Some may argue that even 50% acceptance rates would produce a better result than selective vaccination. The latter, it is argued, will result in an increased incidence of the disease and therefore a larger number of complications; respiratory complications are today seldom a major problem except in damaged children, but the rarer encephalitis is. Perhaps our muddled approach is really a compromise between the two British alternatives; my view is that selection would allow as good results as laissez faire at much less cost to the community.

HILLAS SMITH

Coppetts Wood Hospital,
Royal Free Hospital,
London N10 1JN

## Open-access endoscopy

SIR,—I was interested to see the report of Mr M W L Gear and others (3 May, p 1135) on open access endoscopy but feel that their optimistic conclusions are not justified.

In our paper (17 February 1979, p 457) we concluded that the introduction of the service led to an increasing number of investigations but that the number of gastric carcinomas and ulcers remained the same (instead of decreasing as claimed in their paper). In other words, these patients were already being referred. We also showed that the majority of additional patients were young dyspeptics in whom it is well known that serious pathology is uncommon. We have since shown that the increasing number of endoscopies did not result in a more rapid diagnosis of patients with gastric cancers (paper presented to the British Society of Gastroenterology, spring 1980).

Mr Gear has shown a slightly higher pick-up rate than ourselves at 20%. Our rate fell from 25% at the start to 13% after three years, but they have so far only looked at a two-year period and they may well be showing the same dilutional effect. They have shown that the service is easy to run and popular with doctors, but this is not enough. Unless they can provide evidence that they are either diagnosing patients earlier or picking up patients who otherwise were missed, they have provided no fresh evidence of the value of such a service.

I note recent reports suggesting that we are already investigating too many patients with dyspepsia.[1 2] GP open-access endoscopy invariably leads to an increase in the numbers being performed and we must be very sure of the benefit of such a service before its general introduction, especially in view of today's economies.

G E HOLDSTOCK

Professorial Medical Unit,
Southampton General Hospital,
Southampton SO9 4XY

[1] Marton KI, Sox HC, jun, Wasson J, Duisenberg CE. *Arch Intern Med* 1980;**140**:191-5.
[2] Anonymous. *Lancet* 1980;i:1171-2.

## Pyogenic liver abscess

SIR,—Your leading article (10 May, p 1155) on pyogenic liver abscess advised the use of "appropriate antibiotics" at the time of drainage, but failed to name a single microbe or its antimicrobial susceptibility. Although we admire this clearly surgical approach, admitting to a certain bacteriological bias we would suggest that careful bacteriological investigation of pus from liver abscesses is of clinical importance.

Theoretically, any of the gut commensal bacteria might be found in liver abscesses but recent experience has shown a definite preponderance of the microaerophilic *Streptococcus milleri*, usually Lancefield group F in this infection.[1 2] This organism, which the inexperienced may readily mistake for an anaerobe, was cultured from 11 of 13 pyogenic liver abscesses seen in the past 10 years at St Thomas's and in nine of the 11 cases it was the sole pathogen. In the other two cases a single anaerobe was also isolated (*Peptococcus* sp, *Fusobacterium necrophorum*). Much of the surgical literature stresses the importance of *Escherichia coli* in liver abscess and pays little attention to either *Strep milleri* or anaerobes: as recently as 1976, a leading article in the *Lancet*[3] stated that the commonest organisms were *E coli* and *Strep faecalis* but "bacteroides and anaerobic streptococci should not be forgotten." *E coli* was isolated from only one of our 13 abscesses and anaerobes (*Peptostreptococcus* sp and *F nucleatum*) were also present. *Strep faecalis* was never isolated. All the organisms that we have isolated, with the exception of the single *E coli*, have been sensitive to penicillin and this is the antibiotic of choice. It should be given with other antibiotics only when these are indicated by sensitivity tests or in the initial treatment of a very sick patient.

Adequate drainage remains the essential prerequisite for successful management of any pyogenic liver abscess but identification of the pathogen and determination of its antimicrobial susceptibility is also important. We would make a plea for more co-operation between surgeons and microbiologists so that *pus*, rather than a swab, is submitted to the laboratory for appropriate investigation. Within half an hour of the receipt of such a specimen it is usually possible to determine the pathogen from the smell of the specimen, the results of the Gram stain, and gas-liquid chromatography if available. The aetiology can sometimes be established by needle aspiration before definitive drainage is performed, or predicted by the isolation of the pathogen from a blood culture. Treatment with broad-spectrum antibiotic cocktails such as the one mentioned in your article need seldom be given and such blunderbuss polypharmacy should certainly not be continued for "several weeks." We would add that 12 of our 13 patients survived following drainage and chemotherapy appropriate for their pathogens. The patient who died had severe diabetes and developed a subsequent subphrenic abscess.

SUSANNAH EYKYN
IAN PHILLIPS

Department of Microbiology,
St Thomas's Hospital,
London SE1 7EH

[1] Bateman NT, Eykyn SJ, Phillips I. *Lancet* 1975;i:657-9.
[2] Reid TMS, Davidson AI. *Lancet* 1976;i:648-9.
[3] Anonymous. *Lancet* 1976;i:1170-1.

SIR,—Your leading article "Pyogenic liver abscess" (10 May, p 1155) discussed certain changing aspects of the disease. A recent case in this hospital (to be published) highlighted some features of this difficult diagnostic and therapeutic problem.

Isolation of *Streptococcus milleri* from blood culture taken from a 59-year-old male patient was the first clue to the diagnosis of liver abscess. The association of this organism with purulent lesions in internal organs is becoming increasingly recognised.[1 2] Subsequent computer-assisted axial tomography showed defects compatible with multiple hepatic abscesses. Antibiotic treatment, without aspiration or drainage, led to resolution of the hepatic lesions (monitored by serial computed tomography) and the patient remains symptom free 18 months after cessation of all treatment.

Maher *et al*[3] recently reported successful medical treatment of pyogenic liver abscesses in six patients (although follow-up beyond four months is not reported in four cases). The prognosis for the patient with multiple abscesses remains poor despite open exploration and drainage.[4] Computed tomography was invaluable in the diagnosis and management in our case. Percutaneous needle aspiration of abscess cavities, accurately located by computed tomography, offers a potentially important method of treatment of the solitary abscess,[5] and a valuable method of obtaining pus for the isolation and sensitivity testing of the causal bacteria in all patients, including those with multiple abscesses. Adequate anaerobic culture methods must be employed. Intensive, specific antibiotic therapy, monitored by serial computed tomography, offers an alternative approach in the management of some cases.

In general terms, the value of blood cultures in the investigation of the undiagnosed problem patient should not be overlooked. Full identification of all isolates may yield valuable information, as in our case.

PETER A WRIGHT
JOHN RICHARDS

Departments of Bacteriology and Surgery,
Royal Infirmary,
Glasgow G4 0SF

[1] Parker MT, Ball LC. *J Med Microbiol* 1976;**9**:275-302.
[2] Bateman NT, Eykyn SJ, Phillips I. *Lancet* 1975;i:657-9.
[3] Maher JA, Reynolds TB, Yellin AE. *Gastroenterology* 1979;**77**:618-22.
[4] Pitt HA, Zuidema GD. *Surg Gynaecol Obstet* 1975;**140**:228-34.
[5] Silver S, Weinetein A, Cooperman A. *Am J Surg* 1979;**137**:608-10.

## The liver and halothane—again

SIR,—In your leading article (17 May, p 1197) "The liver and halothane—again" you suggest that for repeat anaesthetics the inhalational agent of choice is enflurane. Enflurane is excreted through the lungs, as are most inhalational anaesthetics, and less than 3% is metabolised to inorganic fluoride.[1] The rapid elimination of the drug reduces the time available for metabolism and thus the peak fluoride level is normally less than 25 μm/l,[2 3] which is approximately half the concentration likely to cause renal damage.[4 5] One cause of raised serum inorganic fluoride might be its increased production as a result of hepatic microsomal enzyme induction by drugs.[2 3] Enflurane itself has been shown to induce hepatic enzymes,[6] so that previous exposure to enflurane might lead to an increased production of inorganic fluoride.

Eichhorn *et al*[7] report a case of renal failure following six hours of anaesthesia in a patient who had been exposed to enflurane six weeks previously, and this may have been due to enzyme induction that increased the free fluoride level. Thus it would seem advisable to avoid enflurane in patients who have impaired glomerular function or who have