

should occasionally rupture and give rise to hæmoptysis. Emphysema, in fact, especially when complicated with bronchitis, offers the same difficulty to the return of the systemic venous blood as is offered by mitral stenosis. The difference is one of degree only. The block in the one case, it is true, is at the mitral valve; in the other case it is just in front of the pulmonary valve. The difficulty which the right ventricle encounters in getting the blood out of its cavity into the pulmonary capillaries is very much the same as the difficulty encountered by the auricle in getting the blood out of its cavity into the left ventricle. The results in both cases are more or less the same—namely, the production of a back pressure. In the case of mitral stenosis the back pressure shows itself primarily in the lungs, secondarily in the liver, and finally by the œdema of the lower limbs. In the case of emphysema it is the right ventricle which shows the first signs of trouble, and, in order to overcome that trouble, it hypertrophies. The blood which cannot be forced through into the lungs is passed back into the liver, which then acts as a reservoir for the superfluous fluid, and the train of events with which we are familiar in mitral stenosis then becomes repeated—the œdema of the lower limbs and the ascites.

Now, this being the state of matters, one is led to inquire how it is that hæmoptysis does not more often occur in emphysema. We know that there is a great destruction to the pulmonary capillaries, and we know also that the right ventricle tries to force the unoxygenated blood into the area where it may expect to meet with the vivifying oxygen. The remaining capillaries very soon become stretched, engorged and degenerated, so that here, if anywhere, is a condition eminently favorable to a hæmorrhage. Why does that hæmorrhage not more often occur? Well, the explanation was long ago supplied by Rindfleisch, who showed that wide communications are formed between the pulmonary artery and the pulmonary and bronchial veins, thus relieving the tension in the former vessel and allowing the blood to pass through the lungs without undergoing proper aeration. This want of proper aeration is, of course, the reason of so much distress amongst those who suffer from this disease, and when they live in a climate like our own, more especially in large towns, where at best there is a deficiency of oxygen, and where they are subjected to additional difficulties imposed by fogs, the results of this deficient aeration become extreme; the lungs are irritated by their futile attempts to obtain the necessary vapor, and a state of chronic inflammation ensues.