To paralyse or not to paralyse?

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The Pierre Robin syndrome occurs in 1 in 50 000 live births and is characterized by congenital micrognathia with glossoptosis. An associated cleft palate is found in more than 50% of patients, and cardiac and skeletal defects are present in 25–30% (Stehling, 1992).

Depending on the degree of microretrognathia, the infant may present with severe respiratory difficulties soon after birth. These are exacerbated in the supine position and may be compounded by aspiration when feeding is attempted (Stehling, 1992). To a large extent the deformity tends to correct itself within the first year of life, and surgical treatment is avoided if nutrition can be maintained and hypoxic episodes avoided.

CASE REPORT

A 5-month-old boy, who weighed 4.4 kg and had Pierre Robin syndrome, presented for repair of bilateral inguinal herniae. He had an associated cleft palate but was otherwise well. During his first month of life he had been admitted to hospital after one episode of respiratory difficulty at home. He was now much improved, being comfortable in the supine position. He had no dyspnoea, cyanosis or stridor.

He was not premedicated and was anaesthetized in theatre. After securing intravenous access, atropine 100 μg was administered, and he was induced with sevoflurane in 100% oxygen.

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Once an adequate depth of anaesthesia was achieved laryngoscopy was performed. The view was that of a grade three Cormack and Lehane (1984), which failed to improve with various manipulations. An attempt was made to pass a gum elastic bougie, but resulted in an oesophageal intubation. Although recognized quickly the infant desaturated to an arterial oxygen saturation (SaO_2) <70%. Manual ventilation with a facemask was attempted, but no lung inflation could be achieved. This lead to the first problem.

Dilemma 1

1. Give suxamethonium to relieve the laryngeal spasm
2. Continue with attempts at positive pressure ventilation, but for how long?

We had an infant who could not be intubated by conventional methods and is known to have a diffucult airway. Although this was maintained during a gaseous induction, it may be impossible to maintain once a muscle relaxant is administered, thus option 1 was rejected. The risks associated with option 2 were post-laryngospasm pulmonary oedema and/or hypoxia inducing a bradycardia or even cardiac arrest. The laryngospasm resolved and the infant resumed spontaneous respiration.

Once settled a laryngeal mask airway (LMA) was inserted, and a fibreoptic scope passed down it. A good view of the cords was obtained. However, this instrumentation resulted in a further episode of desaturation. This was managed as previously and resolved more quickly. This then lead to the second problem, relating to the original operation.

Dilemma 2

1. Abandon the hernia repair
2. Attempt instrumentation of the airway under spontaneous respiration
3. Paralyse, ventilate via the LMA and attempt instrumentation of the airway.

The operation was not urgent, the intubating conditions would be expected to improve with time and the infant would require an anaesthetic for repair of his cleft palate in about 4 months. However, if the herniae should strangulate in the meantime, this infant would present as an emergency. Option 1 was therefore rejected. Option 2 had already resulted in two episodes of desaturation, although it had been thought that an adequate depth of anaesthesia had been achieved. Option 3 was adopted.

First we successfully attempted to override the infant's spontaneous respiration with manual ventilation via the LMA. The infant was then paralysed with atracurium and a fibreoptic scope was passed through the LMA and into the trachea. A guide wire was passed down the suction port of the scope, and both the scope and LMA were removed. A Cook catheter was railroaded over the guide wire, the latter removed, and the catheter used to railroad a size 3.5 endotracheal tube into the trachea.

The operation continued uneventfully and the infant was extubated once fully awake. HM

Cormack RS, Lehane J (1984) Difficult tracheal intubation in obstetrics. *Anaesthesia* **39:** 1105–11

Stehling L (1992) *Common Problems in Pediatric Anesthesia.* 2nd edn. Mosby Year Book, St Louis: 63–8