

ous pneumonia than in any other febrile disease. In cases of malaria the chlorides are actually increased during the febrile period.

7. As croupous pneumonia is the only pulmonary disease in which diminution of chlorides occurs to any appreciable extent, an examination of the urine may prove of great value in the diagnosis of pneumonia from other causes of consolidation of the lung, and from empyema, pleurisy, etc. It must be borne in mind that the chlorides may be markedly diminished in some cases of disease of the stomach, notably in dilatation.

8. The degree to which the chlorides are diminished is no criterion of the severity of the disease in any particular case, and is of no help in forming a prognosis.

Hutchison summarizes the pathological facts as follows:

1. The absorption of the chlorides from the alimentary tract goes on normally in acute fevers, and no vicarious excretion occurs by the skin, bowel, sputum, or other channels.

2. The sputum in pneumonia is very rich in sodium chloride, containing sometimes as much as 19 per cent. in the solid matter; but in spite of this fact the total amount excreted daily in the sputum is small.

3. The inflammatory exudate contains from 2 to 4 per cent. of sodium chloride in its solid matter, or not more than three times as much as the same weight of normal lung. It is thus not really very rich in chlorides, and the amount of the latter contained in the whole exudate will not account for more than one-third to one-half of the total amount of sodium chloride retained in the body during an attack of pneumonia.

4. The difference in composition between the exudate and the sputum indicates that the latter is not derived directly from the former.

5. The theory that the chlorides are retained because of a temporary functional disability on the part of the kidney to excrete them is negatived alike by the results of experiments and by a comparison of the composition of the urine of pneumonia with that of acute nephritis where diminution of excretory powers undoubtedly exists.

6. Examination of the blood from cases of pneumonia shows that the chlorides in it are diminished, but there is no evidence that they are present in any unusual form of combination. Their failure to appear in the urine must be attributed to the very delicate adjustment of the amount excreted by the kidney to the amount contained in the blood at the time.