Sedation for cataract surgery

Comparison of Carbrital and neuroleptanalgesia

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Since the introduction of facial akinesia and retro-ocular anaesthesia for intraocular surgery, basal sedation has been used to achieve tranquillity for the patient.

Local anaesthesia combined with neuroleptanalgesia to produce a temporary pharmacological mental detachment from the surrounding world by means of intravenous injection is one of the methods increasingly preferred by many surgeons (Pöntinen and Miettinen, 1964; Pöntinen, Miettinen, and Reinikainen, 1966; Thomas, 1966).

In the following article, Carbrital, a compound containing Pentobarbitone and Carbromal in a ratio of 1 : 2.5, is compared with Droperidol and Fentanyl neuroleptanalgesia for cataract surgery.

Material and methods

A series of 44 patients operated on for cataract was divided into two groups of 22 each.

GROUP 1

Carbrital, 1 or 2 capsules, was given 2 hours before the operation. Patients over 70 years of age received one capsule and those below this age, two capsules.

Preoperative sedation was assessed 15 minutes before the patient was due to go to the operating theatre. If sedation was poor, it was supplemented by a smaller dosage of chlorpromazine (Largactil).

After facial akinesia and retro-ocular anaesthesia had been induced with 2 per cent. Lignocaine, surgery was carried out in the conventional manner.

GROUP 2

Droperidol 5 to 10 mg. was given intramuscularly 1 hour before the operation. Patients over 65 years of age received 5 mg. and those below this age, 10 mg. None of them received Phenoperidin as a premedication for fear of respiratory depression.

In the operating theatre an intravenous injection of Fentanyl 0.05 to 0.1 mg. diluted with 5 per cent. dextrose was given with 1.5 to 3.0 mg. Droperidol in divided doses before and during the operation, as required. By this means complete control over sedation and analgesia was achieved throughout the operation.

In all cases facial akinesia and retro-ocular anaesthesia were produced by 2 per cent. Lignocaine and surgery followed in the conventional manner.

Observations

(1) Table I shows the assessment of preoperative sedation in Groups 1 and 2.

Good sedation is taken to mean in deep sleep, moderate sedation partly asleep, and poor sedation fully awake. Those who were fully awake, having received only Carbrital, are shown as "needing supplementation".

Table I *Preoperative sedation*

Drug	Preoperative sedation			
	Good	Moderate	Poor	Needing supplementation
Carbrital	8	9	5	5
Droperidol	18	4	0	0

(2) Table II shows the degree of co-operation by the patient during surgery.

Good co-operation means that the patient did not complain of pain or make unnecessary movements of the limbs or head during the whole operative procedure.

Inadequate co-operation means that the patient complained of a sensation of pricking while receiving local anaesthesia and very often remained restless during the operation, moving his head, and talking to himself, or questioning the surgeon.

Table II *Patient co-operation during operation*

Drug	Co-operation of patient	
	Good	Inadequate
Carbrital	11	11
Droperidol	17	5

Table III *Complications of anaesthesia*

Drug	Complications		
	Moderately serious	Minor	None
Carbrital	0	0	22
Droperidol	2	1	19

(3) Table III shows the complications of anaesthesia which occurred. Carbrital was followed by no complications, but in two cases neuroleptanalgesia was followed by "moderately serious" complications, comprising total apnoea, cardiac arrhythmia, and fall in blood pressure which necessitated intubation and reversal by Nalorphine. One of these patients was a female aged 92 years in whom an electrocardiogram showed possible myocardial infarction; the other had a normal electrocardiogram.

The one "minor" complication comprised a fall in blood pressure and gross depression of respiration which came down to below 5/min. so that the patient became cyanosed. This was reversed by Nalorphine and oxygen inhalation.

Neither vasopressors nor atropine had to be used at any time.

(4) Postoperative sedation and complications are shown in Table IV (opposite). Adequate sedation was achieved in 21 out of 22 patients receiving neuroleptanalgesia. Postoperative hallucination occurred in one patient: a woman of 55 years who described having a "funny" sensation of detachment from her surroundings and saw shadows of people around her.

Table IV *Postoperative sedation and complications*

Drug	Postoperative sedation		Postoperative complications	
	Adequate	Inadequate	Vomiting	Hallucinations
Carbital	16	6	1	0
Neuroleptanalgesia	21	1	0	1

Only one patient receiving Carbital had postoperative vomiting, but six were inadequately sedated, compared to only one of the neuroleptanalgesic group.

Conclusions

Preoperative sedation

Good sedation was achieved in twice as many cases with Droperidol as with Carbital.

Fourteen patients under Carbital had inadequate sedation and in five it had to be supplemented with 25 mg. Largactil intramuscularly.

Co-operation

Inadequate co-operation was seen in more than twice as many patients under Carbital as in those under neuroleptanalgesia. This is because neuroleptanalgesia can be controlled and phased during the whole operation.

Complications of anaesthesia

In the series under neuroleptanalgesia there were three cases with complications ranging from depressed respiration to total apnoea, cardiac arrhythmia, and fall of blood pressure. This means that neuroleptanalgesia is comparatively dangerous to handle and requires the presence of an anaesthetist. All three patients were completely and quickly resuscitated by the use of the proper antidote.

The most important advantage of neuroleptanalgesia is that full sedation and co-operation can be achieved by controlling and phasing the dosage by intravenous injection throughout the operation.

The absence of postoperative vomiting after neuroleptanalgesia is another advantage in intraocular surgery.

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References

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