Splenectomy and Susceptibility to Malaria and Babesia Infection

SIR,—The article by Dr. A. S. D. Spiers and others (25 January, p. 175) calls for special consideration concerning susceptibility to malaria and infection with some species of *babesia* in patients who have undergone splenectomy for haematological disorders.

Research work on apes and monkeys has shown that when these animals have acquired immunity to malaria they can be reinfected with the same strain of the same species of parasite if, before reinfection, the spleen is removed. It has also been proved beyond all doubt that some species of apes (chimpanzees), which normally are resistant to human *Plasmodium vivax* infections, develop severe parasitaemia if, before infection, the spleen is removed. Humans who have had their spleens removed should, if possible, avoid going to endemic malarious areas, especially areas where *P. falciparum* is prevalent. Few if any splenectomized Caucasians would survive for more than two weeks if infected with *P. falciparum* and not given antimalarial drugs within a few days of infection.

There have been fatal cases of *babesia* infection in nature among humans who have been splenectomized, in both Europe and North America. As far as is known only one case (fatal) has occurred in the U.K. A few years ago an inshore fisherman who had lost his spleen developed fever while on holiday. On admission to hospital his blood was examined and numerous erythrocytic parasites were found which were diagnosed as *P. falciparum*. Antimalarial drugs were given but the patient did not respond and died. Blood films were sent to the Malaria Reference Laboratory, at Horton Hospital, Epsom, where it was recognized that the parasites were not malaria. When the films were shown to Professor P. C. C. Garnham he diagnosed *Babesia divergens*.^{1 2} The parasites of this species of *babesia* so closely resemble *P. falciparum* that it takes an expert to distinguish one from the other.

Babesia infection (known to farmers as red water fever) among cattle is common in many parts of the U.K.; in one part of east Devon a farmer informed me that all his cattle sooner or later became infected. It therefore behaves farm workers, veterinary surgeons, and others who have had their spleens removed to avoid being bitten by ticks. It would certainly be inadvisable for people from the U.K. who have undergone splenectomy to go for holidays in tropical Africa.—I am, etc.,

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¹ Garnham, P. C. C., et al., *British Medical Journal*, 1969, 4, 768.

² Shute, P. G., and Maryon, M., *Laboratory Technique for the Study of Malaria*. London, Churchill, 1966.

Surgery in Rhodesia

SIR,—One cannot help but conclude that Professor L. F. Levy's Personal View (18 January, p. 147) is resigned to two standards of surgical management (in whichever hospital he is working in Rhodesia)—one for the affluent and the other for the rural Africans. If that be the case what he calls exotic treatment, which is also expensive, is almost all reserved for the 300 000

Europeans who happen to be the affluent members of society and make up only 5% of the population.

Just because the rural Africans cannot afford to travel long distances for follow-up is no justification for offering them second-grade surgical procedures almost doomed to fail. One would have thought that, rather than maintain the status quo, measures should be taken to encourage and assist the rural population to attend follow-up sessions after complicated and costly operative procedures.—I am, etc.,

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Inhibition of Prostaglandin Biosynthesis by Analgesics in Relation to Asthma

SIR,—The demonstration by Dr. A. Szczeklik and his colleagues of the in-vitro inhibition of prostaglandin (PG) synthesis by aspirin (11 January, p. 67) is supported by our finding that during asthmatic attacks precipitated by aspirin only trace amounts of PGE and PGF_{2α} are present in the plasma.¹ However, their suggestion that the precipitation of asthmatic attacks in analgesic-sensitive patients is related to each analgesic's ability to inhibit PG synthesis should be accepted with reservation.

Though, in their experience, paracetamol did not inhibit PG synthesis it is capable nevertheless of producing asthmatic attacks. Smith² observed marked falls in the FEV₁ in five aspirin-sensitive subjects exposed to paracetamol. Similarly the increased airways obstruction observed in 13 aspirin-sensitive patients after I had challenged them with 1 g of paracetamol is shown in the table.

Patient No.	FEV%	
	Before Challenge	After Challenge
1	59	49
2	84	69
3	63	45
4	70	52
5	76	52
6	51	33
7	61	49
8	91	77
9	49	39
10	91	73
11	41	34
12	63	55
13	81	64

It should be emphasized once more that patients with aspirin idiosyncrasy need to treat all analgesics with caution.—I am, etc.,

J. C. DELANEY

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¹ Delaney, J. C., Smith, J. B., and Silver, M. J., *Postgraduate Medical Journal*, 1975, 51, 15.

² Smith, A. P., *British Medical Journal*, 1971, 2, 494.

Patient-satisfaction in General Practice

SIR,—The survey of patient-satisfaction carried out by Mr. P. R. Kaim-Caudle and Dr. G. N. Marsh in a Teesside practice of 3100 patients (1 February, p. 262) is a good example of how emphasizing certain aspects of statistical results can give rise to a misleading picture.

The authors are pleased at the high level of satisfaction shown in this practice, where half the visiting is done by the practice

nurse. Approximately one-sixth of the adult practice population were interviewed by a non-medical research team and 92% were either "very satisfied" or "satisfied" with the treatment they received from their doctor. However, one patient was "very dissatisfied," five were "dissatisfied," and 20 had "mixed feelings." If the sample is typical of the whole practice population this means that at least 30-40 adult patients are dissatisfied and between 100 and 150 more have mixed feelings about the treatment they receive from their doctor. Many general practitioners would be absolutely horrified if they knew that such a large number of their patients had such reservations about their treatment.

I do not think that this survey has helped to prove the authors' theory that the average list of 2400 patients is too small, and I await with interest the results of a similar survey in a practice with a list of 2000 patients where the doctor does his own visiting.—I am, etc.,

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Lithium Poisoning Precipitated by Diuretics

SIR,—The toxic effects of high serum lithium levels are well known, but their precipitation by diuretic medication, while recognized, is probably not so widely appreciated. The following short history illustrates the dangers of prescribing diuretics to patients taking lithium without careful alteration of dosage requirements.

The patient was a 66-year-old man with a past history of severe manic depressive psychosis dating back to 1960. He had been well controlled on lithium carbonate since 1972 and the serum level had been steady on regular estimations.

In August 1974 he was started on Moduretic (amilofide hydrochloride 5 mg + hydrochlorothiazide 50 mg) because of left ventricular failure associated with hypertension and E.C.G. evidence of myocardial ischaemia. One week later he was referred to this hospital urgently because of unsteadiness on his feet, slurred speech, and shaking of the upper limbs which had become progressively more severe since taking the diuretic. There was no vertigo, diplopia, or tinnitus but he complained of general malaise, anorexia, nausea, and diarrhoea over the previous 5 days. There was a complex coarse tremor with gross movement of the upper limbs, a mixed peripheral tremor involving individual digits, and occasional flapping elements. There were no other abnormal findings on further neurological examination. His serum lithium level was found to be 2.4 mmol (mEq)/l.

All medication was discontinued but two days later there was no clinical change. Four days after that there was a considerable improvement, but return to normal function was slow, and seven weeks after his deterioration there was still slight evidence of slurred speech, tremor, and ataxia.

The major points which should perhaps be stressed in this history are the rapidity of onset of the symptoms, the slow return to normal function, and the present problems related to persuading the patient to recommence a drug which he rightly believes could have killed him.—I am, etc.,

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Amitriptyline and Imipramine Poisoning in Children

SIR,—Drs. D. A. Price and R. J. Postlethwaite (23 March, p. 575; 1 June, p. 504) have recommended the use of parenteral diphenylhydantoin in preventing and con-

trolling convulsions due to tricyclic antidepressant poisoning. This suggestion was made on the basis of the beneficial use of this drug "in two children and two young adults poisoned with amitriptyline." The effectiveness of diphenylhydantoin in this situation has never been clearly substantiated either in the laboratory or in clinical practice.

Recently we have been investigating the effectiveness and safety of various anticonvulsants in the prophylaxis of imipramine-induced convulsions in rats. We found that diphenylhydantoin in intraperitoneal doses ranging from 5 to 200 mg/kg failed to prevent convulsions brought about by intraperitoneal administration of imipramine 112 mg/kg. This was in contrast to the high anticonvulsant effectiveness of diazepam or phenobarbital in similar experiments.

This observed ineffectiveness of diphenylhydantoin in controlling imipramine seizures in rats is not surprising, since an important factor in the use of this drug as an "anti-convulsant" is the aetiology of the convulsions. For example, diphenylhydantoin does not control febrile convulsions in children under 3 years of age¹ nor is it effective in the treatment of seizures associated with barbiturate withdrawal.² Moreover, diphenylhydantoin does not raise the threshold to minimal electroshock seizure or prevent pentylenetetrazol-induced convulsions.³ Our experiments suggest that diphenylhydantoin may not have any value as an anticonvulsant in the therapy of tricyclic antidepressant poisoning. However, this does not exclude the possibility that diphenylhydantoin may have a use in controlling the cardiac arrhythmias associated with tricyclic antidepressant overdose.—We are, etc.,

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- 1 Melchior, J. C., Buchthal, F., and Lennox-Buchthal, M., *Epilepsia*, 1971, 12, 55.
- 2 Essig, C. F., *Epilepsia*, 1967, 8, 21.
- 3 Toman, J. E. P., in *The Pharmacological Basis of Therapeutics*, ed. L. S. Goodman and A. Gilman, 4th edn., p. 208. New York, Macmillan, 1970.

Mycoplasma Pneumonia with Inappropriate Secretion of Antidiuretic Hormone

SIR,—We were interested to read the report by Drs. A. Spanos and C. J. Spry (28 September, p. 785) of inappropriate secretion of antidiuretic hormone (ADH) in a patient with chronic bronchitis. We describe here the same phenomenon in a child with bronchopneumonia due to *Mycoplasma pneumoniae*.

A 6-year-old boy was admitted with a five-day history of a febrile illness associated with headache, anorexia, abdominal pain, and a harsh unproductive cough. He had been treated at home with ampicillin for 24 h. On admission he had a temperature of 39°C and a harsh cough. A few crepitations were heard at both lung bases and the chest x-ray showed consolidation in both lower lobes. The haemoglobin was 13 g/dl, W.B.C. $5.8 \times 10^9/l$ (5800/mm³), and E.S.R. 12 mm in 1 h. The complement fixation test for mycoplasma was negative at first but the titre rose to 1/1024 after four weeks.

Ampicillin was continued intramuscularly but had to be withdrawn after two days when the patient developed a generalized urticarial rash. Cephalixin was substituted but in spite of this his fever persisted for eight days after admission. On the fifth hospital day he was noticed to be drowsy and irritable with a poor fluid intake. His serum electrolytes and blood urea were: sodium 125 mmol (mEq)/l, potassium 2.8 mmol (mEq)/l, chloride 88 mmol (mEq)/l, bicarbonate 28 mmol (mEq)/l, and urea 3.7 mmol/l (22 mg/100 ml). The plasma osmolality was 265 mmol (mOsm)/kg and the urine osmolality was 613 mmol (mOsm)/kg. Unfortunately ADH measurements were not available.

His fluid intake was restricted to 500 ml daily and on this his condition gradually improved. The serum electrolytes returned to normal within 72 h, as did the osmolality of his serum and urine. His pneumonia appeared to resolve spontaneously after 10 days and his chest x-ray was completely clear two weeks later.

Inappropriate secretion of ADH has been described in association with both acute and chronic chest infection in adults^{1,2} but we believe this to be the first report of its occurrence in association with *Myc. pneumoniae* infection or in a child with acute pneumonia. The source of ADH in these patients is unknown; tumours of the lung may produce the hormone, as may tuberculous lung tissue,³ and it has been suggested that hypoxia and low cardiac output may act as a stimulus to ADH production.⁴

It is also possible that excessive ADH secretion is a non-specific response to stress,⁵ and it would be of interest to investigate this possibility in patients subjected to other forms of stress such as major injury or surgery.—We are, etc.,

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Department of Child Health,
University Hospital of Wales,
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- 1 Rosenow, E. C., Segar, W. E., and Zehr, J. E., *Mayo Clinic Proceedings*, 1972, 47, 169.
- 2 Spanos, A., and Spry, C. J., *British Medical Journal*, 1974, 3, 785.
- 3 Vorherr, H., et al., *Annals of Internal Medicine*, 1970, 72, 383.
- 4 Henry, J. P., Gaurer, O. H., and Reeves, J. L., *Circulation Research*, 1956, 4, 85.
- 5 Myers, J. B., *British Medical Journal*, 1974, 4, 345.

Fatality after Fine-needle Aspiration Biopsy of Liver

SIR,—Fine-needle aspiration biopsy of the liver is considered a safe procedure. Overt haemorrhagic diathesis is considered the only absolute contraindication.¹ Open liver biopsy, on the other hand, is associated with a definite risk. We wish to report a case of death after a fine-needle aspiration biopsy.

A 62-year-old man, who had had a portocaval end-to-side shunt operation and splenectomy in 1973 for cryptogenic liver cirrhosis associated with bleeding oesophageal varices, splenomegaly, and

thrombocytopenia, was admitted to hospital in September 1974 with impending hepatic coma. His blood ammonia was 165 $\mu\text{mol/l}$ (231 $\mu\text{g}/100\text{ ml}$) (normal range 28–64 $\mu\text{mol/l}$) and total serum bilirubin 213 $\mu\text{mol/l}$ (12.5 mg/100 ml) (normal range 5–20 $\mu\text{mol/l}$). About 90% of the bilirubin was conjugated. The coarse nodularity of the liver edge, palpable some 5 cm below the costal margin, seemed to increase during the patient's stay in hospital. An uneven uptake of labelled isotope on liver scanning was compatible with cirrhosis but did not exclude malignancy. Alpha-fetoprotein was not present. Bleeding and coagulation times were normal, thrombocytes were $112 \times 10^9/l$, and the Thrombotest value 31%. Because of suspected malignancy a fine-needle aspiration biopsy of the liver was performed with a 0.7 × 100 mm needle by a person familiar with the procedure. A subcostal approach was used. The patient experienced no untoward symptoms. A diagnosis of hepatocellular carcinoma was established from the aspirate. Eight hours after the aspiration signs of shock developed and intra-abdominal bleeding was diagnosed. Despite treatment the patient died two days later. At necropsy the abdomen contained about a litre of blood. The biopsy needle had passed through a necrotic tumour about 5 cm in diameter and had emerged on the dorsal aspect of the liver surface. Blood clots covered both the entrance and exit sites of the needle in the liver. There were no signs of haemorrhage from neighbouring structures. The liver was severely cirrhotic and contained many cancerous areas.

Fine-needle aspiration biopsy of the liver has been considered virtually risk-free. In this patient with liver cirrhosis associated with a primary hepatoma, however, the procedure, though correctly executed, led to gross intra-abdominal haemorrhage and, in conjunction with other factors, to the death of the patient.—We are, etc.,

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- 1 Söderström, N., in *Fine-needle Aspiration Biopsy*. New York, Grune and Stratton, 1965.

Abortion Service

SIR,—I am not concerned to defend or attack the book reviewed under the above heading (8 February, p. 340). But your reviewers should not be allowed to get away with the suggestion plainly implicit in their final paragraph that those who argue from a moral point of view against abortion have no compassionate view of the circumstances of the mother. It is quite untrue. A very considerable number of people do, however, consider that the fetus has rights to life and that at the least the Abortion Act should be tightened so that those rights are not overridden without very serious consideration. And Parliament has taken note of that feeling.—I am, etc.,

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Owen Working Party

SIR,—The B.M.A.'s account of the proceedings in the Owen Working Party (4 January, p. 48) and of subsequent events has not answered all the questions the thoughtful doctor would like to ask. I am therefore writing on behalf of the executive committee of the Association of University Clinical Academic Staff to clarify certain points. Our information on proceedings of the Owen Working Party is derived from discussions with eight of its members.

At the final meeting of the Owen Working Party on 20 December, our negotiators

responded with heat to Mrs. Castle's chairmanship. She had introduced the Department of Health and Social Security's proposals on a new consultant contract by saying that they had been prepared at short notice, under pressure from the profession, and she wanted our negotiators to take them away for further discussion with their colleagues. Our negotiators became upset. At one stage they asked if the proposals represented a "take it or leave it" offer and were told that the principles were not negotiable, though the details were. Exchanges became