A SECOND FIVE-YEARS' EXPERIENCE WITH A HIGH-HUMIDITY ROOM

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In 1954 the previous five years' admissions to the high-humidity room in the Children's Hospital in Vancouver were reviewed. The paper also described the structure of the room and how it functioned. During these five years (June 1949 to June 1954), over 450 infants and children with various acute respiratory ailments were admitted to this room. Of these over 140 were infants and children with acute laryngotracheobronchitis. All recovered without a tracheotomy.

This present paper deals with the five-year period June 1954-June 1959. During this time there were over a thousand admissions of infants and children with various acute respiratory ills to the high-humidity room. They were under the care of 30 attending doctors, most of whom were pediatricians. Of this group of patients 126 were diagnosed as having acute laryngotracheobronchitis. They can be divided into two groups. On admission, 86 had signs of obstruction in the respiratory tree, as shown by indrawing of the rib cage. The other 40 did not appear to have any indrawing of the rib cage although they had varying degrees of respiratory distress. In the group of 86, three tracheotomies were performed. These three patients made a good recovery without complications (see brief clinical reports of these below). It is interesting that two of them had radiological evidence of pneumonia or atelectasis, in addition to the laryngeal obstruction.

When one has carefully reviewed a large number of clinical charts dealing with the acute respiratory ills of childhood, it becomes quite apparent that the diagnosis in any instance is based only on the most obvious signs. The child with an acute, severe respiratory condition is sick as a whole and most certainly the whole respiratory tract is involved, some part or parts of it more than others. The division of the respiratory tract into upper and lower respiratory tract is an arbitrary one. This point is made because in this survey two other groups admitted to the high-humidity room probably benefited from the high humidity but were not diagnosed as having acute laryngotracheobronchitis. However, they showed varying degrees of obstruction in the respiratory tree. There were 38 infants and children diagnosed as having bronchiolitis. Fifteen of these were noted to have indrawing of the rib cage in addition to the other signs and symptoms ascribed to bronchiolitis. These 38 infants and children made a good recovery. The second group consisted of 39 infants and children diagnosed as having pneumonia (not associated with asthma), but in each instance there was some indrawing of the chest. They, too, recovered well. In these two groups (38 with...
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Case 2.—S.E.S., a 21-month-old child, was admitted to the high-humidity room just after midnight on February 17, 1957. The chief complaints on admission were severe respiratory distress with indrawing above and below the clavicles, vomiting, fever, and laryngeal “wheezeing”. The patient had 24 hours of “croup” with vomiting. This had worsened just before admission. There was no obvious cyanosis. She was put in an “O₂ bath” on admission to the high-humidity room. Her pharynx and palate were severely inflamed, and the pharynx was full of mucus. About two hours later it became obvious that her condition had deteriorated since her admission. She was taken to the operating room, where a tracheotomy was performed. The patient immediately improved and continued to do well. The tracheotomy tube was removed seven days later, on February 24. She went home well one week after that. On admission the white cell count was 8300, with 70% polymorphonuclear leukocytes. Culture of material taken from the tracheotomy tube grew Staphylococcus aureus, coagulase-positive, sensitive to all antibiotics. A chest radiograph taken two days after admission showed some scattered infiltration throughout both lung fields. A radiograph taken six days later showed that this had cleared.

Case 3.—H.L.S., aged 4 months, was admitted to the high-humidity room at about 11 a.m. on October 16, 1958. She had a diffuse eczema and was known to be allergic to milk. For this reason she was given one of the soybean milk substitutes. She was very hoarse, wheezy and had marked respiratory distress with indrawing of the rib cage. She continued to wheeze with indrawing but did not show very marked respiratory distress the rest of the day and evening. About 10 p.m. she became restless, with crowing and indrawing. A tracheotomy was performed about midnight, with immediate relief of her distressed breathing. During the next three weeks till November 8, when the tracheotomy tube was removed, she continued to have varying periods of respiratory distress. Some attempts at temporary plugging of the tracheotomy tube resulted in marked distress. With others she was fairly comfortable, especially if this procedure was carried out when she was asleep. She gradually improved and the tube was finally removed. Even after this, however, she continued to have short periods of indrawing. During one of these she became very cyanotic and was unconscious for a short period. She gradually improved and went home quite well on November 22, five weeks after admission. The treatment of this child included administration of several antibiotics in adequate doses. On November 7, the white cell count was 16,300, and the report of a chest radiograph on November 8 showed no recognizable disease, but markings were more prominent on the right side.

Conclusion

The high-humidity room has proved to be of great value in the care of the acute respiratory ills of infancy and childhood. It continues to function well and is now nearing the end of its 11th year of use.

I want to take this opportunity to thank the members of the resident staff who reviewed some of this material. Also I would like to thank the medical staff for their permission to allow me to review their cases for this study.

Reference