

PNEUMOTHORAX FROM GAS-PRODUCING BACTERIA.*

BY

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The presence of gas in the pleura without perforation is an old question with medical authorities. Lænnec believed that a secretion of gas could take place in a healthy pleura, and although this view was considered untenable for a long period, yet subsequent writers have regarded it as probable that an evolution of gas may occur in certain pathological conditions. Senator† states his views on this subject very clearly. He considers that the gases held in solution by fluids in the pleural cavity may escape in accordance with physical laws, provided that the pressure is diminished by retraction of the lung, but that such an amount can only be inconsiderable. Further, however, he considers that purulent fluids undergoing decomposition in the pleura can evolve gases. This argument is supported by the facts that subcutaneous emphysema may occur in a limb in the absence of any external wound, and also by the presence of gas occasionally noted in phlegmons.

It is, however, only within the last four years that any facts have been brought forward placing such views on a scientific basis. Welch's‡ discovery of the bacillus capsulatus aërogenes, followed by numerous pathological observations, remove all doubt as to the production of gas in living tissues by bacteria. In one of Welch's cases pneumo-peritonitis was present without perforation. A large number of his cases involved the abdominal organs (12 out of 23.)

The following case, although primarily one of subdiaphragmatic abscess rupturing into the pleura, is a good example of a pneumothorax due to gas production by the bacillus coli.

J. W., æt 46, a deaf-mute, was admitted December 26th, 1898, to the surgical side of the Montreal General Hospital for sudden severe pain in the abdomen, which his physician regarded as appendicitis. Dr. Hutchison, under whose care he was placed, found no evidence of abdominal disease but some days later discovered signs of fluid at the right base, and on aspirating some clear serum was removed. He was transferred to the medical ward on January 24th, and his condition was noted as follows:—

The patient is emaciated, anxious and prostrate; the skin dry and

* Read by title at the Canadian Medical Association, Toronto, September 1, 1899.

† Senator, *Deut. Zeit. für Med.* II.

‡ Welch and Flexner, *Journal of Exp. Med.* 1.