LETTERS TO THE EDITOR

Timing of surgery following fractured neck of femur

EDITOR,—I am interested in the findings and suggestions of Grocutt *et al*¹ in their abstract. Having shown a relative risk of 39.5 for patients operated on out of hours, they quite rightly suggest that these patients are placed on routine operating lists without exception. Why then, having shown a relative risk of 3.84 in those patients operated on within 24 hours of admission, do they make the seemingly contradictory suggestion that they are still operated on "where possible, within 24 h of admission"? I presume that this is to remain in line with the recommendation of the Royal College of Physicians (RCP). The patients in the only paper referenced by the RCP in support of this statement were not standardised in terms of nursing care and physiotherapy. (Neither did this paper contain the information actually referred to by the RCP.) There are, however, two large studies which comment on this problem. A prospective study of some 538 patients² showed an increased mortality associated with a delay of greater than 24 hours from admission to surgery. The other, a retrospective analysis of 406 patients,³ found a mortality of 34% in those operated on within one day, which fell to just 5.8% for those taken to theatre on days 2-5 ($P = 0.00001$).

The evidence for early operation is not clear cut and the results of this study would support this argument. My concern is that in trying to improve on the often inadequate care we have offered in the past, we are focusing excessively on the relatively easy goal of getting these patients to theatre quickly. When poorly prepared patients admitted "out of hours" appear on the following morning's trauma list, it is easy to speculate that this is not optimum for the patient. We need rather to concentrate our efforts on good quality surgical management/preparation and properly conducted, more senior, anaesthetic assessment. These more difficult aims (also recommended by the RCP) will, I believe, serve our patients interests better.

PAUL FOSTER
University Department of Anaesthesia,
Manchester Royal Infirmary

- 1 Grocutt M, McCabe M, West R. Analysis of the care of patients with fractured neck of femur at 30 British hospitals: does timeliness of admission and treatment affect outcome [abstr]. *J Accid Emerg Med* 1996;13:148.
- 2 Davis FM, Woolner DF, Framptom C, Wilkinson A, Grant A, Harrison RT, *et al*. Prospective, multi-centre trial of mortality following general or spinal anaesthesia for hip fracture surgery in the elderly. *Br J Anaesth* 1987;59:1080-7.
- 3 Kenzora JE, McCarthy RE, Lowell JD, Sledge CB. Hip fracture mortality. *Clin Orthop Rel Res* 1984;186:45-56.

The authors reply:

You are correct to presume that we do not wish to contradict the RCP guidelines. We suggest that the emphasis in these guidelines is changed from "all patients with fractured proximal femurs be operated on within 24 hours and, where possible, on a routine daytime list" to "all patients with fractured proximal femurs be operated on during a rou-

tine daytime list and, where possible, this should be within 24 hours".

Our results support those of previous studies that have shown benefits with delay in operative intervention, but our sample size was relatively small and it is not known how long the delay should be before it becomes a disadvantage.

I agree that more research is needed to answer fundamental questions regarding the management of patients with fractured proximal femurs and to aid in the implementation of national standards of care.

The Audit Commission, The Royal College of Surgeons, our study, and those of others, all agree that nationally there is a wide range in the health care provision offered to patients with hip fractures. This in itself makes any meaningful comparisons between patient groups difficult.

I would urge that further research on this subject be urgently undertaken as the number of people reaching old age is due to rise exponentially over the next 50 years, especially in developing countries where there are the least resources.

MANDY GROCUTT
North Staffordshire Emergency Department,
Stoke-on-Trent, Staffordshire

Sarin

EDITOR,—We read with interest the article by A P Volans on sarin, giving guidelines on the management of victims of a nerve gas attack.¹ We would like to draw attention to a number of factual inaccuracies which have important repercussions for the contaminated casualties and those who treat them.

General

Chemical weapons can, from a clinical perspective, be divided into "fast actors" and "delayed actors". Fast actors include the cyanides and nerve agents, and their effects can be seen within seconds or minutes. The effects of delayed actors, such as phosgene (inhaled) and the mustards (skin contact), may not be seen for hours or days. From a military point of view fast acting agents are used to kill, whereas delayed acting agents are used to incapacitate. The terrorist wishes to induce acute panic and fear, and consequently the fast acting agents are appealing: this was demonstrated by the AUM Shinrikyo cult who used sarin, and attempted to use cyanide, in Tokyo.

Nerve agents

The nerve agents are powerful polar organic solvents and will penetrate most fabrics, including rubber over time.² The persistency of all these agents can be enhanced by using thixotropic (thickening) agents. However, as the persistency increases the volatility decreases—for example, in a spring temperate climate a thickened agent, "VX", provides a minimal inhalation threat, but can be lethal if touched without protection.

The main routes of absorption of these agents are through the respiratory system or the skin (whether there are breaks in the skin

or not). Meiosis will only occur if their is direct corneal exposure to vapour. If a nerve agent contaminates a wound following coating of a missile fragment, the result is usually death.³

As Volans says, the nerve agents are different in structure to the organophosphates used as pesticides—one should be careful, therefore, not to make assumptions regarding the long term effects following nerve agent exposure based on the clinical experience with pesticides.

General management

The current military management of suspected nerve agent poisoning is not quite as Volans suggests. Prophylaxis is indeed with oral pyridostigmine 30 mg eight hourly, but first aid treatment is with a combination of atropine 2 mg, pralidoxime mesylate 500 mg, and avizafone 10 mg (equivalent to 5 mg diazepam) given intramuscularly through a Combopen.

Casualty decontamination is by removal of the casualty's clothing, or individual protection equipment (IPE) when worn, and the use of a detergent and bleach solution. Fuller's earth is *not* used because of its cytotoxic effects.⁴ Advanced medical treatment follows the principles of the *Chemical warfare advanced life support* (CW ALS) system.⁵

Under no circumstances should a casualty be enclosed in a heavy plastic pouch as this will increase the amount of many chemicals absorbed through the skin, and in the case of nerve agents will rapidly lead to severe poisoning and probable death.

If the postoperative reports³ from the Iran-Iraq war can be believed, the aggressive use of atropine over a 20 to 30 minute period (titrated against clinical response), together with oximes, leads to a rapid recovery from even the most severe nerve agent poisoning. The requirement for assisted ventilation might therefore reflect a timid use of atropine in the primary resuscitation phase.

Chemical warfare advanced life support

The potential requirement to manage a large number of chemical casualties has been a problem for the defence medical services for many years, and this has led to the development of the CW ALS course concept in 1994. The course provides a systematic approach to the management of a chemical casualty, with teaching principles similar to those on an *Advanced life support* course or *Advanced trauma life support* course. At present this is only available to military medical personnel, although the principles could be equally applied by civilian medical staff.

Civilian approach

The civilian emergency services, including the vast majority of accident and emergency departments, are poorly prepared to manage a hazardous chemical major incident.^{6,7} No standard agreement exists between the fire and ambulance services to determine who is responsible for the scene management of contaminated and severely poisoned casualties. In

general, the health services (ambulance and hospital) have little or no equipment or training to deal with such casualties. If a Tokyo type incident occurred in the United Kingdom with a more efficient dispersal of sarin, the potential for morbidity and mortality among health care providers at all levels would be considerable.

The Defence NBC Centre and the Wiltshire hazardous material working group have, after discussion and field trials, developed a simple, comprehensive, and cost-effective co-ordinated response to the management of chemical casualties.⁸ The management concept is an aggressive response at the incident site(s), with a multidisciplinary approach resulting in decontamination and resuscitation on site; a backup decontamination facility is placed outside each A&E department, with the equipment and procedures being identical to those used at the site. The levels of protection stipulated for the site are chemical suits, butyl rubber gloves, and breathing apparatus for any medical staff within the inner cordon; at the hospital, A&E staff dealing with contaminated casualties require the same level of protection. If no direct contact will occur with contaminated clothing a double pair of surgical gloves may be used to undertake procedures, instead of the heavier butyl rubber gloves. It is recognised that national recommendations are being developed by the Ambulance Service Association chemical incident procedures subgroup.

MAJOR D MORGAN-JONES RAMC
Defence Nuclear, Biological and Chemical Centre,
Winterbourne Gunner, Wiltshire

MAJOR T HODGETTS RAMC
Military District Hospital Unit Frimley Park,
Camberley, Surrey

- 1 Volans AP. Sarin: guidelines on the management of victims of a nerve gas attack. *J Accid Emerg Med* 1996;13:202-6.
- 2 Clark KP, ed. *Chemical and biological handbook*. Royal Military College of Science, 1995.
- 3 Helm UK. *Triage of chemical casualties*. Bonn, 1991 (internal publication).
- 4 Cooper GJ, Ryan JM, Galbraith KA. The surgical management in war of penetrating wounds contaminated with chemical warfare agents. *J R Army Med Corps* 1994;140:113-8.
- 5 Robertson AG, Morgan-Jones DJ. First line nuclear, biological and chemical medical defence training: the way ahead. *J R Naval Med Service* 1994;80:90-4.
- 6 Baxter PJ. Major chemical disasters: Britain's health services are poorly prepared. *BMJ* 1991;302:61-2.
- 7 Thanabalasingham T, Beckett MW, Murray V. Report of a chemical incident from ethyldichlorosilane. *BMJ* 1991;302:101-2.
- 8 DNBCC and the Wiltshire Hazardous Material Working Group, 1995. Hazardous materials incidents: a guide to a co-ordinated response.

The author replies:

I am grateful that my article has been of interest to the experts in the military and beg forgiveness if the guidelines suggested are simplistic when compared with the highly trained response available within the Army.

It is not entirely clear that the factual inaccuracies mentioned do affect the likely response of the front line civilian services who would be called upon to respond in the event of a civilian attack.

I concentrated on sarin because (1) it is relatively easy to produce with school level chemistry and (2) it has been used by terrorists and there is therefore a precedent. I hope the recipe for VX is not available on the Internet!

Sarin is volatile and consequently, as seen in Japan, most victims suffered vapour exposure with primarily ocular symptoms.

It would appear that the contents of the "Combopen" and the indications for the use of Fuller's earth have been altered since the publication of my source literature.

I was not advocating the enclosure of contaminated victims within casualty pouches, merely suggesting that this is a possible response from the fire and rescue service, presented with contaminated victims of an undiagnosed type in a stressful situation. It would be understandable for them to pass the problem up the line to the receiving hospital.

I agree that the response of civilian services to any major chemical contamination incident is likely to be haphazard in the extreme. These are rare events in the United Kingdom and an individual region may have never tested their plans.

That the Army has recently developed a chemical warfare ALS suggests that their responses to the chaos of such an event were deemed less than perfect.

I look forward with interest to the dissemination of the coordinated response advised by the Defence NCB Centre but wonder if in the reality of an attack on the underground or one of the many enclosed shopping complexes in the UK, this response will occur before contaminated victims arrive in an unprepared A&E department on a Friday afternoon during rush hour.

The common perception of nerve gas injury involves a great amount of fear, with visions of NCB clad warriors dealing with lethally contaminated victims. My aim in writing the article was to show that the treatment of such victims is logical and beneficial and well within the abilities of any qualified doctor. I also wished to point out some of the practical difficulties and offer some suggestions as to their management and I am grateful to Major Morgan-Jones and Major Hodgetts for the additional information which has not so far not been generally available to the civilian practitioner.

A P VOLANS
Accident and Emergency Department, Royal
Hallamshire Hospital, Glossop Road, Sheffield

Deliberate self harm

EDITOR,—Ryan *et al*¹ present a valid case for the use of overnight observation wards in the management of deliberate self harm (DSH). From the data presented, the use of such wards reduces the need for psychiatric assessment of these patients.

My own experience of providing a DSH service which offers assessment to all patients who harm themselves would indicate that the provision of an observation ward improves the quality of psychiatric assessment and intervention. The contrast between working in casualty departments which do and do not admit DSH patients to an observation ward is often striking. Emergency assessments of DSH patients who are not deemed to warrant admission to a medical bed are frequently requested. In the absence of overnight observation beds, this often means attempting to address complex "multiple psychiatric and social problems" during the small hours of the morning, while the patient is still in crisis.

When DSH patients are admitted overnight, then a more meaningful assessment can be made the next morning, with full access to social and psychiatric support services. Patients will have had time to reflect upon recent events once they pass through a period of crisis. It is then possible to target appropriate interventions at those who will benefit most

and patients can leave hospital with the appropriate follow up arrangements already in place.

There are in excess of 100 000 annual DSH admissions in the United Kingdom, and some 15-20% of these patients will be readmitted within the following year.² The provision of appropriate psychosocial intervention has the potential to both reduce the demands put upon A&E departments through readmission and to improve the quality of patient care offered. I believe that observation wards facilitate this process and would urge A&E departments to consider their use in cases of DSH.

SIMON GILBODY
Academic Unit of Psychiatry, St James University
Hospital, Leeds

- 1 Ryan J, Clemmets S, Perez-Avila C. Managing patients with deliberate self harm admitted to an accident and emergency observation ward. *J Accid Emerg Med* 1996;13:31-3.
- 2 House A, Owens D, Storer D. Psychosocial intervention after attempted suicide: is there a case for better services? *Int Rev Psychiatry* 1992;4:15-22.

The authors reply:

Thank you for offering us the opportunity to reply to Dr Gilbody's comments on our paper. We are encouraged that an academic unit of psychiatry supports the use of an A&E observation ward in the management of deliberate self harm patients. Continued research in this area is important and we now keep a database of all patients who attend following an episode of DSH and are managed by the multidisciplinary team. Analysing these data base has stimulated us to look at other areas such as out patient detoxification, the association of DSH with drug dependency, and the management of frequent offenders, all of which can be appropriately managed by an experienced multidisciplinary team based in an A&E department.

We concur with Dr Gilbody's statement that an observation ward can improve the quality of patient care; however, further research is required in this area to assess the long term impact of such a practice. Those of us working in A&E medicine are in a unique position to be able to study this further and should not neglect our academic responsibilities.

JOHN RYAN
SUE CLEMMETT
CARLOS PEREZ-AVILA
Accident and Emergency Department, Royal Sussex
County Hospital, Eastern Rd, Brighton

Dogs, epilepsy and airways. The dog always wins!

EDITOR,—Injuries caused by dog bites are common and as many as 3 per 1000 population may attend accident and emergency (A&E) departments in any one year.¹ Epilepsy is also a common cause of attendance, with a prevalence in the population of 3%. However, it is rare that both problems will occur in the same patient at the same time.

Patient 1 was a 20 year old male with unstable epilepsy who had owned a large, but friendly, German Shepherd for a number of years. Unfortunately on the first occasion that the dog witnessed his master having a seizure it became frightened and attacked the man's throat, causing a fracture of the thyroid and cricoid cartilages and puncturing the trachea. He presented to accident and emergency as a postictal airway obstruction requiring an emergency tracheostomy.