

ascertain whether bronchial dilatation saccular or fusiform has occurred and its degree of involvement in the different lobes. Not all cases of bronchial dilatation, if treated early, are irreversible. The necessity for all cases is a prolonged period of fresh-air treatment. Later reassessments by X-ray and bronchogram will decide whether in the persistent case lobectomy offers the best chance of improvement.

Lobectomy nowadays offers good or improved health to many of these pulmonary cripples among children, and has a rapidly diminishing mortality. It is wise to look, however, to the beginnings of these pulmonary insults, and in any child *after* either a pneumonia, or measles, or whooping cough with pulmonary complications, to X-ray the child's chest. Only so can we hope to be early on the track of pulmonary damage, much of which is preventable.

(In this article any reference to tuberculous conditions of the chest in children is purposely omitted.)

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PNEUMONIA IN OLD AGE

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The statistics of pneumonia in old age are often hard to interpret. In one series collected from past records at the Royal Hospital, Chelsea, the number of deaths from this disease was greater than the number of admissions to the infirmary with the diagnosis. This apparent fallacy is explained by consideration of the clinical course of pneumonia in old people. The majority of cases begin as a mild chronic bronchitis. This has an acute exacerbation, often associated with exposure to cold, fog, or damp. Then complications, such as bronchial spasm or pyrexia, or both, make their appearance. The patient now comes under medical care, is diagnosed as bronchitis and admitted to the infirmary for treatment. A few more obstinate old men try to "shake it off" with proprietary cough mixtures and hot whiskey. But, in a day or two, even these have to report sick. Such patients are often found to have signs of pulmonary consolidation when examined for the first time. They are thus admitted to the infirmary under the diagnosis of broncho-pneumonia. By this time,

however, some of the first group of cases have gone on to show pneumonic signs; so that it is not strange for the number of deaths from pneumonia to exceed the number of admissions sometimes.

Among the pneumonias, the lobar type is unusual in the aged, only four cases having been encountered by the writer in five years. The typical pulmonary consolidation is patchy in the elderly, more often showing signs at the bases and mid-zones of the lungs than at the apices. Most of the cases show pyrexia, but this is not invariable, since a temperature of 98.4 degrees is compatible with pneumonia in an old person. In some cases this actually represents two degrees of fever, and not normality for such a person. The pulse is often not much quickened, while the physical signs in the lungs may not always assist the diagnosis in the early stages. Some old men first come to notice as looking seriously ill, but having a respiration rate of forty as their only demonstrable physical sign. A second group have any signs of pneumonia obscured by widespread rhonchi in an emphysematous chest. Others only show scattered râles all over the lungs, more profuse at the bases than elsewhere for the first day of the disease. Both these groups have a raised temperature and respiration rate in addition to their other signs, as a warning to the doctor. If left alone, these cases show their consolidation in thirty-six to forty-eight hours after the rise of temperature. In a series of thirty-three Chelsea pensioners with broncho-pneumonia, sixteen began as bronchitis with pyrexia. Seven had a sudden onset, with indefinite signs in the lungs during the first day of the disease. Eight cases started as apyrexial exacerbations of chronic bronchitis with spasm. The remaining two men walked about and went to local public houses for a drink within eight and twelve hours of their deaths, respectively, in spite of extensive pulmonary consolidation when first examined.

Bronchial spasm, as shown by rhonchi, is not uncommon in cases which are developing pneumonia. Since the treatment of this complication by injection of $\frac{1}{4}$ -1 c.c. of adrenalin, instead of the usual antispasmodic mixture, the outlook of these patients has improved. The former common sequence, bronchial spasm—pyrexia—broncho-pneumonia is now unusual, even in patients who had shown this pattern once or twice before. The exhibition of sulphapyridine or sulphathiazole to patients with pyrexial bronchitis, has also appeared to diminish the occurrence of subsequent consolidation. The opinion of a ward sister at the Royal Hospital, looking back after twenty years, is that the recovery rate of "full-blown" pneumonias admitted as such, has not greatly increased. But the cases starting as pyrexial or spasmodic bron-

chitis do much better under the new régime than formerly.

It may be asked, "Why the necessity of adrenalin and M. & B. in chesty old men?" The answer is simple—to prevent subsequent heart failure. One of the commonest causes precipitating heart failure in Chelsea pensioners was a pyrexial pulmonary infection—22 in a recent series of 100 cardiac cases. Out of the thirty-three pensioners with broncho-pneumonia mentioned above, seventeen died from some form of cardiovascular failure. Eleven died within a few days and six within a year of the attack, as shown in the table.

CAUSES OF DEATH FOLLOWING
BRONCHO-PNEUMONIA

<i>Cause of death</i>	<i>Early</i>	<i>Later</i>
Left heart failure (Pulmonary oedema)	5	2
Right heart failure (Congestive)	1	1
Left and right failure	1	2
Toxic peripheral failure	3	0
Progressive cerebral ischaemia	1	1
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	11	6

The toxic peripheral failure cases mentioned above showed a fall of blood pressure, distended abdomen, complete or partial suppression of urine and peripheral vaso-dilatation as their clinical signs. Progressive cerebral ischaemia is a syndrome seen in old people with a falling blood pressure associated with cerebral confusion, going on to restlessness or violence and ending in coma and death. With these facts in mind, it will be seen that prompt treatment of pre-pneumonic states in old people is important.

When treating pneumonia in the aged, the general principles are the same as for younger persons. One or two points may be stressed, however. The first is the folly of waiting for unmistakable signs of consolidation to appear before giving sulphonamides. As indicated above, this may lead to temporary recovery only, due to the development of myocardial toxæmia. The second is the value of nursing these patients sitting upright in a tall armchair, preferably in front of a fire. The temperature of wards suitable for nursing elderly "chests" should be 68–70 degrees F. Old men are made worse by cold and much improved

by a few warm days, which transform a querulous, grumbling pensioner into a cheerful human being. As regards alcohol, it is to be remembered that Chelsea pensioners are used to their daily pint of beer. The administration of whiskey or brandy to pneumonic patients has been customary for years. During the past five years no ill effects have been noted from this usage.

As regards hypostatic pneumonia, there is not a great deal to be said. In the aged it usually follows some injury, like a fall causing a fractured femur, associated with considerable shock; or else arises in a bed-ridden patient. A common event is that an old man with cerebral arteriosclerosis has several episodes of confusion perhaps associated with aphasia, dysarthria or difficulty in swallowing suggestive of a pseudo-bulbar palsy. There may be changes in the expression and contours of the face, sudden sinking in of the cheeks, and sagging or drooping of the lips. Then there occurs the peculiar "chesty" breathing, associated with coarse bubbling sounds in the lungs, above bases dull to percussion. The skin is often flushed and the temperature somewhat raised. It has been suggested that this condition is a form of chronic pulmonary oedema. This is unlikely, since the administration of mersalyl produces no effect on such cases, nor has other treatment any avail.

The prognosis of pneumonia in the aged is now better than formerly. Early administration of sulphathiazole and relief of bronchial spasm with adrenalin appear to lessen the chances of fatal cardiac failure, usually heralded by a falling blood-pressure. A systolic figure of 100 mm. Hg. or below is a bad sign. So is a persistently high respiration rate. The worst is a temperature which remains high in spite of sulphonamides. A distended tympanitic belly or the onset of oliguria, though grave in import, do not necessarily indicate a fatal outcome. The aged have a remarkable hold on life and will surprise everyone time and again by their recovery. In fact, the best opinion to have in the aged pneumonic is "Nil desperandum."

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