unusual experience of helping in the management of 2 such cases within the period of approximately 1 year justifies this report. The additional fact that refrigeration of the affected extremities was utilized for a considerable period prior to amputations and that eventually the amputations were performed under refrigeration anesthesia should arouse further interest in these 2 cases. . . . The authors believe that, in the case of amputations, refrigeration of the gangrenous extremity will hold infection and a spreading moist gangrene in abeyance, thus giving a period of days or weeks in which to get the patient in condition to withstand the ordeal of amputation. Eventually, the amputation can be performed under refrigeration anesthesia without shock and without possible general anesthetic complications. In our experience even spinal anesthesia is not altogether devoid of shock. By the refrigerating of the extremity, thereby holding the gangrenous process in abeyance in the more distal portions, time is gained for the development of a certain amount of collateral circulation. Thus, amputations which otherwise might seem necessary high in the thigh may eventually be limited to more distal portions.” 12 references.

J. C. M. C


“lt is rather generally agreed that the primary causes of postoperative atelectasis are insufficient pulmonary ventilation and inadequate endobronchial drainage. The fundamental factors however are painful, splinted chest expansion, excessive viscosity of the bronchial secretions, and inability of the patient to eliminate these secretions. . . . The pathologic physiology of pulmonary atelectasis is . . . easily understood. There is mucus in the bronchial tube. It is allowed to accumulate because of incomplete chest expansion, which effects incomplete lung aeration and suppresses the cough reflex. Finally the thick mucus plugs a bronchus. The plugged bronchus, according to Carlson and Luckhardt and others, then goes into spasm which further increases the obstruction. As no more air can enter the segment of lung involved, the air already there is quickly absorbed into the blood stream. Hence a negative pressure is created in the involved lung affecting the respiratory excursion on that side of the thorax. The heart and mediastinal structures are retracted toward the involved side, the diaphragm is pulled upward and the intercostal spaces are narrowed. Should bacterial contamination occur around and behind the plug, postoperative pneumonia becomes inevitable. Thus the importance of early recognition of atelectasis is apparent. . . .

“lnasmuch as excessive bronchial secretion is a major factor, every effort should be made to obtain adequate tracheobronchial drainage prior to surgery.” Elective operations should be postponed in the presence of an acute upper respiratory infection. In the presence of a bronchitis or bronchietasis the secretion should be reduced to a minimum before surgery is undertaken. The anesthetic of choice should be the one which abolishes the cough reflex and interferes minimally with the muscles of respiration. The Trendelenburg position during and immediately after operation aids in the gravity drainage of bronchial secretions and helps to guard against the aspiration of regurgitated gastric contents. Frequently changing the position of the patient in bed during the first few postoperative days reduces the likelihood of this complication. Since atropine and hyoscine tend to dry secretions, making them more tenacious and
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difficult to eliminate, Mathes and Holman, Adams and others advise against their use even when secretions are excessive. Spinal anesthesia, particularly at the higher levels, paralyzes many of the accessory muscles of respiration with resultant shallow breathing during the period of anesthesia. This constitutes one of the chief objections to the maintenance of prolonged spinal anesthesia by the use of such agents as pontocaine hydrochloride, nupercaine, and the so-called ‘continuous spinal anesthesia.’ During the spinal anesthesia, regardless of what intraspinal agent is used, it is important that the patient be given inhalations of carbon dioxide and oxygen frequently to insure adequate and complete expansion of the lungs. Once atelectasis has occurred, prompt and occasionally heroic measures must be instituted if the sequela of pneumonia and lung pathology are to be prevented. Tracheobronchial drainage is the primary requisite of successful treatment. The cough reflex is the natural body response for removing foreign material and secretions from the bronchial tree. Coughing should be encouraged by every means at our command. Frequent inhalations of 5-percent carbon dioxide and 95-percent oxygen, or routine insistence upon deep breathing also stimulate coughing. A procedure which has proved most successful in our hands is to turn the patient onto the unoperated side and, with a snug abdominal binder in place and with his wound additionally supported with his own or a nurse’s hands, the patient is instructed to cough. As he coughs the involved side of the thorax is suddenly and forcibly compressed by the physician’s hands which are placed on the front and back of the chest. By this method we have frequently dislodged a bronchial plug with prompt relief of symptoms. If these methods are not successful, aspiration of the affected bronchus through a tracheal catheter with or without a bronchoscope should be done. If the bronchial tube is promptly cleared, symptomatic improvement is sudden and dramatic with disappearance of the dyspnea and cyanosis, subsidence of the rapid pulse rate and respirations, and lowering of the temperature. Chemotherapy with one of the sulfonamides should be instituted early in all cases of atelectasis as a prophylactic measure against pneumonia, pneumonia, and lung abscess.

“For the purposes of this study 210 consecutive major abdominal and kidney operations were reviewed. In this group there were 11 patients who developed postoperative pulmonary atelectasis: . . . Atelectasis is known to be twice as common in males as in females. . . . Some interesting observations can be made as to the type of anesthetic used, although the series is too small to justify conclusions. Of the 210 cases, 191 were given spinal anesthetics, 16 inhalation anesthetics exclusively, 2 pentothal intravenously, and 1 a local infiltration anesthetic. Of the 191 patients receiving spinal anesthetics, 117 had a procaine-pontocaine mixture and 74 had procaine hydrochloride alone. In the procaine-pontocaine group (over one-half the total patients) 9 of the 11 atelectases occurred. In the procaine hydrochloride group (35 per cent of the total) there was only 1 atelectasis. Schmidt, Mousel, and Harrington have called attention to the disadvantages of prolonged spinal anesthesia, particularly at the higher levels, because of the prolonged paralysis of the accessory muscles of respiration. The duration of anesthesia from pontocaine hydrochloride is two to three times that from procaine. . . . All of our patients recovered satisfactorily without a single instance of residual pulmonary trouble. They were all treated with conservative but vigorous measures. . . . Sulfona-
mide therapy was initiated promptly in each case and continued until all clinical symptoms had subsided. This may be one of the reasons why none of the group developed pneumonia." 8 references.

J. C. M. C.


"The purpose of this paper is to consider the three main surgical approaches to lesions of the thymus gland, all of which have been employed by one of us (O. T. C.). The clinical results in 10 cases in which thymectomy was performed will not be considered at this time except to say that there has been but 1 death and the results have been satisfactory; in fact, sufficiently so to warrant further employment of thymectomy in cases of myasthenia gravis and, at times, even in cases in which there is no demonstrable thymic enlargement evident on x-ray examination of the thorax. . . . Cyclopropane and oxygen administered through an intratraheal tube are the anesthetic agents of choice in all instances. When the posterolateral approach is employed, the use of an intratraheal tube is imperative and even when either of the anterior approaches is used, the intratraheal tube should be employed as a safeguard, since the pleura might be opened occasionally. The postoperative care is essentially the same in all instances. The patient is kept in an oxygen tent the first 2 to 3 days after operation. Roentgenograms of the thorax are obtained quite frequently. Since thymectomy is done mainly for myasthenia gravis, correct doses of prosthigmine and ephedrine must be administered, depending on the severity of the disease. One should guard closely against any myasthenic reactions and it is best to have a Drinker respirator available in case severe respiratory depression should develop. The maintenance of satisfactory fluid balance, sedation, and other routine postoperative measures should be employed." 7 references.

J. C. M. C.


"It is surprising to note the paucity of cases of pituitrin shock, especially of those with fatal result, reported in the literature. . . . Cyclopropane is a very potent hydrocarbon capable of producing surgical anesthesia in concentrations permitting a high percentage of oxygen in the mixture. . . . Pharmacologically, cyclopropane is a stimulant of the parasympathetic system. It causes bronchoconstriction, which may induce an asthmatic attack in a susceptible patient. It also has a tendency to produce all sorts of cardiac arrhythmias with displacements of the rhythm centers, ranging from brady-cardia to ventricular fibrillation. Pituitrin, an extract of the posterior pituitary gland, has four principal actions. It stimulates the myometrium, causing contraction of the uterus, constricts the capillaries and smaller arterioles by direct action on the muscle cells; stimulates the intestinal musculature to contraction by direct action on the muscle layers; and has a pronounced antidiuretic action by causing maximum reabsorption by the cells in the loops of Henle. The actions primarily affecting our problem are the contraction of the uterus, and the undesirable side effect of constriction of the coronary vessels. Burstein has also pointed out that it intensified the bronchoconstrictive action of cyclopropane, which he found when investigating pitressin, the pressor fraction of pituitrin.