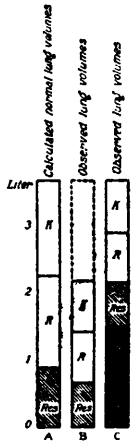


1. Diagram showing mode of production of changes in total lung volumes in heart patients. From Patient No. 1. Res. = residual air. R = reserve air. K = complementary air.

75 (2035)

Studies on lung volume. IX. Patients with lung emphysema pulmonum.

By CHRISTEN LUNDSGAARD and KNUD SCHIERBECK.

[*From the Medical Clinic of the University of Copenhagen, Denmark.*]

Twelve patients suffering from chronic emphysema of the lungs were studied. All of them except Nos. 5 and 11 have also asthma but no determinations were made within 24 hours after an attack of asthma. Except in No. 5 no fine rales were present in the lungs. The technique was as described in previous papers. In the diluting experiments, full mixture was secured by constructing "mixtures curves" (see paper No. 4 of this series). All figures in this and previous papers are given at room temperature and observed pressure. The size of chest was determined as described by Lundsgaard and Van Slyke. The normal total lung volume was calculated as $\frac{54}{100} \times$ observed "chest volume" in maximum

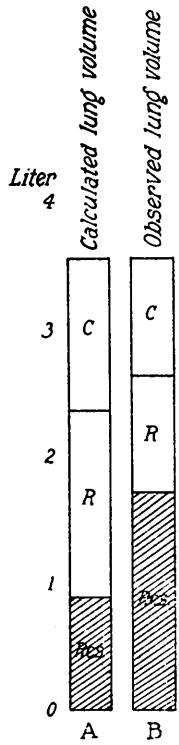
inspiratory position. The other lung volumes were calculated by means of the normal ratio of the different lung volumes (see paper VI). In the table the observed lung volumes are given in percentage of the calculated normal figures. The movement of the diaphragm was observed by X-ray. In all but two, Nos. 4 and 6, a diminished excursion of chest wall (procedure described in paper VII was found. In most instances a diminished excursion of the diaphragm was found (by fluoroscopy). Fig. 1, representing the conditions in Patient No. 1, typifies the conditions found in the majority of patients with emphysema pulmonum.

TABLE I.

Observed lung volumes in 12 patients with emphysema given in percentage of calculated normal lung volumes.

Number of patients	Total capacity.	Middle capacity.	Residual air	Vital capacity.	Excursion of thorax expressed as $\frac{C_r}{C_t}$
	per cent.	*per cent.*	*per cent.*	*per cent.*	
1	101	121	200	69	78.3
2	105	114	117	101	75.2
3	99	126	124	91	81.4
4	98	86	126	88	74.7
5	89	105	176	60	88.5
6	99	103	79	106	74.0
7	96	99	137	80	81.4
8	99	103	153	82	86.6
9	104	95	104	106	77.4
10	101	103	125	95	75.5
11	104	123	149	88	81.8
12	99	.....	161	78	80.4

[1] Normal ratio 74.7. (See paper V).



1. Diagram showing calculated and observed lung volumes in patient No. 1 may typify the changes usually found in uncomplicated emphysema of the lungs. Res = residual air. R = reserve air. C = complementary air.

76 (2036)

Cholesterol determination in duodenal contents.

By J. J. HERTZ and MAX KAHN.

[*From the Department of Laboratories, Beth Israel Hospital, New York City.*]

The duodenal contents of fasting patients were examined before and after the administration of a saturated solution of magnesium sulfate, according to the method of Lyons. The Duodenal tube was allowed to remain in the duodenum for a