USE OF POULTON'S OXYGEN TENT IN BRONCHOPNEUMONIA COMPLICATING WHOOPING-COUGH

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Bronchopneumonia as a complication of whooping-cough invariably carries a grave prognosis, and any method of treatment which can improve the outlook is to be welcomed. The following case therefore seems worthy of record, as it indicates that the oxygen tent can increase the expectation of recovery. It also illustrates the successful use of the tent in a young patient suffering from an illness which itself is liable to present many nursing difficulties.

Case Record

A well-nourished boy of 16 months was admitted to the North-Western Hospital on February 27th, 1935, suffering from whooping-cough. Six weeks previously he had had his first illness, an attack of bronchitis, for which he had been under treatment in a general hospital; in convalescence he developed a spasmodic cough, and was heard to whoop for the first time on February 26th.

On admission the child was found to have a few crepitations at the base of each lung, indicative of some bronchitis, but there was no fever, dyspnoea, or cyanosis. Typical spasms of coughing were occurring about eight to twelve times in the day, followed by a whoop and occasionally terminating in vomiting. On March 4th, five days after admission, the onset of a bronchopneumonia was heralded by a sharp evening rise of temperature to 103° F. and of respirations to 78. The next day there were numerous fine crepitations at both bases, and signs of partial consolidation over the lower lobe of the left lung. Thereafter the child continued acutely ill, with

a swinging temperature, but with a tendency to lysis accompanied by some clinical improvements. On March 10th, however, the temperature began to rise again, and this was associated with the appearance of signs of consolidation at the base of the right lung. From this point the child grew steadily worse, with increasing dyspnoea and cyanosis. With the onset of the pneumonia the whoop had ceased, but exhausting spasms continued, although to some extent controlled by sedatives. By the evening of March 14th, eleven days from the onset, the child was limp, exhausted, with a temperature of 103°, pulse 170, and respirations 88 and very shallow. In addition to the signs of consolidation at each base crepitations were generalized throughout the lungs.

In our opinion the prognosis had now become hopeless, and the patient could not have been expected to survive another forty-eight hours. In this phase of the illness the child was placed in an oxygen tent of the type described by Dr. E. P. Poulton, and kindly lent to us by him. The effect was immediate and striking. Cyanosis was rapidly relieved, and during the night the child had fair periods of sleep. Next day the temperature was normal, and was accompanied by an improvement in the clinical condition. From being listless and apathetic the patient became alert and interested in his surroundings, even attempting to play with the various "gadgets" inside the tent. The temperature remained normal, the pulse and respiration rates falling gradually. There was a rapid diminution in the moist sounds in the lungs, the signs of consolidation, however, persisting at each base. At first the spasms of coughing became more frequent and severe, but soon improved, becoming less distressing and slightly less frequent.

After ten days the child had improved to such a degree that the use of the tent was no longer considered necessary, the physical signs in the lungs indicating resolution at the right base but still some residual consolidation of the lower left lobe, the pulse steady at 130, and the respirations ranging from 30 to 40. Accordingly, on the afternoon of March 23rd, the child was removed from the tent. There was no immediate reaction and no return of cyanosis, although the evening temperature rose to 99° and there was some increase in the respirations. The child was quite comfortable in the subsequent twenty-four hours. The next night, however, he whooped and

vomited copiously, and the temperature rose to 104°, pulse 168, respirations 58. This marked the onset of a serious relapse. By the following day there were signs of complete consolidation again at the left base, and numerous moist sounds were present in both lungs. The temperature continued at 101°, pulse 140 to 160, respirations 40 to 50. On March 27th, the third day of this relapse, there being no improvement, the child was returned to the oxygen tent. As before, an immediate effect was obtained. The temperature was normal in twenty-four hours with a corresponding drop in the pulse and respirations. As on the first occasion, there was a rapid clearing of the moist sounds in the chest. The tenant himself was quickly "at home" again in the tent, and manifestly improved. The spasms of coughing continued as before, unaccompanied by whooping or vomiting.

After a second spell of ten days in the tent the consolidation at the left base had resolved, and on April 6th the use of the tent was finally discontinued. As the chart shows, this was followed by a slight reaction, the child running an evening temperature of 99°, with some increase in the respirations for the next week. The spasms of coughing, although no more frequent, became more severe, being accompanied by a whoop and sometimes by vomiting, but they quickly subsided, and after a fortnight had dropped from an average of eight to twelve to some three to five daily. Coarse crepitations persisted at the base of the right lung for a month after leaving the tent. Convalescence thereafter was straightforward. Whooping ceased on May 23rd, and the child was finally discharged on June 5th without symptoms or residual physical signs in the lungs.

Commentary

The above case, we suggest, illustrates in no uncertain manner the value of the oxygen tent in whooping-cough bronchopneumonia, and no other therapeutic measure in our experience has produced a comparable effect in a case of this apparent severity. That the result was due to the oxygen tent can hardly be doubted; but having a fair experience of this condition and the many unexpected results, disappointing or favourable, which are to be encountered, we are unwilling to presume that similar benefit will be obtained in all cases. A case of whooping-cough in such a young child imposes a severe test on the practicability of the method, and serious nursing difficulties might have been anticipated. Such as did arise were successfully surmounted, and at no time did the child show the least discomfort or intolerance of the apparatus. During the first spell in the tent the child was removed at four-hourly intervals for treatment, and in addition, when spasms of coughing were severe, the nurse had to open the tent at times to support the child. Despite this an oxygen tension of 30 to 40 per cent. was maintained, and in the second period, when the tent only required to be opened at four-hourly intervals, a percentage of 40 to 50 was easily kept up.

The effect of the oxygen on the spasms is also of some interest. As long as the patient was in the tent whooping and vomiting did not occur and the spasms tended to diminish in frequency, whereas on both occasions when he was removed from the tent whooping and vomiting immediately recurred, with a slight increase in the frequency of the spasms.

We wish to take this opportunity of thanking Dr. E. P. Poulton for kindly granting us the loan of the tent and instructing the nursing staff in its use.

The first number has appeared of *Speech*, the quarterly journal of the British Society of Speech Therapists. The publishers are Sir Isaac Pitman and Sons Ltd., Parker Street, W.C.2, and the price is 2s. 6d. While it is the wish of the society to include in its journal technical articles on speech defects and disorders by members of the medical profession, psychologists, physicists, and other specialists, it will also publish papers of a more simple nature likely to be of interest to teachers and parents.

COMMENTS UPON A CASE OF "PERIVENTRICULAR EPILEPSY"

BY

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I have to thank numerous unnamed friends for providing me with the clinical data for this dissertation. My task has been rather of the nature of a retrospective adjustment of parts of a puzzle in order to make a composite whole.

I wish to preface the account of this case with a few observations on the terminological inconsistencies which one encounters in the literature on epilepsy.

Terminology

The term "epilepsy" has two distinct usages. It may indicate a disease of unknown origin, or it may merely describe a syndrome. In the former instance, the term is the equivalent of what is known as idiopathic, true or essential epilepsy. In the latter, the significance is wider, and embraces all conditions whose outward manifestations are similar to or even identical with those encountered in the genuine malady. The former is an explanatory term, even although no explanation of the symptoms is known: the latter is a descriptive epithet. The first-mentioned usage is current in popular speech and is also met with in medical literature, but the scientifically minded neurologist who approaches the study of these states from the point of view of the physiologist prefers to confine the connotation of the term to the syndrome itself. He therefore speaks of epilepsy produced, let us say, by encephalitis or by heart-block, by cerebral cysticercosis, insulin hypoglycaemia, and so on. In general medicine this habit is not prevalent. One speaks rather of symptomatic epilepsy only until the cause is ascertained; and if and when it is, one ceases to call the syndrome epileptic at all, preferring rather to describe the state by the name of the pathological condition which has given rise to the convulsions.

Is it sacrilegious, I wonder, to suggest that the term "epileptiform" should be freed from its traditional usage as synonymous with Jacksonian epilepsy and employed in the sense of "not necessarily of idiopathic variety"? Admittedly much of the prevalent confusion is due to the fact that it is so frequently used in that sense. If the suggestion is not acceptable, perhaps some synonym for "symptomatic epilepsy" could be found. The term "epileptoid" has too narrow a significance.

To illustrate the contradictory senses in which the word epilepsy is employed, I may quote from an address on "Fits and Faints" by Dr. G. A. Sutherland.¹

"A difficulty often arises in the diagnosis of an attack of sudden loss of consciousness as to whether it was primarily cerebral, that is to say, of an epileptic nature, or primarily circulatory, that is to say, a faint or fainting attack."

This author would apparently exclude from the epileptic category an attack occasioned by a circulatory disturbance; but not so the aforesaid schematically minded neurologist, whose choice of nomenclature is unaffected by the aetiology of the syndrome. Such terminological misunderstanding has to some extent been mitigated by the use of the plural term. In order to stress the clinical polymorphism of epileptic phenomena, Kinnier Wilson prefers to speak of "the epilepsies." Advantageous as this is for schematic purposes, the age-long associations of the word still abide.

Amongst other "epilepsies," Kinnier Wilson has distinguished a special group characterized by the localization of the disorder in neurosympathetic centres to the relative exclusion of sensorimotor phenomena of somatic type. This group he has styled "periventricular epilepsy."² The fits are infracortical, and symptoms of an affective and visceromotor kind predominate. Included in this category are the well-known vasovagal attacks. In addition to the classical features of this syndrome a persistent low body temperature and the occurrence of uncinat auras (for example, an unpleasant taste accompanied by a strong sense of familiarity) are described.