occurs might make a significant impact on the devastating morbidity and mortality of coronary artery disease, but I hope it will not be done at the expense of increasing the already widespread fear of the condition.—I am, etc.,

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Natural History of Ventricular Septal Defect

SIR,—Your leading article on the natural history of ventricular septal defect (4 December 1971, p. 571) digresses to make a well-timed and well-justified appeal for primary closure of large ventricular septal defects in infancy. However, it might be misleading to some of your readers in seeming to suggest that primary closure of ventricular septal defects in young sick infants can now be offered at a known low risk in this country. As far as I am aware no such statistics are available, and the results to which you refer from overseas relate to only small numbers of younger infants. Conceivably, also, centralization of this operation for these young and usually very sick infants might not prove practicable. At the present time it would seem that there may still be a place for advising pulmonary artery banding in selected patients.—I am, etc.,

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Psychosis and Ketamine

SIR,—We read with interest the report of a psychotic illness following ketamine anaesthesia (13 November, p. 428).

In February of this year a 23-year-old female was admitted to our burns unit. She had been an inpatient in a mental hospital, suffering from psychotic depression in the puerperal period after the birth of her second child. She had set her bed clothes on fire and sustained 38% deep full-thickness burns of her trunk, right upper limb, and right lower limb. She required three major operations for removal of slough and skin grafting and one minor skin grafting procedure. She also required eleven burns dressings.

The first and the second major operations were performed with conventional anaesthesia using nitrous oxide, oxygen, and halothane. Each of these anaesthetics was complicated by profound hypotension despite adequate blood replacement. It was then decided to perform subsequent skin grafting and the major dressings with ketamine anaesthesia. She had six uncomplicated ketamine anaesthetics. She was premedicated either with pethidine, promethazine, and atropine or with droperidol and atropine, and she was sedated postoperatively with diazepam or chlorpromazine. The maximum dose of ketamine administered was 260 mg during a 90-minute operation. She also had six minor burns dressings with methoxyflurane analgesia.

She never had unpleasant dreams but always complained of feeling detached from herself in the postoperative period. This feeling was less unpleasant when she was sedated with chlorpromazine. Her mental condition while in the burns unit was not upset by ketamine, and her subsequent psychiatric progress has in no way been affected by the use of ketamine.

Our experience with this patient has shown, contrary to accepted opinions, that ketamine can be used with its distinct advantages in patients who are mentally ill. It is necessary to use a premedication and to avoid overdosage with the drug. Postoperative sedation is probably advisable in these cases.—We are, etc.,

S. M. LAIRD

M. SAGE

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Idiosyncratic Responses to Phenothiazines

SIR,—We would like to report three cases in which acute extrapyramidal symptoms developed after treatment for nausea by a single dose of perphenazine. A number of points emerged. Firstly, considerable confusion in diagnosis may arise. In these cases the following diagnoses were considered: epilepsy, hysteria, tetany, and tetanus. Secondly, only a small dose of perphenazine had been given. Thirdly, intravenous benzotropine methanesulphonate gave complete relief of symptoms.

The signs and symptoms of idiosyncratic responses to phenothiazine drugs often cause confusion in diagnosis, for two reasons. Firstly, they are not commonly found as an acute phenomenon. Secondly, in the acute situation the symptoms produced mimic extremely well other serious conditions. Phenothiazine derivatives are well known to cause extrapyramidal symptoms when used over a long period,¹ but there are few reports of an acute episode. R. B. Bradshaw described a case in which symptoms occurred after a single dose.² Diazepam may help to control the spasms but benzotropine methanesulphonate has been shown to be a specific antidote.

We would like to emphasize this bizarre side effect of the phenothiazine group of drugs, and in particular of perphenazine, since it is commonly used as an antiemetic.—We are, etc.,

P. D. RAMSDEN

D. L. FROGGATT

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¹ Ayd, F. J., *Journal of the American Medical Association*, 175, 1054.

² Bradshaw, R. B., *Journal of Laryngology and Otolaryngology*, 1969, 83, 79.

Haemophilus Epiglottitis

SIR,—We were interested to read about the experiences of Dr. M. G. Addy and others in their paper on *Haemophilus epiglottitis* (1 January, p. 40). We reinforce the authors' emphasis on the fulminating nature of the condition and the need for urgent relief of the respiratory obstruction. However, we cannot agree that there is a need for tracheostomy in all cases. If the larynx can be visualized—and this procedure must be carried out in an area where emergency tracheostomy could be performed—then it is as easy to introduce an endotracheal tube as it is a bronchoscope. Failure of intubation in this condition is a possibility but is rare in our experience. Since antibiotic therapy is rapidly effective if administered parenterally, the artificial airway is needed only for 48–72 hours, and it seems to us a condition

eminently suitable for treatment by intubation with a plastic nasotracheal tube.

The management of tracheostomy and endotracheal intubation is very similar—that is, adequate humidification and routine suction with an aseptic technique. We would be interested to know what form of sedation, if any, was given to these children to enable them to tolerate the procedure of bronchoscopy and tracheostomy. In conclusion, we would reinforce the suggestion that there is a need for every doctor to be aware of the existence of this condition and of the very urgent need for appropriate treatment.—We are, etc.,

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KEITH D. ROBERTS

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SIR,—We are most interested to read the article on *haemophilus epiglottitis* by Dr. M. G. Addy and others (1 January, p. 40), and we would like to reinforce further their statement that the disease is not merely a local inflammation but also a septicæmic condition by describing our recent clinical experience with a child admitted to this hospital with "croup."

A 16-month-old boy was admitted with a history of being unwell for a day and noisy distressed respirations for two hours before admission. On admission he looked ill and ashen with a moderate laryngeal stridor. His temperature was 39.8°C and the respirations were 40 a minute with a moderate subcostal recession. He had inspiratory wheeze with scattered crepitations over the right base. The pulse rate was 156, regular with good volume, and there were no signs of cardiac failure. There was no evidence of meningitis and no other abnormal signs. The Hb was 13.2 g/100 ml, E.S.R. 45 mm in one hour, and W.B.C. 15,400/mm³ with polymorphs 60%, lymphocytes 35%, monocytes 3%, and eosinophils 2%.

The child was treated, as having acute laryngitis, in an oxygen tent with an adequate humidification under cover of ampicillin, cloxacillin, and hydrocortisone. The antibiotics were given six-hourly in doses of 125 mg intramuscularly for two days and then given orally. The patient was afebrile on the second day and out of the tent on the third. He remained so until the fifth day when he became irritable and pyrexial with a few meningeal signs. A lumbar puncture produced a slightly cloudy fluid with leucocytes 810/mm³ (polymorphs 33%, mononuclears 67%), sugar 53 mg/100 ml, protein 140 mg/100 ml, and a growth of *Haemophilus influenzae* type b was obtained. The treatment of the meningitis was begun on the same day with chloramphenicol, sulphadimidine, and penicillin in the standard doses. He responded to the treatment quite satisfactorily and is fully recovered now.

The points we would like to make from this case are that any child with a moderate to severe croup should be treated as for *Haemophilus influenzae* type b infection with adequate doses of parenteral ampicillin or chloramphenicol. Ampicillin, if used, should be given in maximum doses (100–150 mg/kg/day) and parenterally. Once the blood culture becomes positive for *Haemophilus influenzae* type b it is important to change over to chloramphenicol to avoid meningitis.—We are, etc.,

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