THE CANADA LANCET.

A MONTHLY JOURNAL OF

MEDICAL AND SURGICAL SCIENCE, CRITICISM AND NEWS.

VOL. XX.] TORONTO, NOV., 1887. [No. 3.

Original Communications.

THE BEHAVIOUR OF THE FLUID IN, AND THE PATHOLOGY AND TREATMENT OF EMPYEMA.*

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In all cases of empyema many points present themselves for decision, on which, any one who is responsible for their management, would be glad of the opinion of a meeting such as this. The difficulties in diagnosis are much greater in the child than in the adult, but even the latter often present difficulties sufficient to baffle any but the most experienced. The signs and symptoms do not maintain the uniformity which the descriptions in the text-books, especially the older ones, would lead us to suppose, and reliance on which has doubtless caused most of us much chagrin at some time in our professional experience. I well remember the case of a man of middle age admitted to the Toronto General Hospital when I was a student there, who was suffering from moderate cough, dyspnea and considerable febrile movement. The percussion note over the left half of the chest was universally flat, but bronchial breathing and bronchophony were distinct all over it. He had led a dissipated life; he was too ill to give us a history. The condition was supposed to be pneumonic consolidation. He came to the marble slab a day or two afterwards, and we found we had grievously blundered, not an unusual discovery to make at post-mortem examinations. The left pleura was distended with pus to its utmost capacity.

In children, many cases, no doubt, go through all the stages to recovery or death without there being any suspicion as to the true nature of their ailment, and that, too, in the hands of the most capable practitioners.

*Read before the Dom. Med. Assoc. at Hamilton, Aug. '87

Probably more than half of all cases of empyema occur in the first decade. Owing to the great resiliency of the lung in this period, small effusions cause no distension of the chest. As the effusion is poured out, the lung contracts on account of its own retractile energy, making room for the effused fluid, which thus exercises no compression on the lung; the result is exactly the same—so far as the lung is concerned—as that which would occur if an equal quantity of air were admitted. When the effusion has been considerable, expansion occurs; but owing to the great yieldingness of the chest-walls, the expansion is uniform, without bulging of the intercostal spaces and with seldom much, if any, displacement of the heart or depression of the diaphragm. Then it is all-important to remember that bronchial breathing and voice sounds persist in almost all cases in children; few of the standard works note this. Nor do the anomalies stop here. Goodhart says, "It is common enough that one draws fluid from such part of the chest as is apparently filled with air in inspiration and gives clear resonance in percussion."[1] Until recently the authorities taught that the effusion, when not circumscribed by adhesions, changed its position with the altered position of the patient, the upper margin of the region of dulness always maintaining a horizontal disposition or nearly so. Da Costa says, "When the patient lies on his face, the fluid gravitates towards the anterior chest-walls and percussion dulness posteriorly becomes far less perceptible."[2] Recent investigation, especially by Garland, Douglas Powell and others, proves that moderate effusions are immovable, maintaining their fixed position irrespective of the position the patient may assume. Gravity has no influence on them as it has on fluids in open vessels. And owing to the same causes, the upper margin of the fluid does not maintain a horizontal or water-level line, but is drawn up into a curved line, having its highest point in the axillary region. These are some of the reasons that render the diagnosis of fluid in the pleural cavity, especially in children, difficult.

The causes which occasion the accumulation of pus in the pleural cavity are far from being well understood. With many writers the opinion obtains that it is an alteration, accidental or other-

1. Brit. Med. Jour., 1887, vol. I, p. 1203. 2. Physical Diagnosis, p. 318.