

INTUBATION WITH POLYVINYL CHLORIDE TUBES IN YOUNG CHILDREN

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A girl of 2½ years was admitted to Victoria General Hospital, Gozo, at 5.15 a.m. on Wednesday the 22nd January. The family doctor had first seen the child the previous evening at 10.00 p.m. and given her Penicillin and Streptomycin. On admission the child was suffering from laryngotracheitis. Treatment was started with: Penicillin and Streptomycin; steam kettle; blocks at head of bed; Prednisolone.

At 9.00 a.m. the child went into acute severe respiratory obstruction, and quickly become deeply cyanosed and lost consciousness. The pupils became dilated and there was marked indrawing of the suprasternal notch and intercostal spaces and much recession of the lower ribs. Oxygen was administered and the child become semi-conscious, regained a good pink colour but was struggling continuously and

started having repeated bouts of laryngeal obstruction with deep cyanosis. Restoration of the airway was imperative and it was decided to intubate. The child was quieted down with Fluothane using a Schimmelbusch mask, oxygen being administered throughout. A polyvinyl chloride tube, size 00, was passed nasally and was guided through the glottis with ease; the whole procedure (i.e. anaesthesia, intubation) taking less than 90 seconds.

The child quickly regained consciousness, did not become restless and soon went into a restful sleep with good normal pulse, pink colour and showing no sign of respiratory distress except for a slight increase in rate. An injection of Dexamethasone was given.

At 12.00 noon, she managed to wriggle out of the arm restraints and pulled

the tube out. No more serious respiratory emergencies occurred. It was decided to treat conservatively. She maintained a steady improvement and was discharged from hospital on 31. 1. 69. The child has been normal since then.

The case is presented because intubation was meant: i) as a life saving effort, which it was; ii) to be, if so required, a prolonged endotracheal intubation as described by T. H. Allen and I. M. Steven (1965) of Adelaide Children's Hospital. This technique has proved remarkably effective and complication-free, provided care and proper equipment are used.

Prolonged endotracheal intubation is rendered possible by the special non-irritating physical properties of polyvynil chloride: i) malleability; ii) plasticity at body temperature; iii) remarkable biological inertness.

Results of prolonged endotracheal intubation in small children (under 5 years of age) have been consistently good. In a personal communication Dr. Allen, the Director of Anaesthesia at Adelaide Children's Hospital, informs me that "several other medical centres are now successfully applying this technique as an alternative to tracheotomy."

It is no surprise, then, that the editorial comment in the Year Book of Anaesthesia 1966/67 should think it "remarkable how courage and experience can establish the validity of a sensible but often discarded approach to a solution of

a problem" and that the Editor's "bias and experience favour endotracheal intubation".

Prolonged pernasal intubation abolishes many of the complications of tracheotomy such as:

- i) Dislodgement of the tube
- ii) Surgical emphysema of the neck and mediastinum
- iii) Pneumothorax
- iv) Decannulation problems
- v) Many nursing problems.

Besides, intubation in an emergency will not only save the patient but provide optimal conditions for an elective tracheotomy (if this is decided upon) — much more practical and safe than emergency tracheotomy in the first instance.

The tube used on this child was one of a set given to me by the Chief Consultant Anaesthetist of Glostrup Amts Sygehus in Copenhagen where I first had experience of this technique.

Acknowledgements

My thanks are due to Dr. W. Grima (Supt. Vict. Hosp.) for permission to publish the case and to Dr. C. Grima for his help during the emergency.

References

- ALLEN, T.H., and STEVEN, I.M. (1965). Brit. J. Anaest., 37, 566.
Year Book of Anaesthesia 1966/67.