LARYNGEAL INCOMPETENCE DURING NEUROLEPTANALGESIA IN COMBINATION WITH DIAZEPAM

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SUMMARY

In eight patients, following carotid angiography under neuroleptanalgesia, a radiopaque dye was instilled into the pharynx. The chest was x-rayed 15 min later. All eight patients were observed to have aspirated the dye. The technique of neuroleptanalgesia described should not be used without safeguarding the airway in patients liable to regurgitate and inhale gastric contents.

Neuroleptanalgesia is the combination of a neuroleptic drug with a potent short-acting analgesic, in order to obtain a state of mental detachment, indifference to the environment and profound analgesia. It is a widely used technique (Wylie and Churchill-Davidson, 1972), and has been advocated both for obstetric analgesia (Hutchinson and McQuillan, 1974) and neuroradiological procedures (Cane, 1973).

Conventional anaesthetic techniques may adversely affect laryngeal competence, exposing the patient to the hazard of regurgitation and aspiration of acid gastric content. The purpose of this study was to assess the efficiency of laryngeal closure during neuroleptanalgesia.

METHODS

Eight adult patients, who gave informed consent, were investigated. The age range was 33-54 yr, five patients were males and three were females. All the patients were undergoing carotid angiography; the indications for neuroradiological investigation were:

- Cerebral tumour 5
- Head injury 2
- Cerebral aneurysm 1

There was no evidence of significant cardiopulmonary disease in any patient.

The subjects were starved for 6 h before the examination. On arrival in the x-ray department, an i.v. infusion of Ringer lactate solution was commenced. Atropine 0.6 mg was administered i.v. 5 min before the induction of neuroleptanalgesia.

Anaesthesia was then induced by injecting droperidol (Inapsin) 0.1 mg/kg into the infusion tubing, followed 5 min later by diazepam 5–10 mg. Thereafter fentanyl 0.05 mg/ml was injected slowly i.v. until the patient's respiratory rate decreased to about 12 b.p.m. Cannulation of the carotid artery was performed by the radiologist, after initial local infiltration of the skin with lignocaine 1%. On completion of the angiographic investigation and while the patient lay supine on the x-ray table, 7 ml of a radiopaque liquid (Dionosil) was placed on the back of the tongue with a soft-tip plastic catheter. In four of the eight patients, the eyelid reflex had returned at this stage of the investigation.

All of the patients appeared to swallow the dye immediately. An antero-posterior chest radiograph was taken 15 min later, with the patient remaining in the supine position on the x-ray table.

The interval between instillation of the dye and the x-ray examination was 10–30 min.

RESULTS

All eight chest radiographs exhibited clear evidence of Dionosil aspiration. The amount of dye inhaled was sufficient to outline the bronchi in each patient. Two examples of the radiographs are shown in figures 1A and B.

DISCUSSION

In this study, all of the eight patients investigated inhaled Dionosil while under the influence of a neuroleptanalgesic technique. However, none developed pulmonary complication as a consequence of secretions or dye inhalation.

Taylor and Towey (1971) failed to demonstrate radiological evidence of pulmonary dye aspiration in conscious volunteers lying supine and premedicated with hyoscine. However, several investigators have shown that reflex laryngeal closure is depressed under general anaesthesia (Nunn, J. F., 1967, personal communication to Tomlin, Howarth and Robinson...
concluded that depressant drugs should be used with great caution in the elderly.

Our study suggests that the method of neuroleptanalgesia, which we adopted, does not differ from the more popular general anaesthetic techniques in respect of the suppression of pharyngeal and protective laryngeal reflexes. The results indicate that neuroleptanalgesia should be accompanied by endotracheal intubation with a cuffed tube—perhaps especially during labour or in the semi-conscious patient undergoing neuroradiological investigation.

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REFERENCES

INSUFFISANCE LARYNGIENNE PENDANT UNE NEUROLEPTANALGESIE EN COMBINAISON AVEC LE DIAZEPAM

RESUME
Après une angiographie de la carotide sous neuroleptanalgesie, on a instillé dans le pharynx de huit patients un colorant opaque aux rayons X. On a radiographié la poitrine de ces patients 15 min plus tard et remarqué qu'ils avaient tous aspiré le colorant. La technique de neuroleptanalgesie décrite dans cette communication ne doit pas être utilisée sans protection des passages d’air des patients qui sont susceptibles de régurgiter et d’aspirer le contenu gastrique.
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SUMARIO

Se instiló un medio de contraste radiopaco en la faringe de ocho pacientes, tras angiografía de la carótida bajo neurolepsia con analgesia (neuroleptanalgesia). A los 15 min se radiografió el tórax, observándose que los ocho pacientes habían aspirado el medio de contraste. La técnica neuroleptanalgésica descrita no debiera usarse sin salvaguardar la vía aérea en pacientes expuestos a regurgitación e inhalación del contenido gástrico.