

AN  
INAUGURAL DISSERTATION

ON  
*Pneumonia Per. Sc.*

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## Pneumonia per se.

This term designates an inflammation of the mucous membrane of the air-cells of the lungs. The inflammation is supposed to be acute, and the occurring in the person of an individual in good health. The inflammation may be restricted to a few scattered lobules, or involve a large portion of one or both lungs. Pleuritic inflammation, to a greater or less degree, is generally associated with the pulmonary. This disease is of very unfrequent occurrence in this climate, but is abundantly common in the northern portions of the U. S. and Europe. Exposure to cold is the most common exciting cause of the disease. The latter part of winter and the early portion of spring, furnish

The greatest number of cases.

Anatomical characters.

The disease consists of three well marked stages, viz. congestion, fully developed inflammation, and suppuration.

The morbid anatomy of each of these stages, we will describe in the ~~exact~~ order of their occurrence. In the first stage, or that of congestion, an effusion of bloody serum partially fills the air-cells, and intercellular spaces. The bloodvessels are congested, giving to the external surface, ~~of the~~ as also, the mucous membrane of the bronchial ramifications, a deep red colour. The engorged portions are less elastic and tenacious than natural. Their specific gravity is considerably

increased, yet they still float in water. The air-cells contain more fluid than air, and from a cut surface, which is very red, there issues, copiously, a frothy red fluid. This condition very much resembles the mechanical engorgement which takes place during the last hours of life. It may, however, be distinguished from it, by the brighter red colour and the greater softening of the former. The antecedent symptoms and the seat of the engorgement also aid in making the diagnosis. In the second stage of the disease, or that of fully developed inflammation, the lung contains no air within its cells. It is solid, inelastic and sinks in water. Slight force will crush

it, because of the great softening of the areolar tissue, resulting from the effusion of plastic lymph.

A cut surface is red as in the first stage. From it flows less fluid than in the first stage. This fluid is more viscid, also, is not frothy, as in the stage of congestion. This stage of the inflammation has been called hepatization, from the great resemblance which the inflamed portions of lung bear to the liver. Viewed under the microscope, the air-cells are to be seen as a mass of red granulations, lying close to each other. By the inflammation they have become thickened, red and congested. If the whole of one lung be inflamed, it completely

ly fills the Thoracic cavity, and when removed, bears the impress of the ribs. Should the disease advance to the third stage, or that of suppuration, then the lung presents a remarkable alteration in structure and appearance. The red colour of the second stage has been exchanged for a yellow, stone, or drab. It is solid and inelastic as in the second stage, but is filled with pus, instead of lymph. The areolar texture is so rotten, that portions of the lung may, by gentle pressure, be reduced into mere yellowish shreds. The finger may easily be thrust into its substance, the cavity so formed, rapidly fills with pus. This purulent matter is of a yellow or grayish colour and

perfectly devoid of odour. The granules, observed in the second stage, are white instead of red. They are filled with pus. Abscess as an event of acute pneumonia is very rarely to be observed. The contact of air with the inflamed structures, prevents the formation of the wall of circumscription. Gangrene is also a very unusual termination of the disease. Portions of the lung thus perishing are of a dark, dirty olive, or greenish brown colour, very soft and diffuent, and smell most horribly. The three conditions we have described, may all coexist should, as sometimes happens, the inflammation attack different portions of the lung at different periods of time. The right and lower lobes are those most

obnoxious to inflammation. In about one eighth of the cases, both lungs are involved. The right lung is as often again affected as the left.

Symptoms, course, Termination &c.

The symptoms of this disease are physical and general. The former will first claim our attention. During inspiration, and in the stage of congestion a very minute crepitation is heard. This, in the outset is heard in connection with the vesicular murmur, but gradually obscures it as the disease advances. This sound is heard during the stage of congestion, and continues until the air-cells become completely obliterated, or, as we may say, until the lung becomes hepaticized. It resembles very much



The noise produced by Throwing small particles of salt on red hot coals. The bursting of minute air bubbles gives rise to it. When the lung has become hepatized we hear what is called bronchial respiration, a noise like that caused by blowing through a quill. This blowing sound arises from the passage back and forth of air through the larger bronchial tubes. This sound, which in health is obscured by the vesicular murmur, is now rendered very evident, from the readiness with which it is conveyed through the hepatized lung surrounding the bronchiae. Bronchial respiration is always to be heard during hepatization, unless, so large a portion of the lung be inflamed as to prevent the expansion

of the thoracic parietes. During the existence of bronchial respirations, we hear when the patient speaks, what is called bronchial voice. The larger bronchiae, surrounded by hepatized lung transmit it. The words of the patient are not distinctly articulated, but a muttering sound is audible. The sound is much more distinct than that heard over the portion of the chest on the opposite side and corresponding to this. In the stage of congestion and while minute crepitation is heard, there is elicited a slight dulness by percussion. This dulness becomes more marked as the disease progresses. When it becomes perfectly flat, we may know the lung is hepatized.

Such are the physical signs of this disease. By them we are enabled to trace the disease through every step of its progress with great certainty. Cases may arise, however, in which the physical signs are of no avail, as for instance when a small portion of the centre of the lung is affected. Beyond the second stage, the physical signs cannot trace the disease. If resolutions occur, they are heard, in the reverse order in which they were observed in the progress of the disease. The general signs of this disease are the following viz; fever, pain in the side, dyspnea cough, and a peculiar expectoration. More or less of these are present in every case of pneumonia. The fever is gen-

rally preceded by a chill, although it is often otherwise. Frequently it results from an extension of bronchitis. The febrile reaction is an index of the extent and intensity of the engorgement. The pulse is usually strong and full, the tongue dry and white, ~~and~~ the skin parched and burning. The urine is scanty and high colored, the thirst considerable (the cheeks are flushed, and the head frequently aches. This last symptoms does not forebode danger, unless it be conjoined with delirium. Blood drawn from the arm is buffy and readily ceeps.

In some cases, the pulse is very feeble from the beginning. In such cases if the person be strong and healthy at the time of the attack, we suspect the con-

gestion is very intense. We may feel quite sure of this, if at the same time the action of the heart is proportionally stronger than that of the arteries. In such cases also the skin is generally cool and clammy. The pain in pneumonia exists only in those cases complicated with pleurisy. In all others there is merely a sensation of weight, heat, or constriction, in the part affected. The pain either precedes or succeeds the chill, is most severe at the outset and usually ceases before the inflammation is extinguished. Pressure percussion, or sudden movements or cough increase it.

It has no particular location, but is generally felt on a level with the mamma. The patient is unable to lie upon

The painful side, neither can he repose upon the sound side, but chooses an intermediate posture. Thus lying, the breathing is easiest, and the pain from pressure avoided. The dyspnea, as a general rule, bears a direct proportion to the violence of the disease. In some cases, it is ~~at~~ very distressing, the patient cannot lie down and is scarcely able to speak, in others <sup>it is</sup> scarcely to be observed. Greater dyspnea attends inflammation of the superior, than the inferior lobes. The cough for several hours is unattended with expectoration. It may be very distressing and painful, in connection with a large or small amount of inflammation. In a few hours there is an expectoration of catarrhal mucus.

This continues for several days.

At the expiration of this period, the expectoration consists of an amalgam of blood and tenacious mucus.

In proportion to the quantity of the ingredients does the colour of the mixture vary from a yellow to decided red. The colour is not the only peculiarity of the expectoration. In the stage of hepatisation it is so tenacious, that no effort ~~effort~~ can shake it from the vessel containing it. These peculiarities of the sputa render it pathognomonic of this disease. It differs very strikingly from the streaked sputa of bronchitis, and the red masses ejected in pulmonary apoplexy. The quantity of the ex-

Expectoration increases with <sup>the</sup> progress of the disease, but never becomes very abundant. Prudent matter may be expectated in the latter stages of the disease.

Expectoration of the consistence and colour of plum juice denote the occurrence of gangren, more especially if it smell bad.

The average duration of this disease is about ten days. Many cases cease in a few days, while others may continue several weeks. In most cases the inflammation advances to the second stage. If it go beyond this, there is no hope of recovery. **Treatment**

In no disease is there a more impetuous demand for the use of the lancet.

The proximity of the organ to the heart its excessive vascularity and vitality



are some of the reasons why blood must be lavishly lost. The great relief afforded to the feelings of the patient, and the beneficial influence exerted upon the disease, are others of no less importance. The patient must be bled, while in an upright posture and until syncope approaches. By such loss of blood the pulse becomes softer; or, fuller if <sup>it</sup> were contracted; the difficulty of breathing relieved, and the feeling of heat or constriction abated. Cupping is also of great <sup>benefit-</sup> after general bleeding has been carried to the proper extent. If there be any lingering pain, it is effectually removed, while at the same time, it exerts a powerful revulsive influence.

After free bleeding the bowels must be cleared by some active and revulsive cathartic, such as a combination of calomel and jalap. Tartar emetic must now <sup>be</sup> given in such quantities as the stomach will bear, without emesis being produced. When the dyspnea is relieved we may intermit its use. It must however be resorted to again, if the dyspnea be not completely ~~compr~~ suppressed. If the inflammation does not yield to this treatment, but advances to the second stage, then, mercury in some form must be given, so as to approach ptyalism. Calomel is the preparation commonly used. Small portions of opium are combined with it in order to restrain

its purgative effect. By the exhibition of mercury, the effusion of lymph is prevented and its absorption promoted. During the use of mercury, counter irritation by means of blisters, exerts a very salutary influence. This is especially the case if there be some lingering pain or oppression. Should symptoms of debility arise, then we must give wine whey, ~~and~~ carbonate of ammonia and beef tea. In cases of persons habituated to the use of alcoholic drinks, the stimulus must not be entirely withdrawn. The diet in the first stage of the disease, must be restricted to vegetable infusions and the juice of ripe fruits. As the disease declines, the diet may be cautiously increased.