A Lecture

ON

SOME OF THE LESS COMMON ASPECTS
OF PNEUMONIA.

DELIVERED TO THE YORK MEDICAL SOCIETY.

BY

SIR THOMAS OLIVER, M.D., F.R.C.P.,

PHYSICIAN TO THE ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE.

PNEUMONIA is no longer regarded as a local inflammation of the lungs attended or followed by a rise of temperature, but rather as the localized expression of a constitutional state and due to the operations of a micro-organism.

Speaking generally, it is a striking fact that although a specific micro-organism is the recognized cause of a particular disease, and that without the microbe the malady is impossible, yet something more than the presence of the micro-organism in the body is required to explain disease. Tubercle bacilli, for example, may be present in the body without giving rise to symptoms. People harbour Eberth's bacillus for years, and go about in apparent health spreading typhoid fever, although they themselves are not suffering from the fever. The pneumococcus is present in the mouth in fully 25 per cent. of men and women, and yet these persons remain free from pneumonia. It would seem, therefore, as if pneumonia was something more than the presence in the body of pneumococci. There are the patient and his idiosyncrasies, the specific micro-organism, the toxins generated by the micro-organism, and the cellular reaction of the individual to the microbe and its toxins. When, therefore, the hitherto harmless diplococci present in the mouth become harmful, either the micro-organisms have become virulent or some inhibitory power previously exercised by the human body has been temporarily withdrawn, and by this removal the microbes assume characters not hitherto displayed. It is interesting to know that while under ordinary circumstances the diplococci in the mouth are not harmful to the host, yet they are just as pathogenic to animals as the diplococci obtained from a culture from the sputum of a pneumonic patient.

While insufflation of the diplococcus from the mouth into lungs previously irritated or weakened may cause pneumonia, it is possible that the microbe may effect an *entrée* by such other channels as the tonsils, the nasal or gastro-intestinal mucous membrane. In the body there are certain sites of selection for micro-organisms. No matter the portal of entry, tubercle bacilli finally make their way to the lungs; Eberth's bacilli reach the lower part of the small intestine; while such of the larger forms of life as the *Ankylostoma duodenale* are found in the upper part of the small intestine. The lungs are the organs of selection, but occasionally pneumococci fail to be entangled there; the micro-organisms reach the membranes of the brain, either through the nasal mucous membrane or blood, and, setting up a primary meningitis, the symptoms are largely cerebral, although the patient's appearance is that of a person suffering from pneumonia.

Mortality.

The opinion has been expressed that pneumonia within the last few years has not only become more frequent, but more fatal. Through the kindness of the Registrar-General, I am able to give the following information bearing upon this point.

DEATHS FROM PNEUMONIA IN ENGLAND AND WALES IN THE
YEARS 1901-8.

Lobar Pneumonia.

	Males.	Females.
In 1901	1,437	809
" 1902	2,184	1,291
" 1903	2,017	1,191
" 1904	2,345	1,546
" 1905	2,982	1,905
" 1906	3,117	1,874
" 1907	3,341	2,044
" 1908	3,030	1,788

Broncho-pneumonia.

	Males.	Females.
In 1901	8,022	6,984
" 1902	9,974	8,634
" 1903	9,269	8,156
" 1904	10,345	9,100
" 1905	10,022	8,783
" 1906	9,057	8,219
" 1907	11,237	10,080
" 1908	10,270	8,764

These figures show an increase of lobar pneumonia during recent years, but the Registrar-General remarks that "the increase in the number of deaths certified as due to croupous or lobar pneumonia probably indicates increased accuracy of certification rather than increased prevalence of the disease."

Pathology.

That exposure to rapid changes of weather predisposes to pneumonia is shown by the fact that 75 per cent. of the men who suffer have followed an out-of-door occupation, hence the liability of ordinary labourers to the disease. Outdoor work, however, is not *per se* a cause, since pneumonia occurs in men and women who are following indoor occupations. No month of the year is exempt from the disease, but it is in the colder months that it is most frequently met with. In my own cases the right lung had been most frequently affected, and of it the lower lobe. In the larger percentage of cases coming to an autopsy grey hepatization has been found. It would be interesting to know what percentage of patients get safely through the stage of grey hepatization. Because this condition is so frequently found after death it has been maintained that therefore it is one from which recovery never takes place. Since red hepatization rarely extends beyond the seventh or eighth day, and usually occurs as early as the third and fourth, what is the condition of the lung after the fourth day in patients who have a crisis on the seventh or eighth day, and who recover? Has it been only red hepatization? There are no means of knowing. All that is known is that in the majority of patients who die at this period, even as early as the fourth day, grey hepatization of the lungs is found.

Early delirium is by some physicians considered a dangerous sign; while it is probably more pronounced in alcoholic subjects, and lasts pretty well all through the illness, it yet occurs in persons of temperate habits. Within the last few weeks I have seen two patients suffering from acute croupous pneumonia, both young, healthy, and temperate men, aged 20 and 29 respectively, in whom delirium did not appear until the crisis was reached and the temperature had fallen to the normal. The delirium, which under these circumstances is toxæmic, may be of a severe character, and the patient with difficulty be kept in bed, but, after continuing for two or three days attended by insomnia, the patients pass into a prolonged natural sleep; they sleep for twenty-four hours or more, and awake perfectly rational. Delirium with soft rapid pulse, profuse perspiration, and cyanosis coming on in the early stage of pneumonia, are not hopeful signs.

One of the most distressing features in nearly all cases of pneumonia is the want of sleep. The insomnia undermines the nerve energy of the patient and exhausts him, and, as the sleeplessness may last for several days, it partly explains the light-headedness and wandering which are occasionally exhibited towards the sixth and seventh day of the illness. Notwithstanding the fact that insomnia is a distressful symptom, it is not wise to try to overcome it by giving a narcotic such as opium or morphine. The administration of a narcotic has, in my experience, transformed what was otherwise a fairly hopeful case into one of a hopeless character. It is a strange circumstance that, although the breathing is often short and rapid, and the patient appears to be the subject of considerable respiratory distress, he will often not acknowledge that he feels embarrassed in his breathing. It is otherwise if there is a swollen or catarrhal condition of the bronchial mucous membrane. This creates a mechanical obstruction to the breathing, throws more strain upon the right side of the heart, and adds considerably to the gravity of the prognosis.

A diplococcus underlies most cases of pneumonia, but other organisms may cause the disease—for example, the influenzal bacillus, the *Bacillus coli*, and Eberth's bacillus.

A short time ago I had under my care a sailor from a French man-of-war on the Tyne who had all the physical signs and symptoms of pneumonia, but the appearance of the patient, even in the absence of signs of intestinal derangement led me to regard and to treat the case as one of enteric fever in which the lesion was on the side of the lungs and not in the intestinal canal. For three weeks the temperature remained high, then fell and remained normal so long as the dieting of the patient was conducted on enteric lines, but after an absence of pyrexia for ten or twelve days the nurse, yielding to the entreaties of the patient for solid food, gave him a good meal of fish and potatoes, with the result that the temperature again rose and the patient passed through another three weeks of fever—a typical enteric relapse, yet with all the physical signs in the thorax and none in the abdomen.

Since several organisms can cause inflammation of the lungs it is difficult to say whether all pneumonias are of the truly fibrinous type and lobar in distribution.

Friedländer's pneumo-bacillus produces a form of inflammation of the lungs in no way differing in physical signs and symptoms from the pneumonia caused by the *Diplococcus lanceolatus* of Fraenkel, yet Fraenkel maintains that the only micro-organism capable of inducing true croupous pneumonia is the diplococcus just referred to, all atypical pneumonias being the result of other organisms.

Many medical men must be familiar with what for the moment may be called the "abdominal type" of pneumonia. A man or woman is suddenly seized with acute abdominal pain, accompanied or not by vomiting; this is followed by a rigor and probably by a rise of temperature. In the chest, on careful examination, nothing is detected, nor is there anything detected in the abdomen except pain on pressure located over the appendix or somewhere else in the abdominal cavity. Patients under these circumstances have been submitted to surgical operation without anything having been found, the after-course of the case indicating that the disease was croupous pneumonia, and that the pain had been due either to an inflammatory condition of the diaphragm, or, as Head has shown, had been reflected and explained by the lowest six intercostal nerves sending twigs to the abdominal parietes as well as to the lower portions of the pleura, whereby, as in cases where the eleventh thoracic nerve is irritated, pain is referred to the iliac fossa. Some of these abdominal cases exhibit metastasis.

The son of a medical friend left his office one summer afternoon in perfect health, and rode on his bicycle to his rooms up rather a hilly street in Newcastle. On reaching his lodgings he dismounted, but in doing so he was seized with acute abdominal pain followed by retching and collapse. He was seen shortly afterwards by a doctor, who put him to bed, applied warmth to the feet and abdomen, and gave restoratives. The patient had a wretched night, and next day his sufferings were in no way abated. I was called in consultation at midnight to find the youth in a state of collapse, with feeble pulse and retching, and complaining of acute abdominal pain. On examining the chest I heard a few râles, for the most part bronchial but not confined to one half of the chest. As the symptoms were abdominal and suggested perforation and the patient was only in rooms, it was decided to remove him to the infirmary in case abdominal exploration should be called for. Between the time of coming to this decision and his admission to the infirmary, a matter of about three hours, the pain in the abdomen had considerably subsided, the collapse was less, the temperature had risen, and there were unmistakable signs of pneumonia, including dullness and tubular breathing. No operation was therefore performed. The patient was transferred to a small ward, and for days he had all the physical signs and symptoms of pneumonia. All at once, when the illness was apparently running a normal course and the patient seemed to be doing well, he was again suddenly seized with acute abdominal pain. In my absence he was seen by one of the infirmary surgeons, who regarded his condition as extremely critical and calling for abdominal section, but before the preparations for the operation were completed and a telegraphic reply had been received from his parents the patient died. No autopsy was allowed, but the surgeon was of opinion that death had come from some acute abdominal cause and not from inflammation of the lungs.

Epidemics of Pneumonia.

Occasionally pneumonia assumes epidemic characters. While this is specially so during periods of influenza, other conditions may prevail. The epidemic of pneumonia which swept over Middlesbrough a few years ago, with rather appalling results, for a time baffled all attempts at explanation. Owing to the fact that many of the men who were affected had been engaged in the ironworks, it was thought that the nature of the employment had something to do with their illness. The epidemic having reached considerable proportions, the Local Government

Board sent down one of its medical inspectors, Dr. Ballard, to inquire into the nature and causes of the epidemic. It was not until Dr. Foulerton discovered a bacillus not unlike the *Bacillus coli communis* that the true nature of the disease was determined, and the cause of the pneumonia demonstrated to be tainted food which had been introduced into Middlesbrough.

While there is not the least doubt that the epidemic in Middlesbrough was pneumonia, although not due to the usual diplococcus, some of the so-called epidemics of pneumonia which have occurred in other parts of the country have not been pneumonia at all, but enteric fever with strong pulmonary tendencies. It is but a step from epidemic to endemic conditions, and yet even in these other causes may be in operation than those immediately suspected.

I was called in consultation to a neighbouring town to see a case of pneumonia in a working man; two or three days afterwards I was called by another practitioner to see another case of pneumonia in a working man who was living only a few doors away from the house previously visited. Within a week I was called by yet a different practitioner to see a third case of pneumonia in the same street. These three cases of pneumonia occurred within an area of a hundred yards. How much of this was merely coincidence, was the result of the condition of the atmosphere at the time, or of the nature of these men's employment, it is difficult to say. When a similar outbreak occurs in a school there is usually some flaw in the drainage. In one such epidemic of pneumonia in a school, sewer air was found to be entering a large dormitory by a ventilator in the wall.

Foul air, like dust and smoke, probably only predisposes to pneumonia. In Germany, owing to the increased quantity of smoke in the atmosphere of the large towns consequent upon the recent commercial prosperity of that country, acute inflammatory diseases of the lungs have more than doubled themselves during the last ten years. Experiments upon animals carried out by Asch have shown that if they are exposed first to smoke for a week or two, a certain number of hours daily, and are afterwards forced to inhale the *Aspergillus fumigatus*, an acute inflammation of the lungs develops more quickly and is more severe than in other animals not exposed to smoke, but only to the micro-organism. In Johannesburg the mine officials are of opinion that the diseases of the lungs which the miners suffer from are not due to the nature of their employment underground, but to the dust storms which prevail in the town and district. Dust, whatever its source, when inhaled may predispose to pneumonia, but it is more likely to induce bronchial irritation. While there is no reason why lobar inflammation of the lungs should not, quite apart from occupation, occur equally in a gold miner as in another person, still it is so much more prevalent in miners, and in them its effects are more serious, that there can be no doubt as to the greater susceptibility of miners working in hard rock to pneumonia, and their greater mortality from it compared with other occupied males in the same place. Doubt has been expressed as to whether dust is capable of causing a true lobar pneumonia. Fraenkel and Aufrecht maintain that the lesion is catarrhal and not croupous, but a section of the lung of a Kolar gold miner sent to me by Dr. O'Donnell (Mysore, India) reveals true fibrinous pneumonia. Lobar pneumonia is known to be a frequent cause of death among the miners at Mysore.

While direct injury to the lungs by inhalation of dust may predispose to pneumonia, external injury to the chest wall, even where no ribs are broken, is also capable of bringing about the same result. I admit that this statement may lead to unlimited speculation from the point of view of workmen's compensation. The physical signs and symptoms of traumatic pneumonia do not show themselves until the second or third day after the accident.

Usually pneumonia is not an infectious malady, and yet there is sufficient evidence to show that under certain circumstances it is as fatal in its consequences when it enters a household as the worst type of cholera. In 1882 Dr. Patchett told the story of an outbreak of pneumonia in a lonely farmhouse occupied by four brothers and one sister, all over the age of 60. They had all been in good health previously. One member after another of that

family became ill, and within ten days all had died of pneumonia. The shortness of time in which this family was wiped out suggests that the disease was of the nature of a local epidemic, and that all the members had become ill from one and the same source, but there was yet a sufficient length of time for infection or contagion to operate. Pneumococci, virulent to commence with, acquire additional pathogenic powers in passing from man to man.

One evening Dr. William Slater, of Newcastle, asked me to see in consultation with him a ship's captain who had returned a few hours previously from Hamburg, and who was the subject of a severe attack of pneumonia. Within two days this man died. Rapid decomposition of the body took place, and was attended by such an evolution of gas that the lid of the coffin was burst open and the house flooded with gas, the odour of which was almost intolerable. On the day of the funeral the wife, who had nursed her husband, and who until then had been quite healthy, developed pneumonia; she died on the sixth or seventh day of the illness. On the evening of her funeral the son developed pneumonia with exactly the same physical signs as the father and mother, but although the attack was severe, he made a good recovery. The different dates of the development of the pneumonia in mother and son do not permit of our eliminating altogether the influence of personal contact.

Chill.

As a causative agent of pneumonia the influence of chill has been doubted. In Sir Ernest Shackleton's Antarctic Expedition, although the men were exposed to the intense cold, none of them suffered from pneumonia, but this only shows that in addition to cold there must be a predisposed state of the body, and the presence of pneumococci in the respiratory passages. Fraenkel is of the opinion that cold is dangerous when, the superficial blood vessels having been previously dilated by severe exertion, an individual is suddenly exposed to some chilling influence.

A fortnight ago I saw with Dr. Jepson, of Durham, a strong, athletic young man suffering from double pneumonia, with marked signs of pretty extensive consolidation of both lungs. Two days before his illness he had been beagling, and had run, he thought, about thirty miles. Fatigued, and in a state of perspiration, he had lain down upon the ground. In this case the possible influence of chill in predisposing to pneumonia could not be altogether excluded.

Pneumonia and Pregnancy.

Acute inflammation of the lungs may develop at any time during the course of pregnancy, immediately before the commencement of parturition, or after the confinement is over. Occurring during the latter months of pregnancy, it is a serious complication to mother and child, since the enlarged uterus mechanically embarrasses the breathing.

A pluripara, aged 28, whom I saw in consultation with Dr. Taylor of Chester-le-Street, was in the sixth month of pregnancy and the subject of pneumonia. She gave the story of a chill, followed by shivering and pain in the left shoulder. On the following day the breath sounds were altered at the base of the left lung, and on the day succeeding this there were dullness over the left base and a temperature of 103° F. On the fourth day after the chill there were pain over the right costal arch, dullness at base of right lung, rusty sputa, friction over the base of heart, respirations 48, pulse 120, and temperature 103° F. Both bases were now dull, there were tubular breathing with small crepitations and exaggerated vocal fremitus. Owing to the lower half of the abdomen being occupied by a pregnant uterus, the breathing was extremely difficult. It was a question whether premature labour should be induced; but even if this had been agreed upon, the urgency of the dyspnoea prevented the patient lying down for the operation to be performed. It was decided not to induce labour, but to leave the case to Nature, and in this respect the decision was wise, for three hours after the consultation the patient miscarried. The child, born alive, died shortly after birth. There was no difficulty with the placenta or with the lochia; the pneumonia ran its course, and the patient made a good recovery.

Experience of this and other cases rather leads me to believe that the best results are obtained not by inducing labour, but by leaving the case to Nature. It is fortunate that in most of these cases labour is precipitate and the confinement is got over quickly. By this means the strain upon the heart is shortened. According to Wallich, pneumonia interrupts pregnancy in one-third of all cases before the sixth month, and in two-thirds from the sixth

to the ninth month. Maternal mortality in pneumonia in pregnancy is very high—it is anything above 50 per cent., and the fetal mortality about 80. When pneumonia occurs in the eighth or ninth month of pregnancy the infant may be cyanosed when born, develop pneumonia the day after birth, and recover; but a large percentage of the infants die. Pneumonia may develop just before parturition, as in the following case:

Mrs. S., aged 30, a pluripara, went shopping on October 30th. On her way home she suddenly felt very ill, was seized with violent headache, and had a slight rigor. On the following day labour came on, one week before the expected time, and although this was quickly got over she had such violent headache that the doctor had to give her some medicine to relieve the pain. She slept badly that evening, and on the following day her temperature was 103°, pulse 110, and the headache was still persisting. Two days afterwards, when seen by me in consultation, she had been seized with severe pain in the left chest; temperature was 103° F., pulse 120, and respirations 40 per minute; there was dullness over the base of the left lung posteriorly, the breathing was difficult, and the expectoration viscid but not rusty. The heart was satisfactory and the lochia normal. Salipyrin relieved the headache and steadied the temperature. While taking strophanthus and quinine her crisis came and she made a good recovery, the course of the confinement in no way being interfered with.

It is different when pneumonia develops after a confinement, for whether the micro-organism has been absorbed from the utero-tubal or vaginal mucous membrane, or has entered the body from without, there is a greater tendency for the disease of the lung to become septicaemic. This circumstance raises the very important question whether it is not rather the resistance of the individual to pathogenic organisms than the virulence of the organism which determines the type the inflammation of the lung will take. As Edwin O. Jordan² says in alluding to experiments with pneumococci, susceptibility is characterized by general septicaemic infection, and resistance by the occurrence of a localized process. Healthy men and women are resistant to pneumococcal infection, but after a confinement the resistance of women is reduced, so that pneumonia developing under these circumstances tends to assume septicaemic characters, which under other conditions would probably not be the case.

I cannot recall a case of acute ante-natal pneumonia, or the case of a child born suffering from the disease, while the mother herself was free from pneumonia. The circumstance, however, is known to occur. Professor Stuart McDonald, of the Newcastle College of Medicine, made an autopsy on an infant one day old, who had died of lobar pneumonia, while the mother had remained quite well. There is perhaps nothing so very unusual in the event when it is remembered that infants are born suffering from infectious diseases, while the mothers show no signs of such. The French obstetrician Mauriceau was born, it is said, with the vesicular eruption of small-pox upon his body, the malady being prevalent in the district at the time, but the mother had never shown the slightest sign of variola or anything to suggest that she had been ill.

Pneumonia in Infants.

It has been my fortune of late to see several cases of pneumonia in young children, and as the conditions in infants differ in some respects from those observed in adults, I will briefly allude to them. Such physical signs as dullness, tubularity of breathing, and previous history, show that the disease I refer to is primary lobar pneumonia and not an inflammation of the lung a sequel to pre-existing disease. Infants, unlike adults, do not have a rigor, but instead there is vomiting. In many of the patients, even at a comparatively early stage of the malady such as the second or third day, there is a marked tendency to collapse, which, if not immediately dealt with, may be fatal. It is to this collapse I particularly draw attention, as well as to the fact that the face, instead of being flushed as in adults, is oftener pale.

In one of my patients, the 6 months old daughter of a medical friend, whose illness began with signs of a head cold and sickness, followed a few hours afterwards by rapid breathing, there quickly supervened signs of consolidation at the base of the right lung, with crepitations and tubularity of breathing. On the third day of the illness she became suddenly collapsed and passed into a semicomatose condition in which she was unable to swallow. She was given an enema of saline, chicken broth, and brandy, and in a short time afterwards was so restored that she could swallow. On the eighth day of the illness the base of

the left lung became consolidated; on each of the four succeeding days there were fairly sudden and sharp collapses, from which she rallied after the administration of an enema with stimulant. Small doses of nux vomica and digitalis were also given by the mouth combined with an expectorant. After fourteen days, during which this infant, on account of her respiratory distress, had only the briefest snatches of sleep, she fell asleep for four hours. This was the turning point in her illness.

A similar tendency to recurrences of collapse was observed in the following case:

I saw a child, aged 16 months, son of a Brazilian naval officer, in consultation with the doctor of the Brazilian gunboat. Here, too, the lesion first affected the base of the right lung. Occasionally after the third day there would supervene collapse, during which the temperature would fall to 96° F., and remain thus for an hour or two, during which the infant would be in a state of semi-stupor, quite indifferent to his surroundings or what was done to him. By means of hypodermic injections of caffeine at one time, and at another of ten drops or more of camphorated oil, coupled sometimes with a small enema of beef tea and brandy, the child would rally. In this patient, while the base of the right lung posteriorly was the part first affected, about the eighth day the lower and middle portions of the right lung became affected and the patient passed through another attack of pneumonia attended by similar collapses and falls of temperature, but successfully met by means of caffeine, camphor, and stimulating enemata.

The collapses in the pneumonia of young children resemble in some respects the depressions which occur in ptomaine poisoning attended by low temperature, only the semi-stupor is more marked.

Incomplete Recovery.

When pneumonia has not proved fatal, recovery may be complete or incomplete. Setting aside empyema as a sequel of pneumonia, I wish to draw attention to a pathological condition in the lungs—namely, the morbid anatomy of those unresolved pneumonias which end in fibrosis and chronic phthisis, conditions to which both Osler and Babcock in their books allude. The final conditions are somewhat analogous to those observed in lungs irritated by dust. The inhalation of dust causes pneumoconiosis. The effects of dust upon the lungs of dogs and rabbits in the early stages of an alveolitis are shown on the lantern slides by the proliferation of epithelial cells and the presence of large phagocytic cells which have englobed dust particles. The later stages are thickening of the alveolar walls and increase of the fibro-connective tissue of the lung, especially around the small bronchi and the blood vessels, but in some of the other slides loops of capillaries can be seen bulging into the exudate within the alveoli, and inducing organization of the exudate. What would have happened eventually here had the patient lived would have been a marked increase of the fibrous tissue of the lungs, the fibrosis being the result of organization arising within the alveoli and the incorporation of the alveolar wall with it, whereas in pneumoconiosis the fibrosis rather proceeds from the wall towards the alveoli. As a consequence of organization of the exudate in unresolved pneumonias there take place thickening and hardening of the lung, followed by retraction and deformity of the chest wall.

Treatment.

I think the limits of time have already been exceeded. It is sufficient to say that I have not seen any striking result follow the use of pneumococcal serum, nor, although often giving great relief to the breathing, can I recall a case of pneumonia having been saved by the inhalation of oxygen. Strychnine and digitalis have given me, on the whole, the best results; with pneumonia, as with many other illnesses, it is not the disease solely that requires to be treated, but the patient with the disease.

REFERENCES.

¹ *Lancet*, 1882, vol. i, p. 305. ² *General Bacteriology*, 1909, p. 100.

A VERY successful meeting of the South-Eastern Division of the Medico-Psychological Association was held at Hanwell Asylum on April 26th, and was attended by a large number of the members of the Division. After the wards of the historic building had been inspected, the members were entertained to luncheon by Dr. Percy J. Baily, the medical superintendent. Subsequently, at the meeting of the Division, Dr. Baily read a paper giving an account of the history of the institution, with special reference to the time when Conolly put into practice his humane ideas of non-restraint in the treatment of the insane. Papers were also read by Dr. Devine on Kraepelin's clinic, and by Dr. Phillips on the treatment of melancholia by the lactic acid bacillus.

An Address

ON

SOME POINTS CONCERNING PNEUMONIA AND PNEUMOCOCCAL INFECTIONS IN CHILDHOOD.*

BY

T. R. C. WHIPHAM, M.D. OXON., M.R.C.P. LOND.

PHYSICIAN TO THE EVELINA HOSPITAL FOR CHILDREN; ASSISTANT
PHYSICIAN TO THE PRINCE OF WALES'S HOSPITAL.

I PROPOSE to deal with some points concerning pneumonia and pneumococcal infections in children as illustrated by some cases from the Evelina Hospital. While all will agree that bronchopneumonia is the more frequent type in early life, I wish to emphasize the fact that the lobar variety is commoner than is often supposed. Thus, among 150 of my own cases I found that 65, or 43.3 per cent., were of the lobar type. The chief clinical distinctions between the two are these: (1) Lobar pneumonia is almost always primary, while bronchopneumonia is very frequently secondary; (2) the onset of lobar pneumonia is sudden and the symptoms are well marked, whereas bronchopneumonia begins insidiously as a rule; (3) the temperature in the lobar form tends to be more uniformly high and to end by crisis, whereas in the other the course of the fever is prolonged and irregular and rarely ends abruptly; (4) lobar pneumonia usually affects a localized area of one lung, at any rate to begin with, while bronchopneumonia is bilateral and more extensive; (5) bronchopneumonia tends to occur at a slightly earlier age than lobar.

In lobar pneumonia the exciting cause is the pneumococcus, but in the bronchopneumonic form the infection is usually mixed—at all events, in the secondary cases—though it is true that in some of the primary cases the pneumococcus alone is found. Lobar pneumonia, according to my own experience, is most frequent during the second, third, and fourth years, 56.9 per cent. of my cases occurring during those years, whereas bronchopneumonia chiefly occurs during the first three years of life, as many as 70.6 per cent. of my cases being found in infants under 4 years of age.

In lobar pneumonia one or other of the bases is most frequently attacked, most commonly the left, but in children it is not unusual for the apex of the lung to be affected. It is remarkable that if one apex is involved—primarily, and not as the result of the extension of the disease from the lower lobes—it is practically always the right apex which is attacked.

The temperature in lobar pneumonia is usually high, and may remain for a time uniformly about 103° F. or 104° F., but, speaking generally, it shows more marked remissions in children than in adults. Occasionally, however, the temperature may be misleading in showing no marked rise. The crisis occurs, as in adults, usually between the fifth and seventh days, but in some cases it may be delayed until towards the end of the second week or even later. In mild or abortive cases the fever may terminate on the third or fourth day. An ending by lysis is more common in children than in adults, and was found in 15.3 per cent. of my cases. Usually it is of short duration, and the temperature reaches the normal between the fifth and eleventh days. In bronchopneumonia, on the other hand, the temperature is generally lower and of an intermittent type; in some cases the rise may be only very slight—perhaps not above 100°. The termination is by lysis—generally in two to four weeks—but in a number of cases the temperature does not remain normal until after, perhaps, ten or eleven weeks, or even longer.

The diagnosis of pneumonia in the early stages is frequently a matter of difficulty if the pulmonary signs are not in evidence. Indeed, I am of opinion that in some instances the signs of consolidation may never appear, possibly owing to the lesion being deeply situated, and yet the case run a course consistent with a diagnosis of pneumonia. As an instance, I may quote the following cases:

* Delivered before the Tottenham Division of the British Medical Association.