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.

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- 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.

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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