the end the problem is largely an economic one, and, as Dr. Dorolle rightly says, "the only way of preventing the old plagues, and some new ones, from spreading from continent to continent and from country to country is to help the poorest nations of the world to reach such a level of economic and technical development that it will be possible for them to combat the evil at source."

Therapeutic Abortion

Recent changes in the law have resulted in an increase in the number of patients submitted for therapeutic abortion. It is opportune therefore to consider the methods available for terminating pregnancy and their limitations and dangers.

In the first three months of pregnancy the quickest method of termination is by dilatation of the cervix with graduated dilators and evacuation of the uterus with finger and ring (or ovum) forceps. But emptying the uterus of its contents is not always an easy matter even for the skilled gynaecologist, and there are certainly many pitfalls for the inexperienced practitioner. Unless great care is taken in dilatation the cervix may be split longitudinally. The slow introduction of each dilator, pausing briefly before withdrawing it and proceeding to the next, reduces this danger and also helps promote uterine contraction. The pregnant uterus is soft, so that dilators may easily perforate its anterior wall if retroversion is unrecognized or the posterior wall if the uterus is, wrongly, thought to be retroverted. An intravenous injection of ergometrine given before dilating the cervix will help mitigate the danger of bleeding, while if bleeding is troublesome a blunt flushing curette using hot saline—118° F. (48° C.)—has a haemostatic effect. But haemorrhage can be alarming, and most gynaecologists have had an unnerving experience when evacuating a pregnant uterus. The difficulties increase as pregnancy advances—so much so that after the 12th or certainly after the 14th week (the actual size of the uterus is more critical than the duration of amenorrhoea) evacuation in one stage is best avoided.

If abortion by the vaginal route is nevertheless favoured and if there is no urgency, the risks of forcible dilatation of the cervix can be avoided by the insertion of one or more laminaria tents. As the tents swell the cervix is slowly dilated to permit evacuation of the uterine contents 24 hours later. The risk of mishap is slight, but this method—familiar to an older generation of gynaecologists—is nowadays comparatively little known and not much favoured. Nor does it solve all the problems.

Another possible alternative to the one-stage operation is the injection of an abortifacient paste between the membranes and the uterine wall. This procedure will usually be followed by expulsion of the ovum and often it is complete, though in a minority of cases abortion may be incomplete and subsequent evacuation necessary. This simple method usually works well and has been widely used, but unfortunately it is not free from risk, and sudden death from embolism or vagal inhibition has been reported.

If the uterus is enlarged to more than the size of a 14-weeks pregnancy and is palpable abdominally, most gynaecologists prefer to perform an abdominal hysterotomy. This is, in effect, a caesarean section in miniature. The operation can conveniently be performed through a Pfannenstiel incision. An oxytocic injection given before opening the uterus minimizes haemorrhage and promotes uterine contraction and retraction. A low vertical incision into the uterus is usually preferred and if the bladder peritoneum is first reflected downwards it can be used subsequently to cover the incision, which is sutured in two layers. The ovum can usually be extracted intact, decidua swabbed away, and the uterus seen to be emptied completely.

In skilled hands abdominal hysterotomy is a safe procedure, and it has the advantage that it can be combined with sterilization if desired. Its one drawback is that occasionally decidual cells may be implanted in the abdominal wall or pelvic peritoneum, with subsequent development of endometriosis. The risks which once attended abdominal surgery have so diminished that nowadays there would seem to be no indication for performing vaginal hysterotomy.

Apart from these traditional methods a number of new techniques have been suggested in recent years. Among these is the intrauterine injection of hypertonic saline or glucose. This method is applicable particularly when pregnancy has advanced beyond the 12th week or in cases of intrauterine death. With a suitable long needle as much amniotic fluid as possible is removed and replaced with a corresponding volume of up to 200 ml. of 20% saline[2] or 50% glucose.[3] The needle is usually inserted through the abdominal wall, but the vaginal route may be favoured. If there is difficulty in locating the amniotic sac—and the smaller the uterus the more difficult it is—an alternative is to inject saline into the extra-amniotic space via a Foley catheter in the cervix. In most cases expulsion of the uterine contents occurs 24–48 hours after injection.

Though some authors have commended the safety of the method,[3] there is a risk of infection after the injection of glucose. Anaerobic organisms—including *Clostridium welchii*—can flourish in a glucose medium, and serious sepsis has been reported. For this reason many gynaecologists have preferred saline. Recently, however, there have been disquieting reports of several deaths[4] (characterized by focal intracranial haemorrhage) following the injection of saline. These are tragic mishaps, and unless suggested safeguards[5] to avoid the risks of intravascular injection and hypernatraemia can ensure the safety of the method it cannot continue to be recommended. In this connexion it is worth noting that though it was once widely used in Japan it has been largely given up.[6]

Vacuum suction has been recently introduced and provides a promising (and possibly safer) alternative to the conventional method of evacuating the uterus in the first 12–14 weeks of pregnancy. It appears to have been first described in China in 1958, and there are now many reports of its use on many thousands of patients without serious complication.[7 8] Recently it has been adopted in Britain. The cervix is first dilated. A hollow suction tube of convenient size is selected and introduced in the uterus. A negative pressure of 0.4–0.6 kg./sq. cm. is produced, and, with the suction tube used rather like a curette, the conception products are broken up and withdrawn into a suction bottle. The procedure is technically simple, and with a little practice the uterine contents can be aspirated cleanly and quickly. It is claimed that less dilatation

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2 Bengtsson, L. P., and Csapo, A., *Amer. J. Obstet. Gynec.*, 1962, **83**, 1083.
3 Brosset, A., *Acta obstet. gynec. scand.*, 1954, **33**, 445.
4 Cameron, J. M., and Dayan, A. D., *Brit. med J.*, 1966, **1**, 1010.
5 Fuchs, F., quoted in *Obstet. Gynec. Surv.*, 1966, **21**, 739.
6 Wagatsuma, T., *Amer. J. Obstet. Gynec.*, 1965, **93**, 743.
7 Chalupa, M., *Zbl. Gynäk.*, 1964, **86**, 1803.
8 Nilsson, C.-A., *Acta. obstet. gynec. scand.*, 1967, **46**, 501.

of the cervix is required than in the conventional operation. Certainly the bleeding is usually less. But it is questionable whether the method is less traumatic to the uterine mucosa, and perforation of the uterus has occurred on occasion. None the less it is likely to be used more often.

In summary, when the decision has been taken to terminate pregnancy it is best carried out in the first fourteen weeks by a conventional one-stage evacuation or by vacuum suction, and later in pregnancy by abdominal hysterotomy. But therapeutic abortion is not a simple operation. Those who would extend the scope of legal abortion on purely social grounds would do well to remember that no method of terminating pregnancy is entirely devoid of risk. The operation is only as safe as the surgeon who performs it. Mishaps will occur, and they will be kept to a minimum only when operations are performed in well-equipped hospitals by skilled gynaecologists who are well aware of the dangers.

Treatment and Prevention of Poisoning

A report[1] published by the Ministry of Health and the Scottish Home and Health Department draws attention to the large number of deaths from poisoning in Britain. In 1966 there were nearly 6,000. Though rates are not always comparable internationally, those for England and Wales and for Scotland do seem to be uncommonly high. Two-thirds of these deaths are classed as suicide and self-inflicted, with equal numbers of males and females. Even so, the report considers that the proportion of deaths attributed to accidental poisoning may be overestimated. "As far as ingested poisons are concerned we believe that the majority of the deaths in adults are the result of deliberate self-administration. Accidental death from ingested poisons is met with almost exclusively in children under 10 years of age."

Since 80% of deaths from poisoning occur outside hospital, even the most perfect treatment after admission cannot dramatically affect the suicide rate. Nevertheless there are about 1,000 deaths in English and Welsh hospitals each year, 18.9 per 1,000 poisoning admissions. The number of these admissions is rising steeply. In 1957 there were 15,900 in England and Wales. In 1964 the number was 50,400, amounting to 6.8% of all admissions to general medical and surgical beds. The largest single cause is barbiturate poisoning, but a recent development is the increase in numbers taking antidepressant tablets and tranquillizers, for which the numbers of prescriptions issued have risen in parallel. Increasingly people are being admitted having taken a variety of drugs.

The main purpose of the report is to make clear the necessary arrangements for the treatment of the patients at hospital. Resuscitative and eliminative techniques are not detailed, but the requirements of hospitals receiving poisoned patients are stated. Ambulances carrying poisoned patients should have a trained attendant as well as the driver. Patients should normally be received only at hospitals with accident and emergency centres, and these should be staffed and equipped for dealing with cases of acute poisoning, children as well as adults. There is agreement with an earlier report[2] that "one general hospital in an area should be designated as the preferred receiving centre for cases of poisoning, to be known as the District Centre," but the present report goes much further: "All accidentally poisoned patients requiring inpatient management and all self-poisoned patients, whether or not seriously ill physically, should ultimately go to the appropriate designated poisons treatment centre—or paediatric unit in the case of children." This recommendation stems from the subcommittee's firm belief that psychiatric aspects must be dealt with as thoroughly as the toxicological ones. "All cases of deliberate self-poisoning should therefore receive psychological and social evaluation and help. The physical condition of the patient is no indication of the extent to which such help is needed." Designated centres for the treatment of poisoning should therefore preferably be sited in hospitals with a psychiatric unit able to provide the emergency services. Where this is at present impossible, "arrangements must be made for psychiatrists and social workers to be available every day of the week, whether these personnel are employed by the general hospital or detached for a considerable part of each day from the local psychiatric hospital."

The report recommends that at each centre there should be a consultant specially interested in clinical toxicology and that the admission of all poisoned patients into one or two particular wards would be advantageous both for medical and for nursing reasons and also for psychiatric supervision. There must be a 24-hour laboratory service, "able to carry out at short notice qualitative and quantitative tests for blood carbon monoxide, salicylates, alcohol, barbiturates (with group identification), and iron, and qualitative urinary phenothiazines." Most patients need constant skilled observation, but only 1 to 2% of all admissions require elaborate techniques—for example, haemodialysis—for eliminating the drug. Facilities for intensive respiratory care should also be available in the hospital. Aftercare by the psychiatric services, local authority services, and the general practitioner is stressed. As the report puts it, "The occasion of a self-poisoning act is no more than an incident of crisis in a psychological illness or in a social predicament." Any statement from the patient implying suicidal intention should be taken seriously. Prevention was not within the terms of reference of the report, though in the section on arrangements after discharge the authors enjoin great caution in prescribing large quantities of drugs. The accumulation of drugs in a patient's home can present a temptation to a mentally disturbed person as well as a hazard to children.

The World Health Organization has also recently published a report on the prevention of suicide.[3] In a brief compass this valuable publication draws attention to those groups of the population at high risk of suicide. The old, the widowed, and the separated, those living alone, offspring of broken homes, and those in certain occupations (including doctors) are singled out for mention. Alcoholics and depressed patients are also specially noted as at risk. Recently P. Sainsbury[4] has claimed that "one in six patients suffering from a manic-depressive depression can be expected to take his own life." N. Kessel and W. McCulloch[5] have drawn attention to the

[1] *Hospital Treatment of Acute Poisoning*, Report of the Joint Subcommittee of the Standing Medical Advisory Committee, Ministry of Health and Scottish Home and Health Department, 1968. H.M.S.O.
[2] *Emergency Treatment in Hospital of Cases of Acute Poisoning*, Report of the Subcommittee of the Standing Medical Advisory Committee of the Central Health Services Council, Ministry of Health, 1962. H.M.S.O.
[3] *Prevention of Suicide, Wld Hlth Org. Publ. Hlth Pap.*, 1968, No. 35.
[4] Sainsbury, P., in *Recent Developments in Affective Disorders*, ed. A. Coppen and A. Walk, *Brit. J. Psychiat.*, Special Publication No. 2, 1968.
[5] Kessel, N., and McCulloch, W., *Proc. roy. Soc. Med.*, 1966, **59**, 89.
[6] Bagley, C., *Soc. Sci. Med.*, 1968, **2**, 1.