

bronchoscope should be used for aspiration of secretions.

"Pain.—Severe pain is rare if the surgeon has been gentle while operating. Small doses of opiates should keep the patient reasonably comfortable. Since muscle spasm is a frequent cause of postoperative pain, changes in the patient's posture may prove useful."

R. B. S.

STONEBURNER, L. T., III, AND FINLAND, MAXWELL: *Pneumococcal Pneumonia Complicating Operations and Trauma: Analysis of Two Hundred and Seventy-nine Cases of Postoperative and Ninety-two of Post-traumatic Pneumonia Associated with Typed Pneumococci*. J. A. M. A. 116: 1497-1504 (Apr. 5) 1941.

"It is probably fair to say that pneumonia occurring after surgical operations or after serious trauma is usually considered by both surgeons and laymen to be an unfortunate complication which often results in fatalities when the treatment of the primary condition is otherwise successful. Some of the predisposing factors relating to the operation, notably anesthesia, aspiration, emboli and decreased pulmonary ventilation, have been given some consideration in recent years with the primary object of prevention and only secondarily from the point of view of therapy. The bacteriologic aspects of the pulmonary complications have received only minor attention. A few reports have indicated that postoperative pneumonia is usually associated with the so-called group IV pneumococci, and therefore the suggestion is made that these organisms either are ordinary oral contaminants or have given rise to autogenous infection. . . . There are no reports of extensive series of postoperative or post-traumatic pneumonias in which adequate bacteriologic studies, including complete and accurate pneumo-

coccus typing, have been carried out. The results of specific therapy are, therefore, difficult to evaluate. . . . The present paper contains an analysis of 279 cases of postoperative and 92 cases of post-traumatic pneumococcal pneumonia that occurred at the Boston City Hospital between Sept. 1, 1929 and July 1, 1940. . . .

"The effect of various types of anesthesia on the incidence of postoperative pneumococcal pneumonia was analyzed for a two and one-half year period. For this purpose all operations in which general inhalation anesthesia had been employed were considered together and, for better comparisons, the tonsillectomies, almost all of which were done under light anesthesia with ether, were excluded. . . . There was little difference between the incidence after spinal and after inhalation anesthetics. Local anesthetics, which were associated with the lowest incidence of pneumonia, were used primarily in brief or minor operations and rarely in general surgical operations on the abdomen. . . . Operations on the upper part of the abdomen and the head, neck and lungs were the longest operations and were accompanied by the greatest incidence of postoperative pneumonia. Robertson, in producing experimental pneumonia in dogs by the intrabronchial injection of pneumococci in starch suspensions, found that pulmonary consolidation could be established much more regularly in animals that had been given a preliminary injection of morphine. This drug and other sedation were used in almost every instance both preoperatively and postoperatively in the present cases, particularly in those groups of cases in which pneumonia was most frequent. . . .

"Interference with respiration appeared to be the most important single factor in the occurrence and localization of the pneumonia in both these groups of cases. The postoperative

pneumococcal pneumonias were essentially similar to primary pneumococcal pneumonia except that (1) the pulmonary lesion was more often atypical (bronchopneumonia), (2) the distribution of pneumococcus types tended to simulate that found in healthy carriers, (3) antecedent infections of the respiratory tract were less frequent and (4) the acute febrile stage of the disease tended to be shorter. The post-traumatic pneumococcal pneumonias resembled primary pneumonias more closely than did the postoperative pneumonias. Modern specific therapy, including type specific serums and effective chemicals, notably sulfapyridine and sulfathiazole, was as effective in post-traumatic pneumonias as in primary pneumococcal pneumonias, and these agents were also highly effective in the cases of postoperative pneumonia. In the present series, specific serums and sulfapyridine were about equally effective. Infections of the respiratory tract complicating surgical operations or severe trauma should be treated in the same manner as any acute pulmonary infection. Pneumococcus typing should be done and cultures of sputum or of material from the throat and blood cultures taken as soon as a diagnosis of pneumonia is suspected. Chemotherapy with sulfapyridine or sulfathiazole given orally, or their sodium salts given intravenously if necessary, should be instituted, under proper control, as soon as evidence of pneumonia appears. Specific antipneumococcus serum may be given as soon as it is evident that the drug is not effective or not properly tolerated." 27 references.

J. C. M. C.

BARRIE, H. J.: *Meningitis Following Spinal Anaesthesia: Report of Eleven Cases*. *Lancet* 1: 242-243 (Feb. 22) 1941.

"In July, August and September, 1940, 11 cases of meningitis occurred

among the 96 patients who were operated on under spinal anesthesia in one theatre of the Royal Hospital, Sheffield, during that period. The clinical signs and pathological findings resembled each other. One case was fatal and an autopsy was obtained. No particular age-group was affected. The operations were with three exceptions clean ones, such as repairs of herniae and fractures. The fatal case was a colostomy for inoperable carcinoma of the colon. The spinal anesthetics used were from different batches of light Percaine. . . . In 9 of the patients there was a rise of temperature to 100 F. or over within the first three days after operation. There were no noticeable symptoms of meningeal irritation at this stage. All of them complained of abrupt onset of severe headache between the seventh and tenth days after operation and in most this was associated with drowsiness, irritability, photophobia, neck rigidity and a positive Kernig's sign. Blood counts when done showed a polymorphonuclear leucocytosis. All cases, except the fatal one, were free from temperature and symptoms by the eighteenth day after operation; 9 when examined four weeks after had no residual signs or symptoms apart from slight lateral nystagmus. In the fatal case the patient became comatose and died within seven days of the onset of symptoms.

"Lumbar puncture was done in 6 cases. The fluid was clear or faintly turbid. The protein averaged 100 mg. per 100 c.c.m. with the highest reading 160 mg. and the lowest 60 mg. Chlorides averaged 660 mg. per 100 c.c.m.; highest 720 mg., lowest 640 mg. Cells averaged 450 per c.c.m.; highest 1100, lowest 9. There was either slight preponderance of lymphocytes or polymorphs, and in the average they equalled each other. There was no change in the gold curves except for one mild meningeal reaction. No tubercle bacilli or other organisms were