definitive evidence and therefore may confuse those who prescribe oral contraceptives.

The authors express concern about the high percentage of their patients with post-pill amenorrhoea who had suffered from "amenorrhoea or prolonged or irregular menstrual cycles" before taking the pill. It should be made clear that in these patients post-pill amenorrhoea may just be a return to the pre-pill menstrual irregularity or to a spontaneous progression of that state; and there is no evidence that true pill-engendered amenorrhoea on stopping oral contraception is more likely in these groups than in those who have menstruated normally before starting oral contraception. Women with menstrual irregularity or prolonged cycles should not be denied the pill for this reason alone. No method is available at present to identify those patients who would be likely to develop iatrogenic amenorrhoea.¹

It is interesting that no correlation has been noted between the duration of oral contraception and duration of hypothalamic suppression on stopping oral contraception.—I am, etc.,

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¹ Greenhalf, J., and Rota, S., *Practitioner*, 1972, 209, 196.

Surgery on Day Patients

SIR,—We have recently assessed the subjective responses of 231 patients who were treated in our one-day surgical unit at this hospital by giving each patient a simple questionnaire to complete, the results of which we hope to publish shortly. We therefore read with great interest the recent correspondence regarding outpatient surgery.

Our cases included patients from the dental department (107), the urological unit (89), the E.N.T. unit (16), the plastic surgery unit (11), and the general surgical unit (8). Many patients required endotracheal intubation even though the operations were minor. We found that at four days 29 were still complaining of pain. Thirty-one patients claimed to have suffered severe pain, 74 moderate pain, and 50 mild pain, and many factors were responsible for its production. This survey is a pilot study and we intend to institute a further careful and controlled assessment of the minor sequelae of operation and anaesthesia. We believe this to be relevant in assessing the suitability of the cases for this type of treatment. Many of our patients make an early return to work and many immediately take up full household duties. This may explain why the incidence and severity of pain were higher in females than males.

It is clear from the letters published in the *B.M.J.* that local conditions regarding home and hospital facilities and medical staff are of paramount importance and it seems to us unlikely that generalized recommendations will be of value compared with carefully acquired local knowledge and good local liaison. We feel that much excellent quality work is done in outpatient units with adequate anaesthetic and operating facilities, and also during routine operating lists, and that this may well be successfully expanded as local conditions dictate. We are sure, however, that further assessment of the

patients' pain and their responses to this experience and of their fate at home is necessary before widespread recommendations are made.

We noted that varicose vein stripping is performed in one day unit (Drs. R. A. Nabatoff and D. C. C. Stark, 15 September, p. 590) and while agreeing with the principle of early mobilization, we wondered how many of our colleagues would be willing to return to full duties one day after operation.—We are, etc.,

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Permanent Brain Damage after Lithium Intoxication

SIR,—For a number of years clinical experience indicated that patients who survive lithium intoxication suffer no permanent damage.¹ A recent report by von Hartitzsch *et al.*² shows that in some instances (their cases 1 and 2) lithium intoxication may result in permanent damage to the basal ganglia and cerebellar connexions. Angst³ also described a case of lasting brain damage after lithium intoxication. We report here two further cases.

Case 1.—A 38-year-old woman was admitted unconscious to hospital after having taken large amounts of lithium carbonate and phenytoin with suicidal intent. On the following day the serum lithium concentration was 5.6 mEq/l. In the acute stage the patient responded to painful stimuli by opening the eyes. Neurological examination showed bilateral nystagmus, spasticity, and hyperactive deep reflexes of the extremities, but normal plantar responses. There were many myoclonic jerks and grand-mal seizures. Cardiac arrest developed during treatment with forced diuresis, but normal activity was obtained by external heart massage. She survived with severe neurological defects. Neurological examination five years later showed dysarthria, nystagmus, ataxic knee-heel and finger-nose tests, and bilateral dysidiadochokinesis. Severely ataxic walking was possible but only with support. Position and vibration sense were normal; deep reflexes were hyperactive. The patient had no permanent mental after-effects of the lithium intoxication.

Case 2.—A 55-year-old woman was treated with 900 mg lithium carbonate daily. During the first week after a major gynaecological operation she became dehydrated and developed signs of lithium intoxication with clouding of consciousness, tremor, and rigidity. The serum lithium concentration had then risen to 2.9 mEq/l. and lithium treatment was discontinued. Neurological examination three weeks later showed a conscious patient with severe ataxia. She could not walk without support and had bilateral nystagmus and hyperactive deep reflexes; knee-heel and finger-nose tests were ataxic. The condition improved considerably during the first months, but three years later the patient still showed slight signs of cerebellar affection. The lithium intoxication did not leave any mental after-effects.

It is not clear whether in case 1 the permanent neurological sequelae were due to a direct action of lithium or were the result of anoxia of the central nervous system caused by coma and shock. The patient had also taken an overdose of phenytoin, but permanent after effects of phenytoin poisoning are not known.⁴ In case 2 it is likely that a direct noxious action was exerted by lithium, perhaps in combination with de-

hydration. It is, however, obscure why lithium poisoning in this instance led to lasting after effects when many cases of equally severe poisoning have been without such sequelae.—We are, etc.,

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- ¹ Schou, M., Amdisen, A., and Trap-Jensen, J., *American Journal of Psychiatry*, 1968, 125, 520.
- ² Hartitzsch, B., von, *et al.*, *British Medical Journal*, 1972, 4, 757.
- ³ Angst, J., *Ars Medici Liestal*, 1970, 60, 29.
- ⁴ Dam, M., *The Density and Ultrastructure of the Purkinje Cells following Diphenylhydantoin Treatment in Animals and Man*. Thesis, Copenhagen, 1972.

Toxoplasmosis and Embryopathy

SIR,—The problem of ascertaining the real overall incidence of congenital toxoplasmosis in Britain, to which Drs. Jean M. Scott and M. Layinka Swinburne refer in their letter (17 November, p. 422), is a formidable one and likely to be beset with considerable difficulties at both laboratory and clinical levels. Nevertheless, if serological screening is shown to be a practical possibility for this purpose, either to identify the mother likely to produce an infected baby or possibly to detect at birth the infected infant, we believe that the stable haemagglutinating antigen prepared by Thorburn and described by Thorburn and Williams¹ could prove useful.

We have recently examined sera from 4,751 antenatal patients in the north of Scotland using this antigen, as well as by other serological tests, and have shown that even within this region there are considerable geographic differences in the incidence and type of antibodies to toxoplasma in pregnant women. In a concurrent screening of 947 specimens of cord blood from babies born in hospitals in the region 171 (18%) were shown to have an increased level of IgM, and 48 of these were positive to the toxoplasma haemagglutination test. When examined by fluorescent antibody tests 11 of the 48 showed the presence of toxoplasma-specific IgM at titres varying from 1/4 to 1/16. In some cord sera, apparently showing toxoplasma-specific IgM antibody, we have failed to detect the specific IgM antibody in the fractions obtained from sucrose density gradients. The mothers of these infants were serologically positive and showed IgM titres during pregnancy. This may be related to the false positive phenomenon described by Remington and Desmonts.² None of the babies showed gross abnormality at birth, but the long-term follow-up and clinical assessment will be important and an essential indicator of the value or otherwise of the methods used.

A fuller account of this investigation is in preparation.—We are, etc.,

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- ¹ Thorburn, H., and Williams, H., *Journal of Clinical Pathology*, 1972, 25, 762.
- ² Remington, J. S., and Desmonts, G., *Journal of Pediatrics*, 1973, 83, 27.