ground.² Damage to the mitral valve may occur when the heart is violently compressed at the end of diastole, when the left ventricle is full.³ This may cause rupture of the chordae tendineae or papillary muscles or damage to the valve leaflets themselves.⁴ In severe cases symptoms may occur directly after the injury, but in some cases they may be delayed for several years.⁵

Our patient's posterior mitral valve prolapse was probably due to damage to the chordae tendineae sustained during the crush at the football ground. Such cases have medicolegal implications as mitral valve surgery may become necessary.

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SIR,—I must correct an error in James Wardrope and colleagues' article on the Hillsborough tragedy, which claimed that the South Yorkshire Metropolitan Ambulance and Paramedic Service gave no notification to the Northern General Hospital that a major incident was taking place.¹ The hospital was notified of a major incident at about 1525 hours, before any casualties arrived. That information was given, in person, by an ambulance-man to a member of the hospital staff, who appeared to act on it. Any suggestion that the hospital had not received notification is therefore incorrect.

With regard to the part of the discussion headed "implications for disaster planning," this service made formal representations at Lord Justice Taylor's inquiry and was instrumental in introducing legislation to increase the emergency provision in football stadiums.

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1 Wardrope J, Ryan F, Clark G, Venables G, Courtney Crosby A, Redgrave P. The Hillsborough tragedy. *BMJ* 1991;303:1381-5. (30 November.)

Low blood pressure, low mood?

SIR,—John A Pilgrim and colleagues' paper looking at the relation between low blood pressure and low mood¹ and Anthony Mann's accompanying editorial² prompted me to examine data from a study investigating the relations of aspects of pregnancy with psychological and psychosocial

factors. The study is of women expecting their second child and includes completion of a hospital anxiety and depression scale³ at 20-22 weeks' gestation. This scale correlates well with the general health questionnaire used in the Whitehall II study.⁴ Measurements of blood pressure taken around this time are available from hospital case notes. I defined low blood pressure as the lowest quartile of both systolic and diastolic blood pressures (systolic <110 mm Hg and diastolic <65 mm Hg) and low mood as a score of >7 on either subscale of the hospital anxiety and depression scale.

Although a higher proportion of women with low blood pressure experienced low mood, the association was not significant ($\chi^2=0.87$, df=1). There were, however, apparent associations of low blood pressure and low mood with low birth weight and preterm birth (table). The odds ratios for the cells for low blood pressure and low mood in the table were 4.76 (95% confidence interval 1.36 to 16.72) for low birth weight and 5.33 (1.71 to 16.69) for preterm birth.

These associations may be multiply confounded—for example, by smoking—and analysis of these data is continuing. Nevertheless, these observations in a relatively young sample of pregnant women (average age 25.6 (SD 3.2) years) provide a further argument for better understanding of the relation between low blood pressure and low mood.

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Unexpected problems with patient controlled analgesia

SIR,—Patient controlled analgesia has become a routine part of the management of postoperative pain. After new equipment was introduced into this hospital we audited the patient controlled analgesia service. Twenty one patients receiving patient controlled analgesia after elective surgery were visited in the recovery room and daily in the ward until the analgesia was stopped. Although most of the patients were satisfied with their analgesia, several unexpected problems were found.

A 58 year old woman, who initially used her analgesia pump without any problems, was later found to be comatose, unresponsive to sternal pressure, and with fixed, dilated pupils and a respiratory rate of 8 breaths/minute. After treatment with naloxone she recovered. She later explained that she had believed the demand button for patient controlled analgesia to be the nurse call device and had been pressing it repeatedly. Patient controlled analgesia was stopped, and she recovered uneventfully.

After the syringe is changed the settings on the analgesia pumps (Lifecare, Abbott Laboratories) need to be confirmed. In three cases the four hour limit was incorrectly set at 1 mg (twice by a house officer, once by junior nursing staff). Patients therefore received inadequate analgesia despite repeatedly pressing the demand button.

During the postoperative period patients are moved about, and on these occasions the machine is unplugged from the mains. In three cases the mains supply was not reconnected and the back up battery supply was later found to be almost exhausted.

These problems indicate the need for careful monitoring and supervision of patients receiving patient controlled analgesia. Measures have now been taken to improve staff's and patients' understanding of patient controlled analgesia and its equipment. Clearly, the introduction of a patient controlled analgesia service demands more than simply buying the equipment.

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Ocular injuries from boxing

SIR,—In his editorial on ocular injuries from boxing David McLeod mentions that the Boxing Board of Control has visual standards below which no one is allowed to hold a professional licence.¹ Another part of the same regulation excludes any boxer who has suffered any intraocular pathology, including a retinal hole, tear, or detachment. This exclusion has been vigorously opposed by, among others, McLeod, who has stated that a repaired retina is stronger than even a normal retina and someone with a repaired retina is not predisposed to any other intraocular injury, such as has occurred with a professional boxer who has recently been treated. I can find no papers to confirm McLeod's assertions and would be interested to hear of any.

McLeod asks whether the boxing board has the courage and clout to stage a longitudinal study of the effectiveness of any preventive measures. As the board's chief medical officer I would be pleased to cooperate in any study aimed at preventing eye injuries in the ring and at establishing the correct procedure for dealing with the results of eye damage provided that funds—which, sadly, the Boxing Board of Control does not have—were made available.

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1 McLeod D. Ocular injuries from boxing. *BMJ* 1992;304:197. (25 January.)

Diagnosing Alzheimer's disease

SIR,—Minerva¹ reports the findings of Burns *et al* that around a fifth of patients with Alzheimer's disease are misclassified by computed tomography.² In their paper Burns *et al* wrote, "Although single photon emission tomography and magnetic resonance imaging can give more detailed information about cerebral function and structure, these are more arduous for the patient and [computed tomography] remains the most applicable in the clinical practice of old age psychiatry." They state this even though 40 of 178 patients with Alzheimer's disease were unable for various reasons to have computed tomography.

We have just completed a pilot study looking at the ability of magnetic resonance imaging and single photon emission tomography to differentiate

Proportions of women giving birth to low birthweight babies and preterm babies by blood pressure and mood

	Low mood		Not low mood		All patients	
	No (%) with low birth weight	No (%) with preterm birth*	No (%) with low birth weight	No (%) with preterm birth*	No (%) with low birth weight	No (%) with preterm birth*
Low blood pressure	3/26 (11.5)	4/25 (16.0)	0/28 (0.0)	0/28 (0.0)	3/54 (5.6)	4/53 (7.6)
Not low blood pressure	6/151 (4.0)	7/150 (4.7)	6/232 (2.6)	8/231 (3.5)	12/383 (3.1)	15/381 (3.9)
All patients	9/177 (5.1)	11/175 (6.3)	6/260 (2.3)	8/259 (3.1)	15/437 (3.4)	19/434 (4.4)

*Gestational age was not ascertained in three cases.

between subjects with Alzheimer's disease, subjects with multi-infarct dementia, and controls (identified clinically with the criteria of the National Institute of Neurological and Communicative Disorders and Stroke and the Alzheimer's Disease and Related Disorders Association³ and the *Diagnostic and Statistical Manual of Mental Disorders Third Edition, Revised (DSM-III-R)*.⁴ We found that magnetic resonance imaging had a blind agreement with clinical diagnosis in 14 (61%) of 23 cases, and single photon emission tomography in 24 (77%) of 31 cases.⁵ Furthermore, all 22 subjects with dementia tolerated single photon emission tomography whereas six were unable to tolerate magnetic resonance imaging. For single photon emission tomography we used a gammacamera with three detectors with a total acquisition time of only 15 minutes.

It thus seems that single photon emission tomography with hexamethylpropyleneamineaxime labelled with technetium-99m is not only a clinically useful tool separating these disorders but the procedure best tolerated by elderly and demented subjects.

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General practitioners and skin biopsy

SIR,—Several articles in recent issues focus on the performance of skin biopsies by general practitioners.¹⁻⁴ Matters of concern are incomplete clinical information¹; inaccuracy of clinical diagnosis²; incomplete excision³; use of wrong fixative⁴; unnecessary operations on benign lesions²; increased workload generated for pathology departments²; and inadequate management of malignant tumours.⁴ One potential drawback is not addressed by these authors: incorrect interpretation of the histology report by the general physician.

Dermatologists are well aware of the fact that any incongruity between clinical diagnosis and histopathological description and the doctor's conclusion may cause severe harm to the patient. This

especially holds true for false negative reports of skin malignancies. If clinical suspicion of malignancy is not confirmed by the histopathological report then the dermatologist performs another biopsy or keeps the patient under regular control. How many patients with so called "benign" histopathological labels are wrongly reassured by the general physician, causing serious delay or mismanagement?

In this context I have scrutinised my experience over 15 months to the end of December 1991. Out of 278 patients with clinical suspicion of malignancy there were six with benign histopathological diagnoses that had to be challenged on clinical grounds. These patients underwent a second biopsy, either immediately (three within 1-2 weeks) or delayed after unsuccessful treatment attempts with various topical remedies (three after 6-10 weeks). The table shows the clinical and histopathological diagnoses.

An important difference between this series and the quoted reports on general practice skin surgery is the type of biopsy under consideration. Biopsy specimens of suspected skin malignancies in my practice are often partial (punch biopsies), whereas general physicians will usually perform excisional biopsies. The chance of correct histopathological diagnosis increases with completeness of biopsy procedure.

Clinical diagnosis of malignant skin lesions can be difficult even for the experienced dermatologist. In case of doubt, appropriate interpretation of the histopathological findings is crucial. The risk of woeful delay in patient management after incorrect judgment of the histopathological report by the general practitioner cannot be overemphasised.

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Deciding whether to be a doctor

SIR,—Having read J Parker-Williams's comments on selecting and helping potential doctors, I am glad that I did not graduate from St George's Medical School.¹

I agree that secondary schools and medical schools do not provide enough information for a potential doctor to make a properly formulated decision. They cannot convey the significance of sleep interrupted by frequent, sometimes petty, queries and emergencies; of a social life completely disrupted every six months; of stress induced by jobsworth nurses and technicians and overbearing seniors; of scrabbling for precious training posts; or of studying for examinations with very low pass rates while working excessively long hours. The average candidate cannot fully comprehend the

deadly dullness of routine blood drawing; of chasing results and investigations through reluctant pathology departments; and endlessly overbooked outpatient clinics—the normal working day of most junior doctors.

The preregistration year is undoubtedly a shock to most newly qualified doctors, not only because of the excessive demands placed on them but because of the lack of support from colleagues and seniors. Many people have doubts, fears, and uncertainties, which are only natural at the start of a career in medicine. The wise keep their own counsel, as seeking advice often singles out a person, who is then perceived as weak. Parker-Williams labels these people as misfits unworthy of having thousands of pounds spent training them and questions their commitment to medicine. It seems he would rather have medical schools churn out emotionless automatons.

A more professional approach to postgraduate training, education, and counselling would be most welcome, but on the basis of Parker-Williams's opinions I fear that we have a long way to go.

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1 Parker-Williams J. Deciding whether to be a doctor. *BMJ* 1992;304:319. (1 February.)

SIR,—M J Kelly has presented the benefits of showing potential medical students what their future may hold,¹ but why is no support system available in the United Kingdom for those highly intelligent, expensively educated young men and women who drop out of the medical profession shortly after qualifying?

I write as a lay person and as the parent of a recently qualified young doctor, who, last summer, after just four months as a preregistration house officer, felt quite unable to continue. This sudden decision came as a shock to all those with whom he worked. He was regarded as hard working and extremely competent.

Should my son choose, of his own volition, to get in touch with his medical school at some stage in the next year he will almost certainly be helped to get back into the system. Unless he makes the first move, however, nobody will communicate with him. He is rapidly, it seems to me, becoming just a statistic.

The last thing I would wish to see is a system that attempts to retain people by force. There will always be those who realise, too late, that they are in the wrong profession. My son may be one of them. I am convinced, however, that among those who drop out there are some who, with extra support—perhaps the chance to work part time for a short period—would go on to make good doctors.

In my own profession, teaching, it is often said that the best practitioners are those who understand at first hand the difficulties experienced by their pupils. Could this not also be true to some extent in medicine?

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1 Kelly MJ. Seeing for themselves. *BMJ* 1991;303:1598-600. (21-28 December.)

Child health surveillance lists

SIR,—In July last year we reported the variability of the criteria used by family health services authorities to admit general practitioners to child health surveillance lists¹ despite the existence of national guidelines.² In the same issue Wayne