*number determined for the leak pressure should be one of many factors used in deciding when to change a tight-fitting endotracheal tube.*

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# *Clonidine and postoperative myocardial ischaemia*

To the Editor:

Quintin *et al.* recently suggested that clonidine, given as premedication, might decrease the incidence of myocardial ischaemia in patients at risk.[1]

As the number of patients of this study was limited, firm conclusions depend on the results of other similar studies. We recently conducted a double-blind study to assess the effect of epidural clonidine on postoperative myocardial ischaemia. Forty-five ASA 3 patients scheduled for abdominal aortic surgery were included after informed consent and Ethics Committee approval.

Surgery was performed under combined general anaesthesia (using propofol, fentanyl and isoflurane) and thoracic epidural anaesthesia (using 0.5% bupivacaïne). Postoperatively, patients were randomly assigned to receive a continuous infusion of either fentanyl (0.4 $\mu g \cdot kg^{-1} \cdot hr^{-1}$) (Group F (fentanyl group)) or fentanyl (0.4 $\mu g \cdot kg^{-1} \cdot hr^{-1}$) plus clonidine (0.3 $\mu g \cdot kg^{-1} \cdot hr^{-1}$) (Group F + C (fentanyl + clonidine group)). Patients were monitored during the first 24 hr with an ST segment analyser (Merlin®, Hewlett Packard) (leads II, $V_4$, $V_5$) and pulmonary and radial artery catheters. Myocardial ishaemia was defined as an ST-segment decrease or increase > 1 mm from the base line for at least one minute. Hypotension was defined as a systolic arterial pressure <90 mmHg, hypertension as a systolic arterial pressure >160 mmHg and tachycardia as an increase in heart rate >110 bts/min. Haemodynamic events and myocardial ischaemia were treated according to the judgment of the physician in charge of the patient who was aware of the analgesic treatment given. Statistical analysis used the Mann-Whitney U test and the Fisher exact test. Results are expressed as mean ± SD.

TABLE I Cardiovascular risk factors and previous treatments given to the patients

| | *Fentanyl* | *Fentanyl + clonidine* |
|---|---|---|
| Angina | 3 | 4 |
| Previous myocardial infarction | 3 | 1 |
| Hypertension | 11 | 9 |
| Diabetes mellitus | 1 | 3 |
| ECG abnormalities indicative of ischaemia | 7 | 5 |
| Nitrates | 2 | 1 |
| Beta blockers | 6 | 2 |
| Calcium channel blockers | 7 | 7 |
| Converting enzyme inhibitor | 2 | 4 |
| Diuretics | 2 | 4 |
| Anticoagulants | 6 | 7 |

TABLE II Number of episodes of ST changes associated with changes in heart rate and arterial blood pressure

| | *Hypotension* | *Hypertension* | *Tachycardia* |
|---|---|---|---|
| Group F | 1 | 9 | 2 |
| Group F+C | 0 | 1 | 3 |

Twenty-two patients were given fentanyl and 23 fentanyl + clonidine. Patients in the two groups were comparable: age (years) 65 ± 2 vs 66 ± 9, sex ratio: 1 W/21M vs 3W/20M respectively in Groups F and F+C. The cardiovascular risk factors and previous treatments are reported in Table I.

The duration of surgery (Group F : 210 ± 114 min, Group F+C : 238 ± 118 min) and the time of aortic cross-clamping (Group F : 55 ± 34 min, Group F+C : 78 ± 40 min) were comparable in the two groups. Significant ST changes indicative of ischaemia were noticed in 11 patients in group F and 6 in group F+C (NS). The cumulative durations of ishaemia were respectively 87 ± 31 min (range 3–503 min) and 23 ± 25 min (5–60 min) in Groups F and F+C. Twenty-one and 11 ST changes occurred respectively in Groups F and F+C without simultaneous changes in blood pressure and/or heart rate. The distribution of ST-changes episodes associated with haemodynamic events is reported in Table II which demonstrates that ST changes associated with hypertension were more frequent in Group F ($P < 0.05$).

Clonidine has been previously documented to decrease sympathetic activity[2] catecholamines plasma levels[3] and to produce postoperative analgesia.[4] Clonidine may prevent myocardial ishaemia related to increased oxygen consumption induced by increased cardiac workload. This study therefore confirms previous data from Quin-

tin's group and encourage larger epidemiological trials with clonidine.

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# *Unattended continuous infusion of hyoscine leading to delayed visual disturbances*

To the Editor:

Transdermal hyoscine patches have been used effectively in the prevention of postoperative nausea and vomiting,[1–5] especially if applied several hours before surgery.[1,2,4,6,7] Minor visual disturbances after application have been reported.[4,8,9] The described patient complained of visual disturbances for more than 96 hr after application of a hyoscine from patch site but these only became severe enough for the patient to complain to medical staff after 72 hr.

The patient was a 52-yr-old woman who, apart from long-standing epilepsy (controlled with carbamazepine 400 mg daily), was healthy. She had chronic cholecystitis due to gall stones and was scheduled for cholecystectomy (?laparoscopic). She was given premedication with a transdermal hyoscine patch, 1.5 mg, on the skin behind the left ear on the mastoid process, six hours and temazepam 20 mg *po* two hours before surgery. She was counselled for patient-controlled analgesia machine for postoperative pain control if open cholecystectomy was required.

She received a standard balanced anaesthetic technique utilising induction with thiopentone, analgesia with fentanyl, and muscle relaxation with vecuronium. Maintenance of anaesthesia was with halothane in nitrous oxide/oxygen and relaxation was maintained with incremental doses of vecuronium. Standard monitoring included ECG, non-invasive blood pressure measurement, pulse oximetry, end-tidal carbon dioxide monitoring, airway pressure, expired tidal volume and a peripheral nerve stimulator. Cholecystectomy was performed successfully through the laparoscope although the surgical procedure lasted approximately two hours. Residual neuromuscular blockade was reversed with neostigmine and glycopyrronium. The postoperative period was uneventful. She required only one injection of morphine sulphate 15 mg, *im* and PCA was not required. The following day she was fully mobile, drinking and eating normally and received her usual dose of carbamazepine. On the third day she complained of difficulty in reading and visual hallucinations but no dryness of mouth. Neurological examination revealed only bilateral dilated pupils and sluggish reaction to light. The patient was reassured. The visual hallucinations, difficulty in reading and dilated pupils continued for another day. It was then discovered accidentally that the hyoscine patch was still applied to the skin behind the ear. The patch was removed and the visual disturbances resolved after a few hours.

The manufacturer of transdermal hyoscine patch (Ciba-Geigy) recommends the application of a 1.5 mg patch onto a clean, dry hairless area of skin behind the ear for maximum absorption.[10,11] The visual disturbances were clearly related to the continued absorption from the site of hyoscine patch because the symptoms only disappeared after its removal. A case of unattended continuous infusion of fentanyl has been previously reported after transdermal fentanyl patch application[12] and the importance of good communications between nurses, pharmacists and anaesthetists was emphasised to prevent a similar episode. Although the application of the transdermal hyoscine patch could not be justified for the surgery performed, nevertheless the patch was applied in advance and remained applied and this caused the visual disturbances of prolonged duration. Since this incident, we have also followed the advice of good communication and a routine inspection of the patch area. No further problems have arisen.

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