LETTERS TO THE EDITOR

Bedside emergency department ultrasound

EDITOR,—We were interested to read the “for debate” articles on ultrasound performed by accident and emergency (A&E) physicians. There seemed to be more support from the radiologists than from the A&E authors for this potential service development.^{1,2}

As advocates of bedside emergency ultrasound, we suggest the case for or against ultrasound examinations by A&E staff should take both a hospital and an A&E perspective. The primary step in any evaluation is to show an investigation such as ultrasound can be performed safely and appropriately in our departments. Once this had been done, studies can be conducted to determine its contribution to clinical practice.

A&E indications for focused ultrasound include: free abdominal fluid following blunt trauma, cardiac tamponade, confirmation of intrauterine pregnancy in the first trimester, sonographic Murphy's sign in gallbladder disease, hydronephrosis in renal colic and abdominal aortic aneurysm. At King's, trained A&E physicians perform a limited scan to answer specific questions. The use of ultrasound in this regard is as an extension of the clinical examination to reach a diagnosis and initiate appropriate management. If a comprehensive scan is required, the patient is referred to the radiology department.

Radiological support for A&E ultrasound reflects the findings of a recent survey (unpublished) in which 25% of radiology clinical directors supported the concept of ultrasound performed by A&E doctors. This early endorsement is encouraging. The requirement for adequate training, skill maintenance and audit is common to many areas of clinical practice.

In a recent introductory two day ultrasound course at King's for emergency physicians, we found that interpretation skills are learned rapidly with pre-course and post-course testing indicating an improvement from 42% (SD 17.3) to 71% (SD 13.3). This is only the beginning of the learning process, but it supports the clinical findings that emergency physicians can be trained to perform bedside ultrasonography. A recent publication³ has confirmed the view that emergency physicians have a particularly steep learning curve when using ultrasound for a specific finding. It is suggested that as few as 10 scans may be sufficient to become competent at detecting free fluid following blunt abdominal trauma.

With regard to skill maintenance the actual number of scans performed per physician per day has not been established, but neither has the number of trauma resuscitations per physician per day. At King's in a department with 80 000 new patients per year, we could be performing 10 ultrasound scans per day. Each scan takes 5–10 minutes and assists in determining the management plan for the patient with perceived benefit with regard to time in the department and further investigations. Early impressions in patients with blunt abdominal trauma are that A&E ultrasound reduces the time for patients to proceed to

theatre and also reduces the number of CT scans requested. This is currently being quantified.

The cost of a suitable ultrasound machine to perform these tasks is approximately £20 000. The longevity of such a machine is approximately 10 years. With very low maintenance costs, the principal revenue expense relates to training. Any service development involving acquisition of new skills requires an investment in training.

The question facing our specialty in the UK is whether limited ultrasound examination performed by A&E physicians has net benefits for patient care and service efficiency. We need to increase the understanding within the specialty of the limited nature of the study we are encouraging. Once it is in use in several units it will be possible to attempt to unravel the more complicated issues regarding health economics and patient versus hospital value. It may not be possible yet to quantify the benefits from ultrasound performed by A&E physicians in the UK, but there can be little doubt about the enthusiastic interest from colleagues.

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- 1 Robinson N, Clancy M. Should UK emergency physicians undertake ultrasound examinations? *J Accid Emerg Med* 1999;16:248–49.
- 2 Burnett H, Nicholson D. Current and future role of ultrasound in the emergency department. *J Accid Emerg Med* 1999;16:250–4.
- 3 Shackford SR, Rogers FB, Osler TM, et al. Focused abdominal sonography for trauma: the learning curve for nonradiologist clinicians in detecting haemoperitoneum. *J Trauma* 1999;46:553–64.

The millennium celebrations, deliberate self harm. Our experience

EDITOR,—We undertook a survey of deliberate self harm and neuropsychiatric presentations to our accident and emergency department over the millennium period (15 December 1999 to 14 January 2000). This was to see if the celebrations had any effect on the incidence of DSH and psychiatric illnesses presenting to our department.

The figures for deliberate self harm in 1999/00 were collected prospectively, and then compared with available data for the same period in 1998/99. The results are shown in tables 1 and 2.

Table 1 Total attendance of deliberate self harm for study periods

	Total adults	Total deliberate self harm	% Of total
1998/1999	2234	86	3.8
1999/2000	2230	74	3.3

Table 2 Age and sex distribution of patients with deliberate self harm

Age	1998/99		1999/00	
	Male	Female	Male	Female
<24	11 (21.1)	10 (29.4)	15 (36.6)	6 (18.2)
25–40	31 (59.6)	15 (44.1)	20 (48.8)	17 (51.5)
41–65	9 (17.3)	9 (26.5)	6 (14.6)	8 (24.2)
>65	1 (1.9)	0 (0)	0 (0)	2 (6.0)
Total	52	34	41	33

Percentages are shown in parentheses.

The incidence of deliberate self harm for the millennium period was not significantly different from that of the previous year. The highest incidence was in the 25–40 age group.

A previous psychiatric history was established in 36% and 56% of the patients in the years 98/99 and 99/00 respectively. In 98/99, 50% of these patients had previous history of deliberate self harm this compared with 58% in 99/00.

Alcohol played a significant part in many of the patients. One patient died in the 1999/00 study, but none in 1998/99. This patient took a large amount of dothiepin. He was asystolic on arrival and all resuscitative measures failed.

For the period 1999/00, single substance overdoses were commoner than overdoses on cocktails. The commonest drugs being selective serotonin re-uptake inhibitors closely followed by paracetamol preparations. Deliberate self lacerations were few in number.

The celebration of a new millennium did not significantly increase the incidence of deliberate self harm in our practice. This is in line with the experience of many units across the United Kingdom where figures for attendance for all categories of patients did not significantly change for that period of year. Most incidents occurred in a group that is already well represented at other times of the year—that is, known psychiatric patients with previous history of deliberate self harm.

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Death with dignity in the accident and emergency short stay ward

EDITOR,—Many uses for the accident and emergency (A&E) short stay ward have been proposed, ranging from the management of head injury to the care of self poisoned patients.^{1,2} Since the opening of our new facility in November 1998 we have, on nine occasions, admitted patients to a sideroom of our short stay facility for palliative care. We propose that the short stay ward can offer a sensitive and dignified setting for the dying patient. Details of these patients are listed in table 1.

In all these cases the patient presented to the A&E department either with an emergent disorder or with the acute decompensation of a pre-existing condition.

In each case consensus was reached between the duty A&E consultant and inpatient specialty team that the patient's death was imminent and active intervention was not appropriate. The patient was then, after discussion with family members admitted to a sideroom of the short stay ward. This use of the short stay ward permits continuity of care by both medical and nursing staff. In addition

Table 1

Diagnosis	Age	Duration of stay (h)
Post EMD arrest, metastatic bronchial carcinoma	60	3.5
Dissection thoracic aortic aneurysm	83	1.2
Massive intracerebral bleed	72	4
Acute on chronic respiratory failure	79	5.4
Severe head injury—not amenable to neurosurgery	85	1.2
Left sided pneumothorax, respiratory failure, previous multiple CVAs	67	5
Post-community VF arrest	86	2
Overwhelming sepsis, aplastic anaemia at presentation	57	0.6
Massive intracerebral bleed	59	3.5

it obviates the need for repeated intrusive examination and documentation.

We have found the short stay can offer privacy for patients and relatives permitting the prompt delivery of appropriate palliative care. In our experience this approach was greatly appreciated by patients and their families.

The importance of palliative care continues to receive attention with the development of many novel approaches in both primary care and hospital medicine.³ We advocate the judicious and sensitive use of the A&E short stay ward for this purpose and propose that it compares favourably with admission to busy medical or surgical admission wards.

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1 Goodacre SW. Role of the short stay observation ward in accident and emergency departments in the United Kingdom. *J Accid Emerg Med* 1998;15:26–30

2 Khan SA, Millington H. Benefits of an accident and emergency short stay ward in the staged hospital care of elderly patients. *J Accid Emerg Med* 1997;14:151–2

3 Robinson L, Stacy R. Palliative care in the community: setting practice guidelines for primary care teams. *Br J Gen Pract* 1994;44:461–4.

Aortic injury review failed to mention the “osseous pinch”

EDITOR,—The article by Reid *et al*¹ contains an interesting case report of aortic rupture resulting from low velocity crush injury, followed by a literature review of the possible mechanisms of aortic disruption. Unfortunately, however, their literature review is incomplete. It fails to mention the “osseous pinch” theory of traumatic aortic rupture.^{2,3} The “osseous pinch” mechanism proposes that as a result of massive forces, the thoracic aorta ruptures as the first rib and clavicle “swing down” to “pinch” the aorta.^{2,3} The theory neatly provides an explanation as to why thoracic aortic disruption nearly always occurs at the same point (the junction of the arch with the descending part) as this is the point that has been shown radiologically to feel the “pinch”. The “osseous pinch” pro-

vides an attractive explanation for the mechanism of aortic rupture in the case described by Reid *et al*¹ as this explanation would account for the rupture in the absence of massive deceleration forces.¹

Reid *et al*¹ also suggest that their case report justifies low velocity crush injury causing aortic injury being added to the ATLS manual. However, the ATLS manual does not claim to be an exhaustive tome, but a practical guide to cover common situations.⁴ The fact that this isolated case was published as a report underlines that it is unusual; certainly, previously large studies demonstrate that thoracic aortic rupture most commonly follows high velocity impacts.⁵

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1 Reid C, Livesey SA, Egleston CV. Aortic rupture as a result of low velocity crush. *J Accid Emerg Med* 1999;16:299–300.

2 Crass JR, Cohen AM, Motta AO, *et al*. A proposed new mechanism of traumatic aortic rupture. The osseous pinch. *Radiology* 1990;176:645–9.

3 Cohen AM, Crass JR, Thomas HA, *et al*. CT evidence for the “osseous pinch” mechanism of traumatic aortic rupture. *Am J Radiol* 1992;159:271–4.

4 American College of Surgeons Committee on Trauma. *Advanced trauma life support program for doctors*. 6th ed. Chicago: American College of Surgeons, 1997.

5 Wyatt JP, Longman R, Beard D, *et al*. Thoracic aortic injuries in South East Scotland. *European Journal of Emergency Medicine and Intensive Care* 1997;20:141–4.