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POST-OPERATIVE MANAGEMENT*

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THERE has always been an impression among practitioners that once an operation is completed, fully seventy-five per cent of the surgeon's worry is over. Only those physicians who have had the post-operative care of a troublesome case will realize how far this is from being correct. This phase of our surgical therapy has been sadly neglected in undergraduate teaching, so much so that a large number of us when we graduated have had but a hazy idea of what to do, let alone make a diagnosis of our patient's difficulties.

Success in surgery depends on three things; surgical diagnosis, surgical technique, and post-operative care. All three perfected tend to lower mortality rate. To-day we shall endeavor to lay down some fundamental principles in respect to the last of these. There is, first of all, one axiom that I would like to state as follows: It is much easier to prevent post-operative complications than it is to cure them. With this as our ideal, we have been able to revolutionize our post-operative care.

There are three main troubles that are apt to beset every abdominal case; 1. Pain. 2. Distention. 3. Nausea and vomiting.

In regard to the treatment of post-operative pain, there is in our opinion only one answer, and that is enough morphia to keep the patient free from pain and restlessness. This may require ¼ grain with atropine 1-150 grain for the first twelve hours, or it may require three times that much. Patients differ so much in nervous temperament and susceptibility to pain. However, keep them free from pain for the first twenty-four hours, and little morphia will be required thereafter, unless the case is one of general peritonitis, when much more will be required. If the patient complains of pain in the second twenty-four hours, one should investigate the cause of the pain before ordering morphia indiscriminately. Pain in this period may be due to pylorospasm, which is readily relieved by atropine; to a distended bladder which may be relieved by an enema or catheterization, preferably the former; the pain may be of pleuritic origin, or finally, distention, which can be relieved by heat locally and other measures, such as the various enemata.

Distention, or the second difficulty, can be prevented absolutely in eighty per cent of cases. The essentials tending towards prevention are, digitalis per rectum immediately after operation, morphia to relax rectus spasm and allow of painless contraction to expel gas, and strychnine; and lately to the armamentarium we have added sodium bromide. The question arises, why give digitalis per rectum? We have only one answer, and that is that it surely does prevent distention in some way; a case of "rational empiricism." For the rest, we can only theorize that it has (1) a direct action on the unstriated muscles, (2) an action on the vagus nerve, (3) it puts general tone into the whole cardio-vascular tree. The last seems as likely as any, since shock, with its consequent venous engorgement, must be one of the underlying factors in inducing the condition. Strychnine we use for its action on the smooth muscle fibres, and the bromide as an additional sedative. Therefore we prevent these two post-operative troubles, pain and distention, with the following routine order, to be used in practically all abdominal cases:

Atropine gr. 1-150 }
Morphia gr. ¼ } p.r.n. for pain.
Strychnine gr. 1-30 q.4.h. for 48 hours.
Murphy Drip oz. 6 of glucose 10% and concentrated tr. digitalis drm. 1½ (B. & W.), and sodium bromide gr. 80.

We are insistent no purgative be given within the thirty-six hours prior to operation, and that patients receive abundance of fresh cold water. We are not enthusiastic about ice water. We absolutely forbid ginger ale, orangeade, or grape juice, feeling that these only add to the patient's discomfort. It is a habit with some nurses to

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be too enthusiastic regarding enemata. Use enemas only when necessary.

In order to treat nausea and vomiting, it is essential to diagnose the type. There are five types: (1) anaesthetic, (2) gastric dilatation, (3) obstructive, (4) neurotic, (5) toxic.

Anaesthetic vomiting is fast disappearing. Certain remedies may be tried, such as peroxide of hydrogen, one drachm in saline, drachms 6, or adrenalin minims 30 in aqua oz. 1, or milk of magnesia or bismuth. *In giving any of these, it is important that the stomach be empty.* If the patient is vomiting clear water, the likelihood is that such emesis empties the organ, but if bilious material is vomited, nothing but gastric lavage will determine whether or not the stomach is empty.

The vomiting of gastric dilatation occurs most frequently after—(1) Cholecystectomy, (2) Removal of large ovarian cysts, (3) Abdominal tumors, (4) Splenectomy; it is characterized by the repeated vomiting of small quantities of foul smelling olive green material. There is only one thing to do, and that is repeated gastric lavage, either with an ordinary stomach tube or duodenal tube and the right side position. Obstructive vomiting is much the same in character as that of dilatation, only of later onset. The neurotic type occurs in people overwise about anaesthetics, such as nurses, doctors, and those who have been anaesthetized before. As a rule the sight of a stomach tube, and 100 grs. of sodium bromide per rectum speedily effect a cure. *Any vomiting of the anaesthetic type which persists for over twenty-four hours is either of neurotic or of toxic origin.*

The toxic vomiting is indeed a serious affair. It occurs in patients with acidosis with acetonuria, in patients with thyrotoxicocis, and in cases of prostatic hypertrophy with a high N.P.N. in the blood. Always examine the urine for acetone. If present, give plenty of glucose 10% and soda 5% per rectum by drip, or glucose 5% interstitially, or glucose 10% intravenously. In any case get fluid into the tissues. The vomiting of thyrotoxicosis, after packing the patient in ice, is best relieved by diluted hydrochloric acid in 5-10 minim doses by mouth, and bromide per rectum. This also relieves the nausea after deep Coolidge X-ray therapy.

This concludes in a brief outline the essentials in an ordinary case. You will see that we aim at *rest* and *comfort* and *abundance of fluids.* However, there are complications in some cases. In an analysis of some 400 cases in the early part of 1921, I find the following complications with their percentage occurrence:—Acute dilatation of the stomach, 2 per cent; Pneumonia, 10 per cent; Cystitis, 3 per cent; Phlebitis, 1.1 per cent; Pylorospasm, 1.5 per cent.

The occurrence of post-operative pneumonia is influenced by several factors. It occurs in about eight per cent. of abdominal cases, six per cent. in above the umbilicus and two per cent. below, and very frequently in perforated gastric and duodenal ulcers. It occurs in the base of the right lung in ninety per cent. of the cases, and if recognized in the first twenty-four hours, can be aborted by appropriate treatment in eighty per cent. of cases. Apparently the anaesthetic has very little to do with its occurrence; neither has the mode of its administration. The theory that it is due to multiple emboli seems the rational one, but several factors favor its development. Atmospheric conditions seem to be the predominant factor. In dull, damp weather, pneumonia is very common, while on clear, bright days it is very rare. The frequency in the right lung as compared with the left is evidently due to the splinting of the right side of the diaphragm. I can recall but one case following breast amputation. How do we recognize it? By suppressed breath sounds and a few crackling rales. Dullness may or may not be evident. It is usually present. This constitutes pneumonia in its early stage.

In our treatment we may be regarded as old-fashioned, but we are not ashamed of the allegation. We apply mustard and linseed poultices, continuously or intermittently, but sufficient to produce and maintain counter-irritation. By mouth we give quinine grs. 3 to 5, ergotin grs. 2 every four hours until the temperature is normal. If this fails, which it seldom does, to abort a pneumonia recognized at its inception, and consolidation proceeds, the pneumonia follows the usual course of any broncho-pneumonia.

Phlebitis is an annoying disturbance to a convalescent patient. It is of course most common after pelvic surgery, and has a tendency to appear in epidemics. Its occurrence means a month or six weeks delay in allowing the patient up out of bed. The treatment, in addition to a Thomas splint which swings free above the mattress, is to lay along the course of the

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femoral vein hot lead and opium compresses. This removes the tenderness and pain more speedily than any other local application. The patient's stay in bed should be ten days after the temperature is normal in the evening.

Cystitis does occur, no matter how carefully catheterization is carried out. As a preventive measure it is a good plan to leave two or three drachms of 5% argyrol solution in the bladder after catheterization. Do not use the argyrol stronger than 5%. If it is necessary to catheterize a patient for some days, the oral administration of urotropine is worthy of trial.

I regret that we have no specific for hiccoughs. At times they are easily stopped, at others nothing at our command seems to have the slightest influence. Gastric lavage is one of the first measures to adopt. Various remedies may be used if the hiccoughs continue after the stomach is empty, e.g. aromatic spirits of ammonia, chlorodyne in milk of magnesia or bismuth, dilute hydro-chloric acid, sodium-benzyl-benzoate, iced champagne, or buttermilk. The multiplicity of remedies indicates their uncertainty of action.

Pylorospasm is a distressing ailment. The patients suffering from it are as a rule complaining of epigastric pain of varying degree of severity and continually endeavoring to belch gas. It is always wise to advise a patient against the usually useless procedure of belching. These patients are as a rule nervous, and are air swallowers. Atropine gr. 1-100 per hypo. repeated in two hours and sodium bromide gr. 100 per rectum usually bring speedy relief. If the pain is severe, a moderate dose of morphia may be given with the atropine.

In conclusion I would like to state that many distressing complications may be avoided by simple measures; e.g. in elderly people chewing gum will prevent a painful parotitis. Always allow the patient to take the most comfortable position in bed. Careful attention to a host of minor details always leads to a satisfied patient, and a satisfied patient is a real asset to any surgeon. If the attendant is master of the situation, by his personality and knowledge of post-operative management, he will have gone far towards shelving a host of his worries.

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