the Chinese." But despite the low local background risk table I of their report supports my case: a significant 10-5% of leg scans were positive after major surgery for benign conditions in those taking the pill (excluding the minilap sterilisations), not 4-6% as quoted. Among those not taking the pill there was not a single postoperative positive ¹²⁵I fibrinogen scan for deep vein thrombosis in that study or in the London study, which showed a 20% rate in those taking the pill. Sagar *et al* concluded, "Women on oral contraceptives constitute a high risk group for postoperative thromboembolism."¹¹

Mr Sue-Ling and Professor Hughes rightly emphasise the other side of the risk-benefit equation—unwanted pregnancy. But given a United Kingdom maternal mortality of less than 1 in 10 000¹² it is far from obvious that more women would die. Moreover, the choice implied is not correct: it is not "the pill" or "unwanted pregnancy." There are other effective methods, including injectable contraceptives, such as medroxyprogesterone.¹ At the Margaret Pyke Centre we now routinely offer this (with counselling). One or more injections each lasting three months will cover the time on any waiting list. The oral contraceptive may be resumed two or more weeks after surgery without regard to the time of the last injection. Progestogen only pills also do not increase the risk of deep vein thrombosis and pulmonary embolism and have a failure rate above age 35 of less than 1 per 100 woman years.¹³

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SIR,—We agree with Mr H Sue-Ling and Professor L E Hughes (13 February, p 447) that epidemiological studies showing an association between the combined oral contraceptive and venous thromboembolism can be criticised both for their methods and because the diagnosis of thromboembolism was made clinically.¹ Case-control and cohort studies, however, have almost uniformly found a positive association between the combined oral contraceptive pill and idiopathic venous thromboembolism. Furthermore, morbidity due to venous thromboembolism fell after the introduction of low dose oestrogen pills and the concomitant reduction in the use of higher dose pills.²

Venous thrombosis is the result of blood coagulation and fibrin deposition in the presence of venous stasis. The incidence of spontaneous and postoperative thromboembolism is unknown. One study has shown that 20% of women taking the combined pill developed a deep venous thrombosis, diagnosed by ¹²⁵I fibrinogen scans, after surgery.³

The new combined pills containing 30 µg ethinylloestradiol together with the latest "third generation" progestogens (desogestrel or gestodene) alter the coagulation system, although to a lesser extent than older, higher dose formulations.⁴ We have shown recently that triphasic combined oral contraceptives containing ethinylloestradiol (mean dose 32.4 µg) in combination with either levonorgestrel (mean dose 92.4 µg) or gestodene (mean dose 78 µg) induced prothrombotic changes which were apparent after the first treatment cycle and were consistent over the six cycle study period. Both these preparations induced increases in biological activities of procoagulant factors VII, X, XII, and fibrinogen and decreased activity of antithrombin III compared with pretreatment levels ($p < 0.05$ to $p < 0.001$). Furthermore, protein C activity remained unchanged. It is well documented that decreased antithrombin III or protein C activity is associated with thromboembolism. Our findings indicate that the procoagulant factor increases induced by oral contraceptives are not balanced by increased biological levels of the two most important coagulation inhibitors—antithrombin III and protein C. The extent to which these changes are balanced by changes in the fibrinolytic system is unknown.

Venous thromboembolism is life threatening, causes long term morbidity, and has serious implications for future pregnancies. When major surgery is planned the combined oral contraceptive pill should be stopped four to six weeks preoperatively and an alternative method of contraception provided. This will enable the changes in the coagulation system to revert to normal and thereby not add to the risks of thromboembolism already present. In view of the morbidity and mortality associated with thromboembolism, we recommend prophylaxis with subcutaneous heparin when major surgery is unavoidable while a woman is taking the combined oral contraceptive pill. Surgery such as laparoscopy, dental extraction, and tonsillectomy, however, where the woman is mobile immediately, does not necessitate any alteration in contraceptive practice.

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SIR,—We would like to confirm the comments of Mr H Sue-Ling and Professor L E Hughes on the risk of pregnancy caused by the advice to stop oral contraceptives before surgery. We have a practice of 14 000 patients and in the past year two 19 year old unmarried women have become pregnant after being told to stop the contraceptive pill before surgery. The first underwent a nephrectomy and the other shaving of an exostosis of the clavicle.

They both conceived despite being advised to use other contraceptives until they had restarted the pill.

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Personal computers in the Third World

SIR,—Our experience of using a personal computer in administration, teaching, and research in a university teaching department in the Third World is similar to that of Drs I H Wilson and D A K Watters (23 January, p 255). We too have used a BBC model B for three years, and it has broken down only once. This reliability may be due to the extra protection of a spike suppressor plug. A printer that allows single sheet printing saves us buying expensive fanfold computer paper, and a printer ribbon reinking machine (Computer Friends, USA) makes the cost of a ribbon negligible. Surprisingly, we find it cheaper, and sometimes quicker, to order equipment from British retailers.

We put our machine to many uses. A spreadsheet for examination marks has eliminated tedious calculation of totals and averages. Students use a self teaching program developed by the University of Leeds which we have modified slightly to help those with poor English. It is very popular as students prefer to make silly mistakes with an impersonal computer rather than in a tutorial. A program for marking multiple choice question papers is very useful. It used to be almost impossible to prepare a correctly typed multiple choice question paper, but now it is made "word perfect" on the word processor and the stencil is cut on the dot matrix printer. The script of transparencies for overhead projection is fed into the word processor, printed in enlarged type with a special chip (PMS Multifont), and then photocopied on to the transparency. The transparency can be wiped clean and reused while the scripts are stored on the disk. We use a large capacity database (System Delta) for our drug audits. The students themselves enter the data, a useful first step in becoming computer literate. Calculation of pharmacokinetic variables is done using specially written software.¹

We have had no formal training but have found a user group (BEEBUG) and its magazine very helpful. The biggest barriers to wider acceptance of computers in medicine in Sri Lanka appear to be "technophobia" and the misconception that using computers means learning computer programming.

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Carbon monoxide poisoning

SIR,—Drs T Meredith and A Vale (9 January, p 77) emphasise the importance of treatment with hyperbaric oxygen in the prevention of serious neuropsychiatric complications of carbon monoxide poisoning. This treatment is itself dangerous as reactive oxygen metabolites worsen the tissue damage of anoxia on subsequent reoxygenation. An increased rate of auto-oxidation, lipid peroxidation, and formation of superoxide and hydrogen peroxide mitochondria have been shown