

JET VENTILATION FOR LARYNGEAL MICROSURGERY

Sir,—Steward and Fearon (1981) state that “the use of jet ventilation via a cannula into the trachea appears to be a very dangerous practice” and in their opinion should be abandoned. It is their recommendation that insufflation with spontaneous ventilation is the preferred technique. This technique may suffice for laryngoscopy, but it is unacceptable for carbon dioxide laser microsurgery of the larynx. The surgical application of the carbon dioxide laser requires a motionless “target”. During spontaneous ventilation, the vocal cords are in motion, seriously interfering with the surgical technique.

We have performed more than 450 microsurgical procedures of the larynx utilizing the carbon dioxide laser. Our anaesthetic technique involves complete neuromuscular paralysis, i.e. anaesthesia and jet ventilation with oxygen via a 14-gauge needle placed in one of the four channels of the Abramson-Dedo laryngoscope. The tip of the ventilating needle lies just beyond the opening of the vocal cords (Ruder et al., 1981). Early in the development of this technique, pneumothorax occurred on two occasions (Oliverio et al., 1979). We have eliminated this complication by initiating ventilation with low inflation pressures (33 kPa in children and 100–130 kPa in adults).

It was also mentioned that “seeding of papillomata into the trachea” would seem to be increased if jet ventilation were applied (Fearon and MacRae, 1976; Steward and Fearon, 1981). About 40% of our patients were children with papillomata and we have no evidence of any tracheobronchial spread of this disease.

Since the laser vaporizes tissue and there is virtually no bleeding, we maintain that this technique is superior to the alternative methods utilizing aluminum foil-wrapped or metallic endotracheal tubes (Oliverio and Fearon, 1979) during carbon dioxide laser surgery of the larynx. These tubes must be inserted through the papillomatous area into the trachea before any laser treatment.

In our technique the use of the jet ventilating needle eliminates the danger of inadvertently cutting an endotracheal tube with the high-energy laser beam (Ruder et al., 1981); it provides a completely open surgical field and it allows adequate ventilation in the paralysed patient. The availability of four channels in our laryngoscope, allows the surgeon the freedom to place the ventilating needle away from the lesion and pointed directly down the trachea, thereby avoiding any trauma to the tracheal mucosa.

Another advantage of the jet ventilation technique over general anaesthesia by insufflation is that the latter provides no method for scavenging anaesthetic gases; the jet injector utilizes oxygen only.

We believe that the jet ventilation technique is the method of choice for carbon dioxide laser microsurgery of the larynx, and is preferable to insufflation with spontaneous ventilation.

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REFERENCES


RESUSCITATION OF THE NEONATE

Sir,—As I read the recent article on this topic (Rosen et al., 1981) I began to feel a quiet delight that at last the phenomenon of the “staircase pattern” of expansion of the neonatal lung—a process which was fairly generally known even 20 years ago—and its implications respecting schemes of resuscitation, was being acknowledged by a few more clinicians. My expectations were dashed when further reading revealed that the Cardiilf workers were intent upon describing yet another piece of apparatus.

As Rosen and his colleagues suggest, clinical judgement is the key to successful, non-injurious resuscitation. I fail to follow the logic which impels them to advocate an apparatus which requires the resuscitator not only to alter the blow-off pressure periodically, but also to time, in seconds, the intervals between such alterations. At the same time he is required to monitor the heart rate and other clinical attributes of the neonate. That is surely making too great a demand of the abilities of most of our (junior) clinicians who are called upon to resuscitate infants.

At the risk of causing tedium, may I reiterate my view that the only sensible, and least harmful, method of resuscitation, when the trachea is intubated, is that of intermittently puffing oxygen through the tube, using the cheeks as bellows. This ensures that a constant watch is kept, at eye level, on the anterior chest wall, providing evidence of expansion of the lungs and, by the exercise of “clinical judgement” of a fairly low order, guarding against excessive expansion. The “educated cheek” is no more difficult to acquire than is the “educated hand”. Furthermore, one hand of the resuscitator is left free so that, by lightly grasping the base of the umbilical cord between finger and thumb, the approximate heart rate and its response to resuscitation may be continuously monitored. Simple, effective, with no distracting apparatus and no valves which could stick or become clogged.

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REFERENCES