Correspondence

Trisilicate is not now the alkali of choice, but there are
alternatives. I believe that metoclopramide, by increasing
lower oesophageal sphincter tone, hastening gastric empty-
ing and preventing vomiting, is an appropriate drug to use.

These young women are usually otherwise healthy, often
undergoing an investigative procedure. It is imperative that
the anaesthetic technique is designed to keep the mortality
rate at zero and the morbidity rate to the absolute minimum.

Brian L. Duffy
Adelaide,
South Australia

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Tympanic Membrane Rupture During Nitrous Oxide
Anaesthesia

Sir,—The use of nitrous oxide has been associated with the
expansion of a pneumothorax (Eger and Saidman, 1965;
Eger, 1974), an increase in intracranial pressure (Fuller
and Lewis, 1975), and increased intracranial tension follow-
ing pneumoencephalography (Artru, 1978). Impairment of
hearing following pressure change in the middle ear has
been reported in susceptible patients (Patterson and
Bartlett, 1976), but tympanic membrane rupture is a rare
complication. Owens, Gustave and Selasoff (1978) reported
two patients who had pre-existing ear disease.

A 28-yr-old woman weighing 75 kg was admitted for
late termination of pregnancy and laparoscopic sterilization.
She was healthy, but had had a mild cough 2 weeks earlier
for which an antibiotic had been prescribed. There was
no past history of earache or hearing deficiency.

Labour was induced by extramamnetic prostaglandin E2
and an infusion of syntocinon 40 i.u. in 500 ml of 5%
dextrose was instituted. Eight hours later a 20-week-old
fetus was delivered. The following morning the patient
received papaveretum 15 mg and hyoscine 0.3 mg; anaes-
thesia was induced with thiopentone sodium 350 mg;
tracheal intubation was facilitated by alcuronium 20 mg.
Anaesthesia was maintained with nitrous oxide 6 litre
min⁻¹ and oxygen 4 litre min⁻¹ and halothane 0.5%, and
intermittent positive pressure ventilation performed using a Penlon–
Oxford ventilator delivering a tidal volume of 10 ml kg⁻¹
body weight at a frequency of 12 b.p.m. The patient was
placed in the lithotomy position and the retained products of
conception were evacuated; ergometrine 0.5 mg was
given i.v. to promote uterine contraction. Uterine bleeding
continued, so a further dose of ergometrine 0.5 mg was
given, and an i.v. infusion of Hartmann's solution was
commenced. The patient was placed head-down and
laparoscopic sterilization performed using a carbon dioxide
pneumoperitoneum. During this procedure blood was
noticed in the right external auditory meatus. This was
removed, no further bleeding was noted, and surgery was
completed uneventfully. Antagonism of neuromuscular
blockade was achieved with neostigmine 2.5 mg and
atropine 1.2 mg, and the patient made an uncomplicated
recovery.

The following morning the ears were examined and a
perforation of the right tympanic membrane was found.
The only complaint made by the patient was of some
"heaviness" on the affected side. She was referred to a
Consultant Otolaryngologist who believed this to be an
acute traumatic rupture of the tympanic membrane, an
opinion supported by the fact that it healed completely
without treatment in 4 weeks.

I believe that nitrous oxide was the agent most likely to be
responsible for this rupture.

S. Srivastava
Aldershot

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nitrous oxide five days after pneumoencephalography.
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impairment caused by intratympanic pressure changes
during general anaesthesia. Laryngoscope, 88, 399.

Cardiovascular Responses to the Sitting Position

Sir,—In a recent issue, Dalrymple, MacGowan and
MacLean (1979) noted considerable haemodynamic changes
when patients were raised from the supine to the sitting
position during neurosurgical procedures. They described
marked decreases in cardiac index, stroke volume, Pao2,
and Q1/Q0 and a significant increase in (Pao2-PaCO2)
and total peripheral resistance. They concluded that the
maintenance of normotension in the sitting position did not
necessarily signify an adequate circulatory status.

There is a considerable cardiovascular challenge involved
in changing from supine to the sitting position in the
relatively healthy patient. A "stable" arterial pressure may
be recorded in the presence of an inadequate or marginal
perfusion and care should be exercised in subjecting the
elderly or poor-risk patient who does not have active
compensatory mechanism in this position.

Albin and others (1974) studied the cardiovascular
responses in eight patients aged 41–56 yr, all being ASA
physical status I except for one patient who was ASA II.
All patients underwent posterior fossa cranial nerve
exploration and had no evidence of intracranial lesions nor
increased i.c.p. Premedication, anaesthesia induction and
maintenance and ventilation were standardized. Appropriate
catheters were inserted and cardiac index (indocyanine
green dye dilution cardiac output and body surface area
measurements), oxygen transport (cardiac output and