LETTERS TO THE EDITOR

General Medical Council registration

EDITOR,—In August last year, we experienced difficulties in obtaining General Medical Council (GMC) registration for several doctors in their first senior house officer post at the Lister Hospital, Stevenage.

In the accident and emergency (A&E) department this meant that the doctors involved could not treat and discharge patients. The confirmed registrations were available late on the second day of the doctors' jobs. No locums were required. However obtaining confirmation involved considerable time and caused unnecessary stress to the doctors, departments, and medical staffing officers concerned.

To assess the extent of the problem a sample of hospitals' medical staffing departments in North Thames was contacted by telephone. A standard set of questions was asked regarding problems with GMC registrations, any locums required, and how much medical staffing time was spent in dealing with the situation.

Replies were received from 23 hospitals. Over half of them had telephoned the GMC on 4 August to confirm registrations. In our sample, no locums were required but a considerable amount of time was spent by medical staffing departments and the doctors themselves in obtaining this confirmation. If representative this has major manpower implications nationwide. The factors causing delays were: (i) incorrect doctors' addresses; (ii) cheques not clearing; and (iii) GMC workload (as one medical staffing worker stated "They said they were having a hectic day and their computer had crashed").

Those hospitals affected arranged for doctors without appropriate registration to either "shadow" other doctors in their departments until confirmation was received or attend induction courses.

We should like to raise the following points:

- Why are certificates of satisfactory completion of house jobs only obtainable in the last month of the job?
- Do these certificates need to go back to the medical school before going to the GMC? (Provisional registration implies having completed a medical school degree!)
- Could GMC registrations be phased throughout the year to avoid the rush for the August deadline? A house officer having satisfactorily completed a first post and the first two to three months of the second, could reasonably "set the wheels in motion" for full registration, pending completion of the second post.

As the GMC has approximately 4000 applications for provisional and 4000 for full registration every year¹ some delays are inevitable. However, as the volume of the workload is predictable, there must be a way to ease the pressure on the GMC, medical staffing departments, and junior doctors in the month of August each year.

Recent correspondence with the head of Operations of the Registration Directorate at the GMC informs us that a review of the service provided last summer is being conducted,

and improvements will be implemented where possible.

This is a problem which commonly affects A&E departments because of the high turnover of junior staff and the fact that it is, for many doctors, their first senior house officer post. This is compounded by the nature of the work in A&E and lack of 24 hour senior supervision in many departments, which means that senior house officers without full GMC registration are in practice unable to make any useful contribution to patient care.

We would be interested to know if colleagues have had similar difficulties and would welcome suggestions for dealing with this problem.

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1 General Medical Council. *General Medical Council annual review*. London: GMC, 1998: 13-16.

Carbon monoxide poisoning and hyperbaric oxygen

EDITOR,—Unfortunately, by restricting their analyses to hydrogen ion concentration alone, the authors of this paper may not have demonstrated that metabolic acidosis occurred in the patients they describe.¹ Raised hydrogen ion concentration is indicative of acidemia. Without data on other acid-base variables the aetiology must remain elusive. Repeating the study looking at actual or standard base deficit may well solve this problem. Unconsciousness leading to airway compromise is one example of how the acidemia described could be respiratory in origin.

I agree with the authors that the most significant effect of carbon monoxide poisoning is the development of a cytotoxic hypoxia and hence intracellular acidosis. It is, however, somewhat simplistic to assume that plasma hydrogen ion concentration alone correlates with the degree of intracellular carbon monoxide damage. The buffering capacity of the blood can vary widely under a variety of clinical conditions.

These patients also have other possible aetiologies for acid-base derangement. Salicylate poisoning is well described as evoking both metabolic acidosis and respiratory alkalosis. This does not appear to be corrected for in the analysis. Other poisons common to suicide attempts such as ethyl alcohol also may provoke metabolic acidosis. The authors make no comment on other possible confounding causes of acid-base abnormality.

I agree with the authors that measurement of carboxyhaemoglobin (COHb) concentration is useful only as an indication that carbon monoxide poisoning has occurred. A series of intensive care patients treated for carbon monoxide poisoning at the same hospital in 1996/7 actually demonstrated a negative association between initial COHb concentration and outcome²: patients who died or suffered permanent neurological impairment had a mean initial COHb of 31.45% and patients who fully recovered had a mean initial COHb of 46.48%.

This paper is useful as it draws attention to the falsehood that the initial COHb is helpful in determining the severity of carbon monoxide poisoning. A reliable measure of intracellular acidosis is required. Presently, probably the best that can be done is to use recognised blood gas measures of metabolic acidosis (of which hydrogen ion concentration alone is not one) and possibly serum lactate estimation. Neither of these is specific to carbon monoxide poisoning. Severe derangement of either or both of the above will, at least, identify the most unwell.

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- 1 Turner M, Esaw M, Clark R. Carbon monoxide poisoning treated with hyperbaric oxygen: metabolic acidosis as a predictor of treatment requirements. *J Accid Emerg Med* 1999;16:96-8.
- 2 Thomas R. Hyperbaric oxygen treatment of severe carbon monoxide poisoning in intensive care patients: the first eight months experience of the new hyperbaric facility at Royal Hospital Haslar. Presented at Tri-service Anaesthetic Meeting, Royal College of Anaesthetists, November 1997.

The authors reply

The potential for respiratory acidosis and the influence of salicylates have been addressed in paragraph 3 of our results.¹ We reported that there was no significant difference between the mean partial pressures of carbon dioxide in the two groups, confirming that any differences were due to metabolic, rather than respiratory, acidosis. In addition we reported the salicylate levels in the multiple treatment group. The hydrogen ion activity is, by definition, the cardinal feature of acidosis. The actual and standard base deficits are figures derived from the hydrogen ion concentration and partial pressure of carbon dioxide. We have therefore reported the primary measurements rather than derived figures.

Direct measures of intracellular acidosis would indeed be very interesting but are far from being clinically available in the accident and emergency department. Hydrogen ion activity in blood is a universally and rapidly available investigation, indicative of a patient's overall acid-base status.

The data Dr Thomas mentions are potentially interesting and clearly support our contention that COHb is an unreliable measure of severity of poisoning. The observation in his series that the patients who died or suffered permanent neurological impairment had a lower mean initial COHb than those who recovered could be explained by a delay in measurement or differences in first aid treatment (for example 100% oxygen) before COHb measurement. The types of exposure may also have differed; a long exposure to a low concentration of carbon monoxide would lead to a lower COHb but a higher tissue burden, than a short exposure to a higher concentration. As reported in our review article Dr Martin Hamilton-Farrell has observed a higher incidence of residual neurological abnormality in those patients suffering long duration or multiple exposures.² The numbers of patients studied and a statistical analysis to ascertain the significance of the difference in the mean COHb levels is clearly fundamental. The methodology by which patients were assessed after treatment is also important as subtle neurological abnormality may be

missed by a routine clinical examination. It would be interesting for these data to be subjected to peer review so that they may be more thoroughly evaluated by a wider audience.

- 1 Turner M, Esaw M, Clark RJ. Carbon monoxide poisoning treated with hyperbaric oxygen: metabolic acidosis as an indicator of treatment requirements. *J Accid Emerg Med* 1999;16:96–8.
- 2 Turner M, Hamilton-Farrell MR, Clark RJ. Carbon monoxide poisoning: an update. *J Accid Emerg Med* 1999;16:92–6.

Pre-hospital nalbuphine analgesia

EDITOR,—I read with interest the paper by Houlihan *et al.*¹ I thus ask the question why they did not continue to use nalbuphine as the analgesic in their accident and emergency unit? It is a drug that has been around since 1963 with only about 80 or 90 adverse reactions and no deaths ever related to this analgesic. Its dosage has been described as up to 200 mg without adverse effects. One would have thought that in cases 1 and 2, if their patients required further analgesia, they could have continued with a 20 mg or 40 mg dose as needed to control the pain, without resorting to opiates.

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- 1 Houlihan KPG, Mitchell RG, Flapan AD, *et al.* Excessive morphine requirements after pre-hospital nalbuphine analgesia. *J Accid Emerg Med* 1999;16:29–31.

The authors reply

We read with interest Dr Jones' comments on our article. We agree that nalbuphine is a potent analgesic agent with few adverse effects and no reported fatalities. Nalbuphine has gained wide acceptance in a variety of clinical situations including the field of pre-hospital care. We acknowledge that it is possible to persevere with nalbuphine when additional analgesia is required after arrival in hospital, but it is our experience that the treatment of moderate to severe pain more commonly includes the administration of intravenous morphine and related opioids which are titrated to gain rapid and effective pain relief. This policy is adopted by the majority of clinicians involved in treating acute medical and surgical emergencies in our area. The prime objective of our article was to report excessive morphine requirements in certain patients who had received nalbuphine before arrival at hospital. This phenomenon has been previously discussed but only as a theoretical occurrence and had not been reported in practice. We contend that our experience merits discussion and additional evaluation of policies of analgesia administration.

Securing intercostal drains

EDITOR,—The method of securing chest drains described by Boyle using a 1cm cylinder of portacath tubing provides a simple technique for adjusting the position of an intrapleural drain.¹ However, the commonest reason for a chest drain "falling out" is that an inadequate bite of tissue is taken with an anchoring suture of inadequate tensile strength. It is not commonly due to poor knot tying by inexperienced clinicians. As a further simplification of the method described, if the

chest drain is moved to one end of the chest wall wound, a single suture (for example a No 1 Ethilon suture on a curved hand held needle) secured as described by Boyle would hold the drain in situ perfectly adequately. If this single anchoring suture were tied flush thus approximating the skin against the intercostal tubing, then any potential air leak at skin level (should it prove necessary to apply high flow low pressure suction) would be obliterated. The remainder of the chest wound can then be closed with simple interrupted sutures of the clinician's choice.

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- 1 Boyle A. Securing intercostal drains. *J Accid Emerg Med* 1999;16:239.

Ectopic pregnancy

EDITOR,—The diagnosis of ectopic pregnancy continues to present a challenge to the emergency physician as reliance on the standard history and examination is insufficiently sensitive. Early diagnosis and referral limit the morbidity and mortality associated with this potentially life threatening condition, which accounts for 8% of all maternal deaths.¹ Previous studies have shown that only 33%–53% of cases are diagnosed correctly on initial presentation.^{2,3} Clancy and Illingworth have suggested that incorrect diagnoses were made either because ectopic pregnancy was not considered or because relevant symptoms and signs were overlooked.³

Dart *et al* identified findings in both the history and physical examination that were predictive.⁴ Pain that was moderate to severe, lateral in location, and/or sharp in nature was important. The presence of an intrauterine contraceptive device within the previous year, a history of infertility, pelvic surgery, or tubal ligation were also noted to be predictive for ectopic pregnancy. The presence of cervical excitation, lateral or bilateral abdominal tenderness, lateral or bilateral pelvic tenderness, and positive peritoneal signs were important in the examination. However no constellation of findings resulted in a highly reliable diagnostic tool. The most important of these signs were the history of tubal ligation (odds ratio 18.0) and the presence of positive peritoneal signs (odds ratio 7.9).

We performed a retrospective case note review of all patients attending the West Middlesex University Hospital accident and emergency department between January 1994 and June 1998 (55 months) in whom an ectopic pregnancy was subsequently confirmed. We looked in detail at those in whom there was a delay before diagnosis using an evaluation questionnaire to assess the clinical findings.

Of 109 patients, 70 (64%) cases of ectopic pregnancy were correctly diagnosed at first presentation. In the remaining 39 cases (36%) the most common historical features leading to a diagnostic delay were the absence of pain or the poor localisation of that pain. The most common atypical findings were the absence of cervical excitation and adnexal tenderness. The most common initial misdiagnosis was miscarriage.

The diagnosis of ectopic pregnancy continues to be difficult, mainly because the symptoms and signs often do not fit a recognised pattern. In particular the presence of abdominal pain is considered to be impor-

tant in the diagnosis of ectopic pregnancy, as is adnexal pain and cervical excitation. Doctors may not consider the diagnosis of ectopic pregnancy when any one of these features is absent. The diagnosis must always be considered in pregnant patients who have yet to have an intrauterine pregnancy confirmed on ultrasound scan. It is essential that the presence, location, and nature of pain is fully elucidated. In addition, a history of tubal surgery should always be sought.

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- 1 Department of Health and Social Security. Report on confidential enquiries into maternal deaths in the United Kingdom 1988–90. London: HMSO, 1994;6:66–7.
- 2 Gilling-Smith C, Panay N, Wadsworth J, *et al.* Management of women presenting to the accident and emergency department with lower abdominal pain. *Ann R Coll Surg Engl* 1995;77:193–7.
- 3 Clancy M J, Illingworth RN. The diagnosis of ectopic pregnancy in an accident and emergency department. *Arch Emerg Med* 1989;6:205–10.
- 4 Dart RG, Kaplan B, Varaklis K. Predictive value of history and physical examination in patients with suspected ectopic pregnancy. *Ann Emerg Med* 1999;33:283–90.

Foreign body in the throat

EDITOR,—A 1 year old baby girl was brought to the accident and emergency (A&E) department of Bishop Auckland General Hospital with a history of "swallowing" a ring that she and her 4 year old sister had been playing with. She had difficulty in breathing with choking, coughing, and blueness of the face.

She arrived in the A&E department in a distressed condition with the mother holding her head down as this eased her breathing. Portable radiography of the chest and neck revealed a radio-opaque foreign body (ring) lodged in the upper respiratory tract (fig 1). Back slapping and attempted finger sweep of the mouth and throat was unsuccessful. The child was kept in the head down position until a general anaesthetic could be administered and the ring retrieved from her pharynx.

Figure 1 Radiograph showing ring in the child's throat.