow, we are prepared for it.

DR. WALKER (closing the discussion).—One of the principal objects of my paper was to stir up thought on this subject. Almost everything that has been said here in the discussion has been due, in my opinion, to a misconception of the subject. The medical man has learned that he cannot cure his patients by purgatives. He can help things, but he does not rely on them as formerly to effect a cure. The surgeon must know that he cannot thoroughly empty the intestines by administering purgatives. I would urge Dr. Goldspohn, when he goes home, to prepare the next patient a few days beforehand by giving him a light diet, and when this is done the intestines will be empty. In five years, in one instance I have found fecal matter in the small intestine, but I have not purged any of my patients except in one or two instances, and by purging them there was trouble afterward from tympany.

DR. GOLDSPOHN.—Was there any gas?

DR. WALKER.—I did not find as much gas as after the use of a purgative. The purgative stimulates the secretion in the intestines, where resides a colon bacillus, which is a gas-producing germ, and it is found in appendicial abscess. I had one case in which there was so much tympany that I hardly believed it was an abscess. It was a case in which the colon bacillus had been generating gas. Purgatives can produce enteritis because every one of them is an irritant. I wish all of you would go over the history of the action of purgatives.

Dr. Carstens spoke of the manner in which purgatives act, but he cannot find in literature a satisfactory explanation of their action. After a fairly thorough study of the subject I could not determine their action, as authors differ so widely. Some people do not think salines act by osmosis; that they act as irritants. Purgatives do not empty the intestines. When you have an organic lesion or some definite obstruction you cannot remove fecal matter by purgatives to save your soul.

You can accomplish what you desire in cases with no organic lesion by dieting a patient for twenty-four hours or more before operation. I did not say that there were no germs in the small intestine, but they are less numerous than in the colon. The contents of the small intestines pass through in five hours and the stomach empties itself in seven hours, hence there are twelve hours to clear out the bowels, and at the end of that time, with the fasting, the intestines are much freer from gas. Practitioners do not use cathartics as often in their medical cases; the same could obtain in surgical cases. You irritate the intestine by giving the patient a cathartic the same as you would by giving tartar emetic or arsenic. What do you do then? You lower

her vitality. You give the germs more fluid and they produce gas. What is the action of a purgative? Liquefaction of the feces, increased production of gases and increased peristalsis. Now what is the difference between that and enteritis? I hope, gentlemen, you will forsake your routine purge and try the plan I have outlined to you. It is needless to purge patients when there is nothing the matter with them.