acts of sexual abuse, of which genital mutilation is a gross example.

In addition, they state that "genital mutilation differs from other forms of child abuse in that it is done with the best intentions for the future welfare of the child." This represents another collusion with the abusive system: there is no benefit to the child. The only people to benefit are the oppressors who wield their power within that particular culture.

The authors seem to dismiss the importance of resulting psychological trauma. In my research on post-traumatic stress disorder in women who had undergone obstetric or gynaecological procedures I found that women could be severely traumatised psychologically by painful, mutilating vaginal procedures that were carried out without clear consent in an unsympathetic environment.¹ Obstetric and gynaecological procedures are an accepted form of medical practice in Britain that women are taught to expect, yet women may still develop post-traumatic stress disorder as a result of their "culturally accepted" experiences.

Black and DeBelle casually refer to "male circumcision" as if it is benign. It is also medically unjustifiable genital mutilation, which is sanctioned by a culture purporting to be civilised.^{4,5}

It is time that genital mutilation was banned completely and that the medical profession faced up to its collusion in the harming of patients.

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1 Black JA, DeBelle GD. Female genital mutilation in Britain. *BMJ* 1995;310:1590-4. (17 June.)

2 Miller A. *Banished knowledge: facing childhood injuries*. London: Virago, 1991.

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*As well as the three letters here we received five others. Two agreed with Janet Menage that male circumcision is also genital mutilation of a child without consent; another agreed with Elspeth Webb's anthropological analysis; a fourth contained an account of a 10 year old girl who bled to death after being circumcised in Egypt, where, according to the correspondent, 85% of all women are circumcised; and the fifth was a request for information, which has been passed to the Royal College of Obstetrics and Gynaecology.—EDITOR

Dangers of cocaine and adrenaline paste

Exceeding the recommended dose may have serious sequelae

EDITOR,—K E A Nicholson and J E G Rogers report serious complications associated with the use of topical cocaine with adrenaline,¹ but they draw inappropriate conclusions about the evidence they present and fail adequately to emphasise that the recommended doses and concentrations were exceeded.^{2,3} It is perhaps not surprising that serious sequelae may occur under these circumstances.

We are surprised that Nicholson and Rogers feel able to conclude from their three cases that it was the combination of cocaine and adrenaline that is responsible for the complications they observed; this is an unreasonable assumption. The randomised trial they quote showed that the addition of 1/1000 adrenaline to a 10% solution of cocaine was generally associated with significantly lower

plasma cocaine concentrations than were seen with cocaine alone and that the combination of the two drugs was not associated with a change in cardiovascular variables.⁴

The fact that this combination of the two drugs is potentially hazardous is an important message. The current recommendations in the *British National Formulary*² are accepted by the British Association of Otorhinolaryngologists—Head and Neck Surgeons. There seems to be little evidence that these recommendations are inappropriate.

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1 Nicholson KEA, Rogers JEG. Cocaine and adrenaline paste: a fatal combination? *BMJ* 1995;311:250-1. (22 July.)

2 BMA and Royal Pharmaceutical Society of Great Britain. *British national formulary* No 29. London: BMA, RPSGB, 1995.

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Accurate measurement of dose and patience are important

EDITOR,—K E A Nicholson and J E G Rogers's lesson of the week about arrhythmias associated with the use of cocaine and adrenaline paste¹ is bound to fuel the controversy surrounding the use of these two drugs in sinonasal surgery. It is unclear from their report whether the overdose of cocaine was intentional or inadvertent: all three patients reported on received two to three times the maximum recommended dose of cocaine for their weight. With no evidence of similar complications when cocaine is used in recommended doses, to abandon this drug combination in all forms seems an overreaction. Recommended maximum doses surely have a purpose. Overdose of almost any anaesthetic drug will result in death; this does not result in a generalised call for withdrawal or the drug, nor should it.

The volume of cocaine paste can be measured with a 2 ml syringe; this avoids inadvertent overdose. In at least two of the cases reported, arrhythmia occurred after nasal instruments were applied. This suggests an inadequate period between local application of the paste and the start of the operation.

We suggest the following recommendations for the use of cocaine and adrenaline paste: use less concentrated (10%) paste; use a 2 ml syringe to measure the volume of the paste; do not exceed the stated maximum dose per kg; and allow adequate time for anaesthesia to occur. These steps will at least enable proper evaluation of any cardiac event.

Although we do not use cocaine and adrenaline paste, we routinely use a solution of both drugs for patients undergoing functional endoscopic sinus surgery. Over the past four years we have treated over 400 patients without adverse effects, using up to 20 ml of 0.625% cocaine, 0.0625% ephedrine, and 1/20 000 adrenaline instilled into the nose with the patient in a head down, supine position for 10 minutes after general anaesthesia has been established. This works well, resulting in excellent decongestion and improved haemostasis, which render the procedure much safer.

Finally, although "nasal surgery is rarely life saving," sinus surgery may prevent the development of serious complications, such as blindness, meningitis, and the formation of intracranial abscesses. Endoscopic procedures on the sinuses require adequate visualisation so that important structures, including the dura, orbits, optic nerves, and internal carotid arteries, are not endangered. To misquote the authors: the complications of sinusitis may be life threatening in patients who are otherwise young and fit. The disadvantages

of correct doses of local decongestion must be substantial to justify the increased risk that surgery without it would entail.

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Combination is still widely used

EDITOR,—The use of cocaine and adrenaline paste is a controversial issue among otolaryngologists.¹ In 1991 the British Association of Otolaryngologists—Head and Neck Surgeons surveyed all consultant surgeons who were members and found that 63.5% used cocaine without adrenaline, 19.5% used cocaine and adrenaline, and 17% used cocaine with and without adrenaline.² Of the 312 who used cocaine, 76 had changed their method of using it since 1986, generally because of concern about safety. Six deaths were recorded in the report.

The *British National Formulary* states that "cocaine is still used in otolaryngology and is applied to the nasal mucosa in concentrations of 4 to 10% (40-100 mg/ml). The maximum total dose recommended for application to the nasal mucosa in fit adults is a total of 1.5 mg/kg, which is equivalent to a total topical dose of approximately 100 mg for an adult male. It should be used only by those skilled in the precautions needed to minimise absorption and the consequent risk of arrhythmias. Although cocaine interacts with other drugs liable to induce arrhythmias, including adrenaline, some otolaryngologists consider that combined use of topical cocaine with topical adrenaline (in the form of a paste or a solution) improves the operative field and may possibly reduce absorption."³

My practice is to use cocaine paste, which is given in the anaesthetic room, and then to inject the nasal mucosa with 1/80 000 adrenaline in the operating room at the beginning of surgery. There have been no documented problems with this method of sequential administration.

I agree with K E A Nicholson and J E G Rogers¹ that nasal surgery is rarely life saving and that a heightened awareness of the possible complications and interactions of the drugs being given is to be encouraged.

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1 Nicholson KEA, Rogers JEG. Cocaine and adrenaline paste: a fatal combination? *BMJ* 1995;311:250-1. (22 July.)

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3 BMA and Royal Pharmaceutical Society of Great Britain. *British national formulary* No 29. London: BMA, RPSGB, 1995:507.

Other aspects of anaesthetic technique may have added to danger

EDITOR,—We take issue with K E A Nicholson and J E G Rogers's conclusions regarding use of the combination of cocaine paste with adrenaline for preparing the nose before nasal surgery.¹ We agree that the recommended doses should not be exceeded, but the case for removing adrenaline from the mixture has not been made.

In cases 1 and 2 both children were given pre-medication of oral atropine, and the endogenous catecholamine concentration would therefore have been high because of anxiety. Anaesthesia was extremely light, and halothane, which predisposes to arrhythmias when used in combination with adrenaline, was used in both cases. The papavere-

tum given intramuscularly in case 2 would not have been effective at the time of the crisis. Both patients were breathing spontaneously and would have been hypercapnoeic. The insertion of cocaine and adrenaline paste and almost immediate use of instruments in the nose in a patient with high catecholamine concentrations, a respiratory acidosis, and circulating halothane is a recipe for arrhythmias.

Although the anaesthetic technique in case 3 cannot be faulted, the cocaine and adrenaline paste was inserted into the nose 25 minutes after induction of anaesthesia, at which time surgery can be presumed to have started and the nasal mucous membrane had been disrupted. The insertion of paste into the nose in these circumstances and the immediate use of instruments would force some of the mixture rapidly into the circulation, with the inevitable likelihood of serious arrhythmias.

The usual practice when using cocaine and adrenaline paste is to place it into the nose 10-15 minutes before induction of anaesthesia, during which time the patient's pulse is monitored. Experience shows that a certain period is required to obtain the full benefit of the paste in terms of vascular constriction and shrinking of the nasal mucosa. Although cocaine alone will produce some vasoconstriction and mucosal shrinking, the operating conditions are undoubtedly better when cocaine is combined with adrenaline.

The complications associated with the use of any drug can be avoided by not exceeding the correct dose and by giving the drug in the correct manner. When an interaction with other drugs—for example, anaesthetic agents—might be expected the anaesthetic technique used must take this into account.

On the basis of the three cases reported, the authors' condemnation of the use of cocaine and adrenaline paste is unjustified and the suggestion that its continued use may have medicolegal implications is unnecessarily alarmist.

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Inserting central venous catheters

Case for angiographically guided placement is not proved

EDITOR,—Andy Adam's editorial suggesting that long term central venous catheters (Hickman lines) should be placed only by interventional radiologists contains many errors that seriously weaken his argument.¹ His description of "traditional" surgical placement is incorrect: the lines are placed into the internal jugular vein or, less commonly, the cephalic vein and not, as he suggests, into the subclavian vein. The risks of arterial puncture in patients with coagulopathies is overstated, simply because coagulopathies should always be corrected before insertion of a central venous catheter, and the use of imaging does not exempt the operator from this requirement.

Adam states that the rate of arterial puncture is reduced when imaging is used. This is offset by the observation that the only death associated with placement of a catheter in one of the series that Adam cites in which catheters were placed by interventional radiologists occurred after arterial puncture in a patient with a coagulopathy.² Adam also states that the rate of misplaced catheters in a series in which imaging was not used was 6%.³ This is not strictly accurate as the study showed that use of ultrasound imaging to locate the subclavian vein

conferred no advantage over use of anatomical landmarks. The 6% rate of misplacement related to the whole study, including those patients in whom ultrasound imaging was used.

Imaging guidance does not "allow the procedure to be carried out under local anaesthesia and light sedation" as Adam suggests, as both surgical and blind percutaneous techniques can be undertaken this way. The use or lack of use of imaging has no bearing on the type of anaesthesia used. Moreover, it is the use of local anaesthesia and light sedation coupled with ingeniously designed catheters that converts placement of a central venous catheter from a surgical procedure to an outpatient procedure performed in a treatment room, not the skills of interventional radiologists.

Cardiologists, nephrologists, anaesthetists, intensivists, paediatricians, and many other groups are skilled in the techniques of venepuncture and the use of guidewires. In addition, small, portable ultrasound imaging devices specifically designed for imaging vessels and introducing catheters are available. With these devices the subclavian artery and vein can easily be distinguished and the vein punctured. Clearly, the skills required to place these lines are not unique to interventional radiologists.

Angiography facilities may not be as accessible as Adam suggests: they may not even be in the same hospital as the patient. It might be possible to show a cost benefit when placement in an angiography suite is compared with surgical placement, but we think that placement of routine catheters on the ward under local anaesthesia and sedation is the most economical option. Our success rate is 96%; we use percutaneous unguided techniques. There is no evidence that guided insertion is safer, cheaper, or more effective. We suggest that the "time for a new look" has not yet come.

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- 1 Adam A. Insertion of long term central venous catheters: time for a new look. *BMJ* 1995;311:341-2. (5 August.)
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Open technique has lower evidence of complications

EDITOR,—We disagree with Andy Adam's comments regarding the drawbacks of an open surgical technique for placing long term central venous catheters. It is our practice to place such catheters by using an open cutdown technique under local anaesthesia. We mainly use the cephalic vein, with fluoroscopic screening to ensure correct positioning. With this technique more than 800 catheters have been inserted over the past 10 years, for parenteral nutrition, antibiotics, and chemotherapy. The incidence of pneumothorax and injury to vessels at the root of the neck has been zero. These types of complications are seen when blind puncture techniques are used and were one reason for our change to an open technique. The bulk of our practice is the treatment of very sick patients with intestinal failure, who would tolerate such complications badly. Using our method, over the past 12 months we have failed to achieve central venous access in only two patients. We regard the open technique as a safe and reliable means of venous access that is well tolerated by our patients.

Adam seems to dismiss the surgical technique on the basis of a single study.² Without a systematic

appraisal of the literature there is a risk that important evidence of effectiveness may be missed, and this may bias the conclusions that are drawn.³ The references cited in the editorial do not include any randomised controlled trials, possibly because none exist. We would like to see evidence from more rigorous trials before we accept that one method is superior.

To solve the problem of lack of evidence regarding the techniques we recommend a systematic review of the literature. If doubt still existed then a randomised controlled trial comparing both methods of inserting catheters, including a cost analysis, would be appropriate.

The more important issue to be addressed is not the technique of inserting catheters but their subsequent care. Life threatening complications of central lines—namely, sepsis and central venous thrombosis—occur because of inadequate care. Patients should not be discharged until they or a designated person are competent to look after the line. This requires a great deal of professional skill and is a major factor in the success of the intestinal failure unit at Hope Hospital.

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- 1 Adam A. Insertion of long term central venous catheters: time for a new look. *BMJ* 1995;311:341-2. (5 August.)
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Difficulties are rare and do not correlate with lifespan of catheter

EDITOR,—We strongly support Andy Adam's view that imaging guidance and experience are necessary for the placement of Hickman-type catheters.¹ The first surgical insertions of Hickman catheters at the Royal Marsden Hospitals were described in 1979,² but over the past decade the anaesthetists have developed a comprehensive percutaneous venous access service, and they currently insert over 1000 lines a year. Dedicated theatre lists of up to 10 patients are eminently suitable for consultants to teach the technique to trainee anaesthetists.

Oncology patients are carefully worked up preoperatively: clotting function is optimised and the suitability of the site of insertion assessed. In complicated cases, in which there is chest disease or venous thrombosis, radiological investigations are performed with the full cooperation of the radiology department. The lines are inserted with a combination of good quality sedation for adults, general anaesthesia for children, safe doses of local anaesthetics, oxygen treatment, and full monitoring. Although serious complications are rare, full resuscitation back up is essential, as are recovery facilities after any procedure that requires sedation.³ The insertion technique has been described by Stacey *et al.*⁴ Fluoroscopic screening is used for each step of the procedure. A recent internal audit showed that an open venous cutdown technique was required in only one in 1494 insertions and may be necessary for paediatric patients and patients with a refractory coagulopathy.

The lifespan of the catheter is of vital importance after insertion; in two consecutive audits at the Royal Marsden Hospital it has been found to be 91 days in 545 mixed oncology patients and 122 days in 949 patients with gastrointestinal malignancy. In the second audit a relation was sought between difficulties in inserting the catheter