

Strategists argue that since Warsaw Pact forces are well equipped with chemical weapons possession by the North Atlantic Treaty Organisation provides mutual deterrence.²⁸ While the problems of verification remain unsolved and the military sees a role for chemical weapons there seems little reason for optimism.

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Training for coronary angioplasty

Demands a minimum of 125 procedures

In 1987 in the United States there were 638 coronary angioplasties compared with 857 coronary artery vein graft operations for every million of the population. Although the rate of coronary angioplasty in Britain (78 per million in 1987) is unlikely to match that in the United States, increasing awareness of the success of intervention in acute myocardial infarction¹ should expand the use of angioplasty. After successful thrombolysis the residual coronary artery stenosis still contains a large amount of thrombus and this, being soft, is particularly amenable to angioplasty.^{2,3} Fortunately, angioplasty does not need to be performed urgently even after thrombolysis. We thus do not need a round the clock service.^{4,5}

Training for angioplasty presents some unusual problems because it demands that physicians develop and maintain a high degree of manual skill. A recent report from the American College of Cardiology and the American Heart Association on training cardiologists in angioplasty suggests an initial minimum training of 125 procedures that should include 75 performed with the trainee as the primary operator.⁶ As the procedure carries an increased risk if performed by an operator who is not proficient doctors intending to train for coronary angioplasty should be established independent investigators in coronary angiography.

Most candidates for a British senior registrar post in cardiology will have acquired enough experience of coronary angiography to allow them to begin training in coronary angioplasty. But should all cardiology units training senior registrars offer training in coronary angioplasty, and would such a development be practicable and desirable?

Radiologists might be regarded as equally suitable to

perform coronary angioplasty. This arrangement would permit cardiologists more time for clinical cardiology but has the considerable disadvantage that complications of angioplasty must still be treated urgently by a cardiologist with or without a cardiac surgeon. Radiologists may perform the procedure, but a cardiologist must be present.

Within the present structure of higher training for cardiology, time could be made available for developing and maintaining angioplasty skills. There should be sufficient elasticity in both the year devoted to special interests and in that devoted to general medicine. Should we aim at developing doctors who specialise entirely in coronary angioplasty or should the procedure be seen as a part of the invasive cardiologist's skills?

It is unusual for British physicians to have to develop manual skills, and some will question whether a trainee can deal with direct referrals to outpatient clinics from general practitioners and develop and maintain the necessary skills for angioplasty. A cardiologist who practices angioplasty is more likely to determine accurately for a patient the pros and cons of angioplasty, drug treatment, or an operation. The view of a doctor working full time in angioplasty is probably more blinkered. None the less, it is superspecialists who will develop interventional cardiology further. The best policy in the immediate future will be to train all senior registrars in cardiology in coronary angioplasty.

National and international meetings have disseminated information about angioplasty using dramatic "live" demonstrations of the technique on closed circuit television. The British Cardiac Society sponsored a cardiovascular intervention workshop last year at The London Hospital employing

edited video tapes, and a group already exists—the British Cardiovascular Intervention Society—that could organise regular postgraduate programmes along these lines. As in the United States, such meetings will provide an essential forum for teaching and discussing new developments—such as lasers, stents, and atherectomy catheters—and are probably the cornerstone for training new and established practitioners alike.

The number of angioplasties in Britain has doubled yearly from 712 in 1984 to 4200 in 1987. A further increase to around 5500 occurred in 1988. Faced with this growth, consultant cardiologists will in future probably wish to practise angioplasty. Current and aspiring senior registrars should thus seriously consider fulfilling the American guidelines for acquiring this skill. On completion of the implementation of the recommended training programme most cardiologists will be competent to perform simple or single vessel coronary angioplasty procedures. More complex or multivessel lesions

may be best tackled by subspecialists.⁷ But the message is clear: an expanded well trained workforce is needed to tackle this growing workload.

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Hearing voices

May be normal but happens most commonly in schizophrenia and alcoholic hallucinosis

The experience of hearing voices that are not there occurs most commonly in schizophrenia and alcoholic hallucinosis. Occasionally it occurs in depressive illness, mania, or after damage to one of the temporal lobes, and very rarely it is a manifestation of hysteria. Under certain conditions it may also be a transient phenomenon in normal people. In most cases the characteristics of the voices enable doctors to distinguish among these various conditions.

Just over half of patients with schizophrenia will hear voices at some time in their illness.¹ The voices have a particular quality: they come from one or more unknown persons; they are recognised as different in tone from the patient's own voice; the sex of the speaker is usually identified; and whereas we normally think in the first person the voice usually uses the second or third person. The voices tend to increase if sensory input is restricted² or if the patient is aroused, angry, or tense.³ They usually decrease if the patient listens to meaningful and interesting speech² and, paradoxically, if he or she becomes drowsy.⁴ The voices are poorly localised in space,⁵ and even if they are localised there is no consistent lateralisation.⁶ Interestingly, schizophrenic patients who have been profoundly deaf since birth hear voices; on questioning, they may say that someone is communicating with them through sign language.⁷

Most studies have found nothing wrong with the hearing or intensity of auditory imagery in schizophrenic patients who hear voices,⁸ and the voices probably represent inner speech—that is, our own thoughts—which for some reason acquire an unaccustomed tone and grammatical form. Indeed, sometimes the voice echoes the patient's own thoughts as he or she thinks them—a phenomenon that is so characteristic that it is a first rank symptom of schizophrenia.⁹

Usually, the voices heard by schizophrenic patients will disappear along with the other symptoms once the patients have been treated with neuroleptics. Occasionally they persist despite adequate treatment, and in such cases it is worth enlisting the help of a clinical psychologist as simple procedures may sometimes diminish them. Such procedures

include wearing an earplug in one ear¹⁰ or encouraging the patient to identify the conditions that are most likely to make the voices disappear—for instance, resting.¹¹

Alcoholic hallucinosis is a variant of delirium tremens and is usually self limiting but may last for months rather than days. The chief symptom is hearing voices, and the voices have a different quality from those encountered in schizophrenic patients⁵: they are well localised; there is usually only one voice; the speaker of the voice is often identified; and meaningful noise and drowsiness cause them to increase. In general their sensory qualities are prominent, suggesting that unlike the voices heard by schizophrenic patients these voices are false perceptions of environmental sounds. In one study they generally coexisted with tinnitus, and the tinnitus preceded and outlasted the voices.¹² In another study patients with voices also experienced clicks and fluttering sounds, and the authors suggested that the voices were misinterpretations of real movements of the middle ear muscles.¹³ In general, the voices respond poorly to neuroleptics but clear if the patient remains abstinent.

Voices may be experienced by manic or depressed patients at the height of their illness. The content usually gives a diagnostic clue, reflecting the grandiose or self deprecatory mood of the patient. In addition, the quality of the voice is no different from a customary thought, a fact that is recognised by the patient and that psychiatrists call a pseudohallucination. The voices heard as an aura of temporal lobe epilepsy are usually accompanied by non-verbal hallucinations—for example, music—and the voice is usually of someone known to the person and is experienced as part of a complex personal reminiscence that includes visual hallucinations.¹⁴ Very rarely a patient with a severe personality disorder will report experiencing a stereotyped voice, usually of someone who is the focus of their anger; the patient may communicate with the voice and claim to see the person at the same time.

Finally, normal people may hear a voice when dropping off to sleep (the hypnagogic state), when tired, exposed to extreme sensory and social isolation, or at the height of a