attributed in each case to iodide released from the contrast medium. Hyperthyroidism is a common disorder and radiological examination of the gall bladder is a frequently performed investigation. Although symptoms were first noted by each patient shortly after cholecystography there is no certainty that their thyroid function was normal beforehand. A causal relationship between the administration of iodide and the development of hyperthyroidism could be inferred if supported by subsequent investigation, by the course of the disorder, and by the response to therapy. The clinical accounts, however, undermine the inference in each case.

In four cases of iodide-induced hyperthyroidism described by Nilsson¹ the 2-h ¹³¹I uptake was less than 8%, and in a further four cases which we have investigated the 4-h uptake was below 12%. A 2-h uptake of 52%, as occurred in the first patient described by Drs Fairhurst and Naqvi, suggests that little if any iodide was liberated from the contrast medium and therefore that the onset of hyperthyroidism was coincidental.

The rapid clinical response of both patients to antithyroid drugs is further evidence that their condition was unrelated to their radiographic examination. The hyperthyroidism induced by iodide is sustained by the continuing release of preformed thyroid hormone and not, as is more usual, by the rapid recycling of a limited amount of iodide. In the latter situation antithyroid drugs prevent the recycling process and readily control the condition by blocking the uptake and reuse of iodide released by peripheral deiodination of thyroxine. In iodide-induced hyperthyroidism, in contrast, we have found that the response to drugs is slow; once the serum thyroid hormone concentrations have returned to normal, however, the drugs may be stopped and the patients, unlike Drs Fairhurst and Naqvi's second patient, do not relapse. We would agree with Nilsson that iodide-induced hyperthyroidism, when it occurs in patients who have not had a diet deficient in iodine, is generally a mild, self-limiting condition which requires neither surgery nor treatment with radioiodine.

Although we do not think that the two cases described by Drs Fairhurst and Naqvi are examples of iodide-induced hyperthyroidism, we do believe that this condition is more common in Britain than is supposed. For example, we found² that three out of 29 elderly euthyroid patients given potassium iodide during ¹²⁵I-fibrinogen tests developed biochemical hyperthyroidism. Often in practice the source of the iodide cannot be discovered. The condition can then be surely diagnosed only when hyperthyroid biochemistry is associated with a characteristic mode of handling of radioiodine (a low neck uptake, high urinary excretion, and a low plasma total radioactivity with a large inorganic component).

R L HIMSWORTH
MONICA FISHER
M J DENHAM

Clinical Research Centre,
Division of Clinical Investigation,
Harrow, Middlesex

¹ Nilsson, G, *Acta Endocrinologica*, 1973, 74, 475.

² Denham, M J, and Himsworth, R L, *Age and Ageing*, 1974, 3, 221.

Superficial thrombophlebitis

SIR,—The paper by Dr P P Mehta and others (13 September, p 614) shows that heparinoid cream increases the resolution of signs and symptoms of superficial thrombophlebitis developing after continuous intravenous infusion. It also shows that 68 patients had infusions in situ for three days or more. No wonder the authors were able to collect 100 patients with "infusion arms."

Superficial thrombophlebitis developing after intravenous infusion is largely preventable by ensuring that infusions are taken down each night. This is more physiological than running them continuously for 24 hours, relieves night nurses of the particularly difficult task of keeping to infusion schedules in a dark ward, and enables the patients to have a less disturbed night's sleep. Such a policy does require the housemen to insert intravenous cannulae each morning, but as the infusions last no more than 16 hours small needles can be used. These can be put into small veins with relative ease, and blood can be taken through them for analysis before setting up the infusion. In addition it obviates the need to disturb the houseman when an infusion stops in the middle of the night. Since this policy was started on the professorial surgical unit at Guy's three years ago "infusion arms" have been a rare event, and in each case cannulae have been left in the veins for more than 24 hours at a time.

H G STURZAKER

Guy's Hospital,
London SE1

An aetiological agent in Whipple's disease?

SIR,—I read with interest the article by Dr R L Clancy and others (6 September, p 568) on the isolation of an aetiological agent from a patient with Whipple's disease. I should like to make two comments.

Firstly, I had difficulty in deciding whether the authors considered the agent to be a cell-wall-deficient (CWD) form of *Streptococcus dysgalactiae* or the bacterium itself. My confusion arose because, on the one hand, jejunal biopsy and lymph node culture materials were considered to contain bacteria as shown by electron microscopy, while on the other hand the authors reported "the isolation of a CWD bacterium from a prolonged lymph node culture with features that strongly suggested that this organism was an aetiological agent." The authors showed the value of using hypertonic medium, but the growth of a CWD form in such medium does not necessarily indicate that it existed in this state in the patient. It cannot be excluded that the streptococcal organisms were in the bacterial form, perhaps in small numbers so that isolation by conventional means was not possible, and that they were converted to the CWD form in vitro by the use of hypertonic medium.

Secondly, even if the isolated streptococcus is the same as that observed in the diseased tissues of the patient, it does not follow that it is necessarily causative. If it is an aetiological agent, then the interesting observations made by the authors are very unlikely to prove unique, even if more than one agent is responsible for causing Whipple's disease. Thus, while in no way decrying the work, I feel that without confirmation it is premature

to consider the isolated streptococcus as a cause of the disease on the basis of observations made on a single case.

D TAYLOR-ROBINSON

Clinical Research Centre,
Harrow, Middlesex

** We showed this letter to Dr Clancy and his colleagues, whose reply is printed below.—Ed, *BMJ*.

SIR,—Two points are made by Dr Taylor-Robinson and are well taken.

Firstly, the nature of the isolated organism. The organism was isolated only under cultural conditions that were "characteristic" of those under which cell-wall-deficient (CWD) organisms grow. The initial variation in morphology and staining of the bacteria and the eventual stable growth on blood agar are more consistent with enhanced cell wall stability following isolation than conversion in vitro to CWD forms in the presence of hypertonic medium. The electron micrographic appearance of numerous bacteria in the tissues suggests that the hypertonic medium did not have its effect by allowing growth of organisms present in small numbers. The presence of apparent bacterial cell walls in the electron micrographs neither supports nor excludes functional "cell wall deficiency."

Secondly, is this organism the prime aetiological factor in Whipple's disease? Clearly no definite statement can be made from this study on one patient. Our studies to define the characteristics of this organism, the dramatic clinical improvement following tetracycline therapy associated with a disappearance of bacteria from the tissues, and a reduction in antibody titres to the isolated organism following antibiotic therapy (unpublished) support but do not prove an aetiological role for the organism in our patient. The production of lesions similar to those of Whipple's disease in a rabbit injected with the organism provides further support to this argument.

The questions raised by Dr Taylor-Robinson are critical, and for definitive answers further data are required. We certainly do not intend to convey the impression that the organism isolated in our study is necessarily the cause of Whipple's disease but hope we can stimulate study of more patients with this interesting and complex disorder, to understand better its aetiology.

R L CLANCY
W A F TOMPKINS
T J MUCKLE

H RICHARDSON
W E RAWLS

Department of Medicine,
McMaster University,
Hamilton, Ontario

Diagnostic criteria in the ¹²⁵I-fibrinogen test

SIR,—Mr V C Roberts's paper (23 August, p 455) is a timely and valuable statement of problems encountered with the Pitman rate-meter and we strongly support his plea for standardisation of diagnostic criteria in the ¹²⁵I-fibrinogen test. The need for standardisation is clearly illustrated by our figures. A total of 314 patients were scanned