THE POSTOPERATIVE COMPLICATIONS IN ABDOMINAL SURGERY.

By C. M. RossER, M.D.,
Dallas, Texas.

THE purpose of this paper is to consider the untoward conditions which with more or less frequency supervene, and we must include those incidents, accidents, and errors which, occurring beforehand, render possible postoperative complications relatively probable.

It is, I think, a common experience that as surgeons progress in precision and proficiency they are less likely to leave out of statistical records other facts than mortality, for it becomes evident that except in emergency service and that wherein a desperate pathology approaches that line, clear judgment, improved facilities, and trained technique should reasonably insure against all but accidental death.

When, therefore, we estimate the merits of individual procedures and the methods of any particular operator, the inquiries should be: (1) The length of disability, (2) the relief obtained for symptoms requiring the surgery, (3) the probable permanency of the relief, and (4) whether new troubles have developed.

Confinement to bed and detention in hospital, when unduly prolonged, is not alone of commercial consequence. Some interesting figures have been tabulated showing an enormous waste of time under less accurate arrangement, and without citing them in detail we have but to think of the many thous-

and surgical cases cared for each day, and the importance from this standpoint is sufficiently impressed.

The scientific aspect, if less apparent, is still of more concern.

As the general average of time from home is shortened, hospital help will advance in favor. Such a change in sentiment will secure benefits of which those personal to an increased number of patients are of prime value. Neither is the matter of mental contentment to be ignored as a factor for the relief of physical infirmity, influencing, as it does through confidence, sometimes even final results.

Presupposing, as all procedures do, that pain and other invalid states are to be followed by a return approximating the normal, a failure in these particulars brings not only a disappointment to the immediately interested, but discredit to the science itself, and this is inevitably true when for any reason an original distress is exaggerated, or when one which could be borne is exchanged for a disorder more prostrating and intolerable. We shall, therefore, consider those factors which prolong invalidism and render end results uncertain.

NAUSEA AND VOMITING. Some degree of nausea, usually accompanied by vomiting cannot always be avoided. Correct preparation of the alimentary tract through rest and cleansing, and the least possible disturbance of patient after anesthetic is begun, a dispatch in concluding work which is still short of haste, are means which, if failing to prevent their occurrence, will mitigate a severity of the symptoms.

Patients who object to entering the operating-room while they are awake, will generally, if informed, prefer that simple excitement to the distress of "seasickness" and the increased operative time consequent to removal from an adjoining room. However, as stated, the condition is without constant control. The physiological depression to the nervous system produced by chloroform and by ether to a less degree, an accumulation of stomach contents with ingested mucoid secretion, must give more or less systematic offence, but by

keeping in mind the causes mentioned the remedy is reasonable.

Restored oxygen rapidly displaces the inhaled ether and re-establishes nerve tone. If nausea is but slight and other precautions permit, a semi-sitting posture and a moderate draught of hot water will encourage drainage of the stomach through peristalsis aided by gravitation. At times turning prone anteriorly may accomplish the same results. These failing, if the situation is one in which thorough emesis would not be a hazard, this may be induced by giving warm water freely, or, if thought safer, a stomach tube may be promptly employed, the choice being before return of consciousness, if its necessity can be anticipated.

HEMORRHAGE, SHOCK, AND COLLAPSE, somewhat similar in general expression, and having a more or less definite relation may be studied together, the first, most important as a factor in producing the second, and the second a sometimes unfortunate forerunner of the third.

Leaving out of the question as unsurgical and anomalous, sufferers from chromic enemia and bleeders, our better mechanical skill has minimized the primary risk and practical asepsis has rendered secondary hemorrhage very infrequent.

When trivial, whether the leak is arterial, venous, or capillary, resort to position and pressure will be sufficient, but if coagulæ are collecting in cavities sufficiently extensive to render absorption difficult, or in separation of structures that should unite, their removal is wise; and if extremis is imminent, prompt search to secure the bleeding point is imperative.

Drugs, as ordinarily employed in hemorrhagic states, are not only valueless, but are of positive injury.

These include strychnine, digitalis, ergot, alcohol, and later adrenalin, all of which act by increasing cardiac impulse, and, therefore, arterial tension.

Opium salts, preferably morphine, hypodermatically, by acting contrawise serves a good and sometimes, in even serious conditions, a successful purpose.

It not only lowers arterial tension without depressing unduly the vital forces, but by relieving pain and reflex disturbances, anticipates the condition of surgical shock, which, next to immediate exsanguination, is most to be feared.

As a preliminary to the same possible necessity saline solutions, as variously employed, may be used, but not until bleeding apertures are under control. For this purpose the pack, torsion, and ligature are successful when properly applied.

Whether shock is due to cardiac weakness per se or independent of heart conditions, or a disturbance of the vasoconstrictor centre, or both, the clinical picture and indications are more positive than its complete etiology.

It is well, however, to keep in mind that hemorrhage, profound and prolonged anesthesia, exposure of viscera and pain produced by marked trauma, especially when the insult is offered to an extensive perifera, are known causes. While not as clearly shown, physical depression we term "surgical shock" may be rendered all the more easily produced in patients in which there is a reaction from mental excitement. Nothing is more conservative as an adjunct to cure, than a maintenance of confidence or lack of fear—a converse condition always opposing a favorable result. As shown by the brilliant experiments of Crile and other original workers in this field, we cannot hope to restore a normal equilibrium by way of the medicinal methods, but recently so popular. Strychnine, which will promptly stimulate a normal heart, is powerless to correct the condition of central exhaustion when due to functional inhibition, or to compensate for a loss in circulating current.

The same is true of alcohol, which, in addition to being useless, actually adds to the embarrassment by its secondary effect.

It is only in conditions of profound anemia that the head should be distinctly lowered. In such cases the desire to

secure an increase in cerebral circulation suggests this plan, but otherwise a venous stasis will add to the phenomena.

The pneumatic rubber suit, recommended by Crile and Dawbarn, is a logical mechanism for limiting circulatory necessity and may be applied either in anticipation or as a treatment later on.

Morphine, by obtunding peripheral and other distress, acts as a balance to flagging forces and adrenalin, by improving blood-pressure throughout the system, are the two agents which are entitled to a place in professional confidence.

In addition to these agencies, saline solutions, by adding volume to the circulation, may be employed in manner and quantity according to judgment in individual cases. Under emergency, as after serious hemorrhage intravenous injection or hypodermoclysis will be preferred, but where practical after consideration of time, I believe its introduction to the colon by slow irrigation the most promising way. In this manner, while temporarily reducing the quality of blood standard, its quantity is either exaggerated or restored, and at the same time the thermal influence upon nerve reflexes is not an unimportant point in the general plan.

POSTOPERATIVE OR INHALATION PNEUMONIA is an extreme incident which is rarely observed. Unsafe exposure, under conditions of lowered vitality, may in instances account for its occurrence, and, as the imprudence involved is contrary to the safety of the patient, exclusive of this possibility, there is no excuse for permitting it, but the most likely explanation lies in the known fact that pneumococci are found normally in the upper respiratory tract, and that anesthetic vapors by chemical irritation invite an otherwise delayed invasion. This theory suggests antiseptic care of the mouth and pharynx as a preliminary measure, and less liberality in the use of the anesthetic agent. Lung complications also occasionally take the form of bronchitis or pleurisy.

Hypostatic pneumonias are far less frequent since we have

learned that the prone position and persistent decubitus is not the best general habit.

The most serious involvement is that from the metastasis during the process of septicemia. In such cases the infective course is not self limited as is the case from bacterial causes, and its gravity is that which is always true of alcohol manifestation of general disorder. Symptoms will vary in type and severity according to the conditions mentioned. In the absence of an inhaled foreign body or general sepsis the prognosis is not more unfavorable than when of idiopathic origin. There is nothing essentially different in the treatment from that suitable to other cases, except that the primary or surgical conditions must at all times be taken into account. Recognizing the opportunity for the implantation of sepsis in all cases, care is taken to conduct a system of elimination in the most effective possible manner from the beginning. For this purpose excretions from the bowels and skin are maintained, guarded by the heart and respiratory stimulants.

Included in this method may be mentioned the hot pack and irritating bath, which, by dilating the capillaries and the peripheral arterioles, relieve pulmonary stasis and in this way protects the heart against a threatened exhaustion. As in shock, so here colon flushing is of pronounced importance. That part which is returned is accompanied by excreta containing toxic elements, while that which is absorbed acts as a dilutant to the poisoned blood until eliminated conservatively through the skin and kidneys.

Probably the most generally dreaded surgical sequel is postperitonitis. Occurring but seldom and rarely without traceable reason, its development is noted with surprise and ofttimes resentment on the part of watchers, and brings keen regret, if not remorse, to him in whose service the misfortune is found.

This suggestion, of course, relates to clean cases and to those in which well-directed drainage and a satisfactory perspective indicated that poor conditions had been turned into better ones.

In the treatment of profound septic states, any given plan of treatment is likely to be attended with results which cause a regret that some other was not chosen, but early recognition and prompt action will very often save life.

If the ordinary methods do not limit a spread of the infection, pernicious vomiting, pseudo-ileus, gaseous distention, and a train of distressing symptoms quickly follow. The few methods other than operative, which have established credit, should be promptly employed. Stomach lavage, enemata of turpentine emulsified by egg in normal saline, when thrown into the high bowel, promote comfort by relieving distention.

In conditions of apparent obstruction due to paresis and reverse peristalsis, an injection of an alum solution into the rectum, as advocated before this body by the lamented Hardin, of Atlanta, will, in suitable cases, be of pronounced effect. This method is superior to glycerin when employed for the same purpose, both in certainty and safety as well.

When, in the well-considered judgment of an experienced surgeon, reopening the abdomen in search of pus pocket, obstruction, inflammatory adhesions, perforations, or peritoneal drainage, the greatest care will be required. Unless imperative a general anesthetic should be avoided, and if ether is used the amount should be carefully guarded. It will generally be safer to rely upon local anesthesia for the limited surgery admissible in such extreme conditions.

Purgatives, and even laxatives, are to be avoided on account of the distress and danger inevitably to follow, but prompt recognition of obstruction from any cause so necessary that its absence must be constantly demonstrated by other methods. When the presence of progressive pus can be reasonably determined, and when obstruction is known to exist whether from ileus or adhesions, a prompt surgical interference, while a dernier resort, is the only alternative.

The limits of propriety prevent a mention of other not less important complications, which are seen less often and about which there is still much uncertainty. Of these acute dilatation of the stomach is probably of rather frequent occurrence.