- 11 Vandam LD, Dripps RD. Long-term follow-up of patients who received 10098 spinal anestetics. JAMA 1956;161:586-91.
- 12 Gutsche BB. Lumbar epidural analgesia in obstetrics: taps and patches. In: Reynolds F, ed. Epidural and spinal blockade in obstetrics. London: Baillière Tindall, 1990;95-106.
- Woolf CJ. Recent advances in the pathophysiology of pain. Br J Anaesth 1989;63:139-46.
 Edelman JD, Wingard DW. Subdural hematomas after lumbar dural puncture. Anesthesiology
- 1980;52:166-7. 15 Newrick P, Read D. Subdural haematoma as a complication of spinal anaesthesia. BMJ 1982;
- 285:341-2.
 16 Hart IK, Bone I, Hadley DM. Development of neurological problems after lumbar puncture. BMJ 1988;296:51-2.
- 17 Vos PE, de Boer WA, Wurzer JA, van Gijn J. Subdural hematoma after lumber puncture: two case reports and review of the liturature. *Clin Neurol Neurosurg* 1991;93:127-32.
- 18 Eerola M, Kaukinen L, Kaukinen S. Fatal brain lesion following spinal anaesthesia. Report of a case. Acta Anaesthesiol Scand 1981;25:115-6.
- Rickford JK, Speedy HM, Tytler J, Lim M. Comparative evaluation of general, epidural and spinal anaesthesia for extracorporeal shockwave lithotripsy. *Ann Coll Surg* 1988;70:69-70.
 Carbaat PAT, van Crevel H. Lumbar punctured headache: controlled study on the preventive effect
- of 24 hours' bed rest. Lancet 1981;ii:1133-5.
- 21 Gormley JB. Treatment of postspinal headache. Anesthesiology 1960;21:565-6.
- 22 Reynolds F. Epidural analgesia in obstetrics. Pros and cons for mother and baby. BMJ 1989;299: 751-2.

Managing miscarriage medically

Early studies suggest that it works

The accepted management of miscarriage is to ensure that the products of conception are completely evacuated from the uterus as soon as possible in order to minimise blood loss and the risk of infection. Surgical curettage under general anaesthesia has long been the method of choice and currently accounts for about three quarters of emergency gynaecological operations performed in Britain.¹

With the development of the antiprogesterone mifepristone and the new synthetic prostaglandins as a safe and effective method of terminating early pregnancies² evaluation of such drugs for the management of miscarriage is the next logical step. Two pilot studies from Aberdeen have addressed this issue. In the first study 60 women with a missed abortion or an anembryonic pregnancy received mifepristone and the prostaglandin E1 analogue misoprostol, both given orally.³ Patients were admitted to a day ward to be given the prostaglandin. Only three patients failed to abort and required surgical intervention; two others later required curettage but no products of conception were found. Side effects related to the prostaglandin (nausea, vomiting, and diarrhoea) were rare, and only seven women needed parenteral analgesia. No infective sequelae were reported.

In the second study 44 women with a clinical and ultrasonographic diagnosis of incomplete or inevitable abortion were given a single dose of either intramuscular sulprostone or oral misoprostol; complete abortion was achieved in 42 women (p 894).⁴ Only two patients required parenteral analgesia. More than half of the women resumed normal activities immediately, and most did so after three days.

As the authors point out, a medical approach to such a common gynaecological condition has implications for both the health service and patients. It would substantially reduce the surgical workload resulting from miscarriage, thereby freeing time on routine operating lists for other cases. It would greatly reduce the need for out of hours operations, although this can be achieved by establishing an early pregnancy assessment unit with rapid access to ultrasonography.⁵

Furthermore, the use of gynaecological beds would be optimised as patients would be admitted specifically for treatment. Time spent waiting for a convenient space on a theatre list and then recovering from general anaesthesia would be saved. In selected cases such treatment might be evaluated in the community, possibly being extended to general practice, although the wider use of these abortifacient drugs requires detailed assessment.

Medical management would also reduce the morbidity related to general anaesthesia and surgery (cervical trauma, perforation, and uterine adhesions), although the incidence of complications after surgical evacuation is low. Some women might also prefer a medical to a surgical procedure, which is the case with the early termination of pregnancy.⁶ In this study fewer women who had undergone medical termination than had had surgery indicated a preference for the same method in the future, if it was required. Most women, however, who had experienced both methods preferred the medical approach. Clearly, detailed studies of consumers' wishes in various settings are needed to determine which method is preferable in managing miscarriage.

Medical methods will not suit all women. Those who are bleeding heavily on admission will require emergency curettage to stop the bleeding, and prostaglandins will be contraindicated in some women—for example, those with asthma or heart disease. Nevertheless, these initial studies are encouraging and certainly merit further studies to establish the optimum drug regimens for the various clinical manifestations of miscarriage and the gestation for which medical methods are best suited.

Ultimately, the merits of medical treatment should be judged alongside surgical evacuation in prospective randomised trials. If, as these initial studies suggest, surgical and medical treatments are equally efficacious, cost may be the decisive factor.

> PETER MACROW Research fellow MAX ELSTEIN Professor

University Hospital of South Manchester, Manchester M20 8LR

- 1 McKee M, Priest P, Ginzlet M, Black N. Can out-of-hours operating in gynaecology be reduced? Arch Emerg Med 1992;9:290-8.
- 2 UK Multicentre Trial. The efficacy and tolerance of mifepristone and prostaglandin in first trimester termination of pregnancy. Br J Obstet Gynaecol 1990;97:480-6.
 3 El Refaey H, Hinshaw K, Henshaw R, Smith N, Templeton A. Medical management of missed
- El Refaey H, Hinshaw K, Henshaw R, Smith N, Templeton A. Medical management of missed abortion and anembryonic pregnancy. *BMJ* 1992;305:1399.
 Henshaw RC, Cooper K, El Refaey H, Smith NC, Templeton AA. Medical management of
- 4 Henshaw RC, Cooper K, El Refaey H, Smith NC, Templeton AA. Medical management of miscarriage: non-surgical uterine evacuation of incomplete and inevitable spontaneous abortion. BMJ 1993;306:894-5.
- 5 Bigrigg MA, Read MD. Management of women referred to early pregnancy assessment unit: care and cost effectiveness. *BMJ* 1991;302:577-9.
- 6 Urquhart DR, Templeton AA. Psychiatric morbidity and acceptability following medical and surgical methods of induced abortion. Br J Obstet Gynaecol 1991;98:396-9.