In previous reports [1, 3, 4, 5] it has been shown that the parenteral injection of streptomycin depresses reflexes from the chemoreceptors of the small intestine, spleen, kidneys and the tissues of the hind limb.

According to reports in the literature, the conducting pathways from the chemoreceptors of the zones mentioned above pass through the spinal cord [2, 8, 9, 11]. In this connection it is important to ascertain the character of the effect of streptomycin on the reflexes from those reflexogenic zones from which the conducting path-
ways lead mainly direct to the medulla oblongata, missing the spinal cord. A zone of this sort, in particular, is the interoceptive zone of the pericardium. As shown by a number of workers [2, 6, 7, 8], the main bulk of afferent impulses from the receptors of the pericardium reach the central nervous system by the aortic and vagus nerves, missing the spinal cord.

**EXPERIMENTAL METHOD**

Experiments were performed on cats under urethan anesthesia. The level of the arterial pressure and the respiratory movements were recorded by the usual methods.

In order to study the reflexes from the receptors in the pericardium, Drinker’s method was used [10].

As a stimulant of the pericardial chemoreceptors we used nicotine in a dilution of $10^{-9}$ to $10^{-2}$, which was injected in a volume of 0.3-0.5 ml into the pericardial cavity, and then washed out with warm physiological saline. In each experiment several dilutions of nicotine were used. The mechanoreceptors of the pericardium were stimulated by a stream of warm physiological saline directed at the pericardial membranes always in the same force and volume. Reflexes from the chemo- and mechanoreceptors of the pericardium were in most cases shown in the form of depression of the arterial pressure, increase in the rate of respiration and in its amplitude. Less commonly there was an increase in the level of the blood pressure.

In some of the experiments the threshold of excitability of the tibial nerve to stimulation with an electric current was determined in addition. Streptomycin (sulfate or calcium chloride complex) was in most cases injected intravenously in a dose of 70,000-127,000 units, but in some cases was injected intramuscularly in a dose of 250,000-400,000 units. After 5-20 min, and then after each 10-20 min repeated examinations were made of the excitability of the receptors of the pericardium to chemical and mechanical stimuli under the influence of the antibiotic.

**EXPERIMENTAL RESULTS**

The effect of streptomycin on the reflexes from the receptors of the pericardium was studied in 12 experiments.

In 2 experiments the effect of the antibiotic (400,000 units intramuscularly) was studied on the reflexes from the chemoreceptors of the pericardium caused by nicotine in a dilution of $1; 10^{-9}$. In both cases the magnitude of the original reflex (depressor) gradually diminished, and one-and-a-half hours after the injection of streptomycin the reflex to nicotine was found to be completely suppressed (Fig. 1).

![Fig. 1. The effect of streptomycin on reflexes from the chemoreceptors of the pericardium caused by nicotine. a) Original reflex; b, c, d) gradual development of complete suppression of the reflex as a result of streptomycin injected intramuscularly in 13 hrs in a dose of 400,000 units. Interpretation of the curves (from above downwards): respiration, arterial pressure, time marker (5 sec), stimulation marker.](image-url)

In 3 experiments the effect of streptomycin was studied on the reflexes from the chemoreceptors of the pericardium caused by nicotine in a dilution of $1; 10^{-8}$. One hour after the Intravenous injection of streptomycin the reflex was distorted. In 2 experiments after injection of the preparation intramuscularly the reaction to nicotine diminished to 60 and 63% (after one-and-a-half hours).