than 10 mg. No local analgesic preparation is used. This technique, of course, is not new; moreover, many different combinations of local and general anaesthesia and analgesia are used for this type of endoscopic examination.

The chance of aspiration of pharyngeal contents, either salivary or from the stomach, is always present, irrespective of the technique used, and it is salutary to note that even the use of a cuffed endotracheal tube does not afford complete protection. Dr. S. Mehta¹ has recently described aspiration in 18 out of 90 patients following removal of a cuffed endotracheal tube. He advocated careful placement of the endotracheal cuff just beyond the true vocal cords or the use of a 10° head-down tilt with suction through the endotracheal tube at the end of the operation.

Drs. Prout and Metreweli point out that the aspiration of pharyngeal contents during endoscopic examination of the upper gastrointestinal tract is rarely followed by serious complications. However, if one wished to minimize this aspiration with a technique not using a cuffed endotracheal tube, then probably nasopharyngeal suction during the procedure would be advisable.—I am, etc.,

W. SNIPER

Hairmyres Hospital,
East Kilbride, Glasgow

¹ Mehta, S., *British Journal of Anaesthesia*, 1972, 44, 601.

Delay in Labour

SIR,—With reference to Mr. D. D. Mathews's suggestions in his letter (25 November, p. 487) regarding times to send for medical aid in labour, I wonder whether the second-stage durations are not rather too long.

Apart from maternal or fetal distress the main indication for intervention in the second stage is failure of progression of the presenting part, and I feel it is this fact that should be stressed to pupil midwives and medical students. If the multiparous patient does not deliver within 30 minutes or the primigravida one within 60 minutes, there is usually a cause requiring mechanical assistance. Also, it is unlikely that less than 20 minutes will elapse between a midwife seeking medical help and the subsequent delivery of the baby. Thus in providing a guide, I consider it would be wiser to quote the shorter times.—I am, etc.,

P. M. LEWIS

Department of Obstetrics and Gynaecology,
Royal Free Hospital School of Medicine,
London N.1

Carcinoembryonic Antigen in Urine of Cancer Patients

SIR,—Mr. R. R. Hall and others reported recently (9 September, p. 690) on the demonstration of increased levels of carcinoembryonic antigen (C.E.A.) in the urine of patients with urothelial carcinoma by the radioimmunoassay method. Also, they stated that "C.E.A. does not appear in the urine with most non-urothelial tumours even when the plasma level is raised unless such tumours involve the urothelium secondarily . . ."

We have reported^{1,2} the finding of C.E.A. in the urine of patients with colonic car-

cinoma by means of the immunodiffusion test. Urine specimens collected over 24 hours were dialysed overnight against distilled water in 23 × 32-in (58.5 × 81.3-cm) Visking tubes and lyophilized or concentrated by ultrafiltration through a Diaflo type UM-10 ultrafilter. Perchloric acid extracts were obtained from parts of each urine specimen. Specific antisera were prepared according to the method described previously² and the specimens were also tested against antiserum obtained from Dr. P. Gold's laboratory in Montreal.

Of 18 urine specimens from patients with colo-rectal cancer, two were found to be C.E.A.-positive against our antisera and against antiserum obtained from Dr. Gold. Neither of these two patients was known to have urogenital involvement by his neoplasm. None of 107 urine specimens from other cancer patients and 50 from non-cancer patients and healthy subjects were found to contain C.E.A. by the immunodiffusion test. We feel that the use of a more sensitive technique such as radioimmunoassay will increase the incidence of C.E.A. detected in the urine of cancer patients, especially those with increased C.E.A. levels in plasma.

Further, Mr. Hall and his co-workers suggested that measurement of urinary C.E.A. is of clinical diagnostic value in the detection and follow-up of urothelial carcinomas. Our two patients with positive C.E.A. in the urine were treated with 5-fluorouracil intravenously and both experienced subjective and objective tumour response. On repeating the test for C.E.A. in their urine during tumour regression, none was found by the method used. We suggest that serial follow-up of the plasma and/or urinary level of C.E.A. may aid in the evaluation of tumour responses to therapy.—We are, etc.,

MUHYI AL-SARRAF
KAREL KITHIER

Department of Oncology,
Wayne State University
Detroit, Michigan, U.S.A.

¹ Kithier, K., Al-Sarraf, M., Cejka, J., and Vaitkevicius, V. K., *Proceedings American Association for Cancer Research*, 1972, 13, 66.

² Kithier, K., Al-Sarraf, M., and Cejka, J., *Proceedings Second Conference and Workshop on Embryonic and Fetal Antigens in Cancer*, In press.

Methylcellulose in Diverticular Disease

SIR,—In his paper on the effects of methylcellulose on intracolonic pressures in diverticulosis (23 September, p. 729) Mr. John Hodgson showed that in the cases he studied a manufactured bulk-former lowered these pressures and was helpful clinically. While his experience supports the view that a high-residue diet will lessen the pressures of the colon and relieve symptoms, it is a pity that he studied cellulose in preference to unprocessed bran.

Admittedly it is safe, by and large, to maintain patients on methylcellulose, but it must not be forgotten that only last year attention was drawn¹ to the fact that "hydrophylic colloid purgatives have very occasionally caused bolus obstruction," cases reported in 1965 by Souter² being cited. There have been other reports of faecal obstruction after the administration of either bran or granules made from natural unprocessed gum.—e.g., sterculia. This is probably due to their tendency to remain particulate when

wet, whereas other bulk-formers may clump and cause obstruction.³

It would be a pity if Mr. Hodgson's study, albeit unintentionally, persuaded clinicians that methylcellulose was the "drug of choice" in the treatment of diverticular disease. Unprocessed bran is the most natural, safest, and cheapest material available and, now that finely ground bran is on the market, most patients can take it without difficulty. However, a few will not tolerate bran and these should be given the safest alternative, which is sterculia.

A. Z. ALMEIDA

Manor House Hospital,
London N.W.11

¹ *Lancet*, 1971, 2, 253.

² Souter, W. A., *British Medical Journal*, 1965, 1, 166.

³ Painter, N. S., *Lancet*, 1971, 2, 381.

Use of Surgical Beds

SIR,—We are all aware that there are marked discrepancies in the waiting times for surgical beds in various parts of the country and that in some areas patients may have to be signed off as unfit for weeks, months, or even years before simple matters such as hernias, gall bladders, or haemorrhoids can be attended to. At the same time, owing to the shift of population from Central London, there are, to my knowledge, hospitals in London which, though busy, can arrange an outpatient's surgical appointment within a week of request and the patient, if his condition is of any urgency, can be admitted within the next two or three weeks.

Some enterprising general practitioners have taken advantage of this situation, and it would seem that if some central national information bureau could be established where comparative waiting times could be listed this might be a help to both practitioner and patient alike.—I am, etc.,

J. H. L. FERGUSON

London, N.W.1

Radioactive Bromide Partition Test in Tuberculous Meningitis

SIR,—Our two patients who were included in the series reported by Dr. B. K. Mandal and his colleagues (18 November, p. 413) offer a striking illustration of the diagnostic value of the radioactive bromide partition test. The patients were immigrants and were man and wife. A diagnosis of tuberculous meningitis was established in the husband and when the wife was admitted some three months later, also with a lymphatic meningeal reaction, the same diagnosis was naturally suspected. The partition test, however, showed the meningitis to be of viral origin, and the measles antibody titre later rose from 1/640 to 1/2,560. The partition test thus served to refute what had at first appeared to be a promising clinical lead.—We are, etc.,

J. SHAFAR
D. HOLLANDERS

Burnley General Hospital,
Burnley, Lancs

Insulin Abuse by a Drug Addict

SIR,—With the increasing frequency of drug addiction, doctors are often faced with serious clinical problems, occasionally diagnostic, particularly when the history of addic-

tion may be misleading. I wish to report the case of a known drug addict who presented with unusual clinical features.

A man aged 19 returned home one evening at 9 p.m., when he appeared confused and had a staggering gait. At 10 p.m. he started shaking violently and was noticed to be foaming at the mouth. He had two further similar attacks. In between these episodes he remained confused. When seen by his doctor in the early hours of the morning he was found unconscious in bed, trembling, and with widely dilated pupils. His blood pressure was 140/80 mm Hg. There was a history of a head injury sustained in a road traffic accident two years previously with no associated loss of consciousness. As the patient was a known drug addict, although not registered as such, a drug overdose—"probably morphine"—was considered likely and he was urgently referred to hospital.

On arrival in the casualty department the patient was semiconscious. He had a stomach washout. Soon afterwards he became unconscious and developed a major epileptic fit for which he was given diazepam 10 mg intravenously. Following this he remained unconscious and, on examination, he was unresponsive to painful stimuli. Injection marks were noted on the left arm. He was perspiring profusely. Blood pressure was 140/90 mm Hg, pulse 80/min regular. There was no meningism. The pupils were constricted. Reflexes were exaggerated bilaterally. There was bilateral ankle clonus. Both plantar responses were extensor.

On the evidence of the epileptic fits, the profuse perspiration and extensor plantar response, hypoglycaemic coma was diagnosed. The serum salicylate level was reported as nil, serum sodium 132 mEq/l., potassium 2.8 mEq/l., chloride 108 mEq/l. The blood sugar level was 30 mg/100 ml. Fifty millilitres of 50% dextrose was injected intravenously. There was no immediate response, but 10 minutes later the patient suddenly regained consciousness. He admitted that 10 hours before admission he had injected himself intravenously with 2 ml of insulin of unknown strength and type to "give himself a kick." He had obtained the insulin from a diabetic friend. This was his second experience with the drug. He had made use of heroin and other drugs in the past.

Altered colour vision and visual, auditory, and olfactory hallucinations are rare symptoms of hypoglycaemia.¹⁻⁵ Insulin, however, is not commonly known to be used by drug addicts for hallucinatory purpose. It has not been possible to find reports in the literature of similar insulin abuse and it would be interesting to know if other cases have been encountered. It is suggested that hypoglycaemic coma in deeply comatose drug addicts as a result of insulin overdose should be considered in the differential diagnosis.

I wish to thank Dr. F. M. McGowan for his permission to report this case.
—I am, etc

S. RETSAS

Oldchurch Hospital,
Romford, Essex

- 1 Cooke, A. M., *Lancet*, 1934, 2, 1274.
- 2 Goodman, J. I., *Metabolism*, 1953, 2, 485.
- 3 Maddock, R. K., and Krall, L. P., *Archives of Internal Medicine*, 1953, 91, 695.
- 4 Malins, J., *Clinical Diabetes Mellitus*, p. 433, London, Eyre and Spottiswoode, 1968.
- 5 Wauchope, G. M., *Quarterly Journal of Medicine*, 1933, 26, 117.

Adhesive Patches for Theatre Linen

SIR,—Our Area Linen Service, once known as the hospital laundry, has taken to mending theatre and possibly other linen by putting on an adhesive fabric patch, similar to the "iron-on" patches available for home use. These can be loosened during laundering and sterilization, and could easily find

their way into a wound, where they would be unsuspected and undetectable. I am glad to say that when I discussed this with those concerned they were most helpful and undertook to stop this practice, the potential dangers of which had not been appreciated.

I am reporting this as I understand that other hospital laundries may be using this method. If such a patch were discovered, say at a second laparotomy, the resulting litigation could be salutary.—I am, etc.,

J. W. DICKSON

Ipswich and East Suffolk Hospital,
Ipswich

Thymectomy for Myasthenia Gravis

SIR,—In your leading article (2 September, p. 543) you mention the occurrence of neonatal myasthenia as evidence for the existence of "a transmissible agent able to cross the placenta and cause the disease in the infant." While this may be the correct interpretation, an alternative one can be suggested.

Babies born to myasthenic mothers may suffer from a transient myasthenia-like syndrome. However, this does not always start immediately after birth but in many cases a few hours later.¹ It is possible that the delay in onset is the result of a passage through the placenta of cholinesterase inhibitor drugs taken by the mother. Almost all cases of neonatal myasthenia occur in babies born to mothers taking these drugs, and recent evidence suggests that they may have a noxious effect on the neuromuscular apparatus.^{2,3} Long-term administration to rats has been shown to produce changes mimicking myasthenia.² A similar effect could perhaps be produced in the human fetus. Possibly some of the histological abnormalities seen in non-neonatal myasthenic muscles also result from medication rather than from the underlying disease.—I am, etc.,

A. D. KORCZYŃ

Beilinson Hospital,
Petah Tikva, Israel

- 1 Namba, T., Brown, S. B., and Grob, D., *Pediatrics*, 1970, 45, 488.
- 2 Engel, A. G., Lambert, E. H., and Santa, T., *Neurology*, (Minneapolis), 1972, 22, 401.
- 3 Fenichel, G. M., Kibler, W. B., Olson, W. H., and Dettbarn, W. D., *Neurology*, (Minneapolis), 1972, 22, 423.

Malaria in Pregnancy

SIR,—At the present time malaria is being imported into the United Kingdom on an increased scale. At least 100 cases are diagnosed annually, and more may occur which are not notified under the Malaria and Dysentery Regulations (1919). Diagnosis may be dangerously delayed by language difficulties. Further difficulties may arise when a relapse of malaria is associated with pregnancy, as in the following case.

A woman of Asian extraction was admitted to hospital on 15 August 1972. Her doctor wrote "... temperature tonight 105°F, arrived from India two weeks ago. ? Malaria." The history was obtained through an interpreter.

The patient complained of vomiting, severe generalized headache, and fever for three days. She was pregnant, expecting her third baby on 27 October. For the past year she had had episodes of fever, but malaria had been excluded.

On admission the patient was feverish but not desperately ill, with a temperature of 106°F, (41.1°C), pulse 128/min, respirations 38/min,

and blood pressure 70/40 mm Hg. Neck stiffness was minimal. The spleen was not palpably enlarged. The fundus uteri corresponded to the period of amenorrhoea.

Initially, subarachnoid haemorrhage was suspected because of blood in the cerebrospinal fluid but later this was shown to be due to contamination. Pyelonephritis was considered despite the absence of loin tenderness. A blood film, however, showed *Plasmodium vivax*.

Treatment with oral chloroquine, 600 mg as a loading dose then 300 mg daily for four days, was followed by primaquine 15 mg daily for two weeks. The fever, seen to be classically tertian, soon settled. Later, an x-ray revealed the presence of twins. At no time did anaemia occur; the haemoglobin at 38 weeks' gestation was 11.5 g/100 ml. The twins were delivered vaginally at the 39th week. Both babies thrived and there was no evidence of neonatal malaria.

Obstetricians will do well to recall that malaria can occur in any pregnant woman who has been out of the United Kingdom.^{1,2} Pregnancy may lead to a relapse of vivax infection, which can occur up to two years after the initial attack. High fever, especially if tertian, in a pregnant Asian should suggest the diagnosis, which can be confirmed by examination of a suitable blood film. Vivax infection may mimic pyelonephritis of pregnancy and bacteraemic shock, while the fever may cause fetal death or precipitate premature labour. Falciparum infection in pregnancy may cause acute renal failure and in its cerebral form may mimic eclampsia by causing coma; early recognition is essential to save life.

Relapses of vivax infection respond quickly to treatment, preventing premature labour, even, as shown above, in multiple pregnancy. The fetus is not affected by antimalarial drugs apart from quinine, which may cause fetal death. Chloroquine can cause abdominal discomfort and vomiting, while primaquine, when taken daily to prevent a relapse of vivax infection, may lead to haemolytic anaemia if the red cells are deficient in glucose-6 phosphate dehydrogenase.

Congenital malaria is known, but the incidence is very low, probably less than 0.1%.³ If patients in a malarious area took proguanil daily and for four weeks after entering the United Kingdom, relapses of malaria would be entirely prevented.

I would like to thank Dr. V. W. Johnson, under whose care this patient was diagnosed, treated, and cured, for permission to use his clinical records and Dr. W. S. A. Allan, consultant pathologist, for his opinion and advice.—I am, etc.,

ALAN M. SMITH

New Cross Hospital,
Wolverhampton

- 1 Barnes, C. G., *Medical Disorders in Obstetric Practice*, 3rd edn., Oxford, Blackwell, 1970.
- 2 Shute, P. G., and Maryon, M., *British Medical Journal*, 1969, 2, 781.
- 3 Bruce-Chwatt, L. J., *British Medical Journal*, 1970, 3, 283.

Malaria Mortality in Children

SIR,—Your issue of 14 October 1972 has reached me today (7 December). (This is a good example of "modern" postal facilities.) On p. 112 it is stated that Sagnet *et al.*¹ reported a death rate of 47% from the Congo among children under 3 years of age from malaria. I agree with Dr. M. J. Colbourne that a death rate of this sort is hard to believe. Did these children have malaria and nothing else? My own experi-