

DORNASE INHALATION Pancreatic desoxyribonuclease (dornase) is a lyophilized powder of bovine origin. Patients with chronic bronchopulmonary disease, pulmonary fibrosis and emphysema, heavy smokers and obese short-necked individuals are prone to postoperative pulmonary complications. Pancreatic dornase is used by direct nebulization for the removal of thick secretions, plugs or dried secretions. Improvement in over 90 per cent was observed in a series of over 400 patients with atelectasis or other pulmonary complications. The enzyme is recommended for preoperative use in patients with chronic bronchopulmonary disease. (Clifton, E. E., and others: *Management of Pulmonary Complications of Surgical Patients (Primarily Atelectasis) with Pancreatic Dornase Inhalations, Surgery* 50: 176 (July) 1961.)

BRONCHIAL PROCAINE BLOCK Six rabbits of a control group were given intravenous injections of adrenaline and developed the picture of pulmonary edema. The presence of extensive edema was confirmed microscopically. In the experimental group of 14 rabbits 5–10 ml. of 0.25–0.5 per cent solution of procaine were insufflated intratracheally 7–25 minutes before the injection of adrenaline. Nine rabbits of this group survived and developed no clinical manifestations of pulmonary edema. All were killed and microscopic examination showed either very slight evidence of edema or none at all. Of 5 rabbits who died, acute pulmonary edema was found only in 2, the others having died as a result of toxic effects of adrenaline. (Astafeva, V. I. and Tikhonova, N. M.: *Intrabronchial Procaine Block in the Prevention and Treatment of Acute Pulmonary Oedema*, p. 74.)

General effects of application of a weak procaine solution have been studied. Intrabronchial procaine block (by means of insufflation of procaine aerosol into the upper respiratory passages, trachea and bronchi) and bronchopulmonary block involving trachea, bronchi and alveoli were achieved. At one session no more than 10–15 ml. of 0.25 per cent procaine was used. The procedure was carried out on alternate days, daily or

twice a day. Each session was followed by a rise in skin temperature of 1.3 degrees centigrade, lasting 4 hours or more. The capillaries of the nail bed dilated. The effects of bronchopulmonary block included disappearance or reduction of pathological vascular spasm, normalization of the pulse, arterial blood pressure and respiratory rate, disappearance of smooth muscle spasms and their increased tonus wherever abnormally low. In patients with inflammatory lung disease the block accelerated reabsorption of inflammatory infiltrates and reduced or abolished the cough reflex. In suppurative pulmonary disease good results were noted in 74.6 per cent of cases. In 43 of 60 patients with bronchial asthma the attacks were abolished by intrabronchial blocks carried out over a period of 8–12 months. In a few cases the motor function of paretic bowel was restored and hiccups disappeared. In thoracic surgery the procedure prevents the development of bronchopulmonary shock by weakening the undesirable reflexes arising in the larynx and bronchi and reducing salivation. The contraindications to bronchopulmonary block include hypersensitivity, hepatic disease and tendency to hemoptysis. (Khodkevich, S. P.: *Bronchopulmonary Procaine Block*, p. 5).

Observations were made of 986 patients following appendectomy, herniotomy and other surgery. Pulmonary complications were noted in 10, i.e., in 1 per cent of the cases. Bronchitis was observed most frequently, occurring as a result of a reflex disturbance of the secretory-draining function of the bronchial tree, i.e., "reflex bronchitis." In order to prevent pulmonary complications bronchopulmonary procaine was used with 300 patients. Thirty minutes before and 10–12 hours after surgery, the patients were given to inhale 15.0 ml. of an 0.25 per cent procaine solution once a day for 2–3 days. These patients developed pulmonary complications in 3.3 per cent of cases. In the control group (570 persons) where no block was used, the complications occurred in 11 per cent of cases. (Astafeva, V. I.: *Bronchopulmonary Procaine Block in the Prophylaxis and Therapy of Postoperative Pulmonary Complications, Voprosy legokhnoserdechnoi patologii (Tomsk)* 2: 44, 1960.)