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Audit of ankle injuries

SIR,—Dr G J Packer and colleagues should be congratulated on their use of a protocol for managing ankle injuries in an accident and emergency department to improve treatment and reduce the cost of radiology, in terms of both expense and unnecessary irradiation of patients.[1]

Previous attempts have been made to apply clinical guidelines to the selection of patients for radiography in accident and emergency departments, most notably in the use of skull radiography after head injury; guidelines on this have been suggested by the Royal College of Radiologists.[2] A recent study of the use of a modified version of these guidelines over 12 months suggested that it was easier to introduce than to sustain.[3] The rate of skull radiography initially fell by 40% but thereafter slowly increased so that by the end of the 12 months it had returned to the preimplementation value. The guidelines were introduced by displaying posters, distributing copies to casualty officers, and giving a short lecture to those starting a new job in the department. The authors comment that more attention should be given to sustaining any improvement resulting from using the guidelines rather than to further studies to justify their use. Using an algorithm attached to each relevant set of notes on initial presentation to the accident and emergency department[1] seems to be a logical step towards this. A review of the rate of completion of the protocol and the proportion of patients undergoing radiography 12 months after the algorithm was implemented would be valuable to assess this.

In addition to using effective clinical guidelines for selective radiography, a significant and sustained reduction in the number of *x* ray examinations requested can be achieved when there is a concurrent teaching programme.[4] Ideally, this should include regular lectures from radiologists, a film library of commonly missed lesions, and audit of *x* ray films.[5]

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1 Packer GJ, Goring CC, Gayner AD, Craxford AD. Audit of ankle injuries in an accident and emergency department. *BMJ* 1991;**302**:885-7. (13 April.)
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SIR,—We disagree with some comments in the paper of Mr G J Packer and colleagues.[1] Although their study is to be commended for its reduction in radiography costs and inappropriate referrals to fracture clinic, we feel that it underplays the significance of the 18% increase in patients reviewed as a result.

It is misleading to extrapolate savings in radiography to give annual figures while quoting weekly figures for patients reviewed in the accident department. If similar annual figures are calculated from data in the report, the number of patients reviewed in the accident department is increased by 216, in the soft tissue clinic by 60, and in the physiotherapy department by 36. The financial implications may not be minimal, as suggested by the authors, but in fact lead to a considerable increase in expenditure.

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Cancer and HIV infection

SIR,—In their recent editorial on cancer and HIV infection Drs Luke Hughes-Davies and Margaret Spittle state that they "know that the Centers for Disease Control classification may be missing some opportunistic infections."[1] Whether the surveillance definition for AIDS needs to be broadened or not, I am surprised to see our recently published work as the single reference to justify this statement.[2]

Our study documented bacteraemia in patients on admission to hospital in Nairobi, Kenya. Conventional pathogens, especially *Salmonella typhimurium* and *Streptococcus pneumoniae*, caused significantly more disease in seropositive than seronegative patients. In our discussion we developed the theme that many deaths related to HIV infection, particularly in poorer adults, are occurring relatively early in the course of HIV immunosuppression and are not caused by conditions used in the accepted diagnosis of AIDS. In the last sentence of the abstract we concluded that "the findings suggest non-opportunistic bacteria are important causes of morbidity and mortality in HIV-infected individuals in Africa."

Nowhere did we state, or imply, that our seropositive patients had conditions that were being missed or should be reclassified as AIDS defining problems. Our paper is the first to highlight the importance of acute bacterial infections in patients positive for HIV antibody in Africa. We are delighted if it is quoted, but not if it is misread or misinterpreted.

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Biochemical screening for Down's syndrome

SIR,—Professor Geoffrey Chamberlain notes that the cost of biochemical screening for Down's syndrome, when not set against savings in maintenance of such children, is used to delay introduction of this service,[1] and Dr T M Reynolds suggests that a further reason has been uncertainty about which analytes to measure.[2] Another reason may be the difficulty in providing adequate facilities for counselling patients.

It has been usual to interpret the results of tests for α fetoprotein as normal, raised, or borderline when screening for neural tube defects. In screening for Down's syndrome we report an actual risk and a suggested interpretation. Counselling is more complicated because interpretation depends on the perception of the stated risk by the patient and the obstetrician. In addition, knowledge of the effects of errors in estimation of gestational age[3] and of normally acceptable assay precision (table) may make the decision more difficult. Our contact with patients, general practitioners, and obstetricians suggests a need for study days on these topics in areas where biochemical screening for Down's syndrome is offered.

It should be emphasised that despite these limitations biochemical screening is still likely to be three times more successful than age alone in identifying fetuses with Down's syndrome. These difficulties show, however, the need for a better discriminator for Down's syndrome and the importance of assay precision when the "triple test" is used.

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1 Chamberlain G. ABC of antenatal care: detection and management of congenital abnormalities—II. *BMJ* 1991;**302**:1013-6. (27 April.)
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Diagnosing acoustic neuroma

SIR,—Drs I R C Swann and S Gatehouse are right to draw attention to the difficulties in the early diagnosis of acoustic neuroma.[1] The morbidity associated with surgical removal of tumours has repeatedly been shown to be directly related to tumour size. Major facial nerve complications, brain stem syndromes, and death are all more common with tumours of more than 2·5 cm diameter than with smaller lesions.[2]

The great majority of these patients present with audiovestibular symptoms (unilateral deafness, tinnitus, or imbalance) to the ear, nose, and throat clinic. Traditionally, considerable reliance has been placed on a battery of audiovestibular tests in the hope of achieving the ideal of early diagnosis by identifying those patients in whom it seemed reasonable to proceed to neuroradiological techniques of varying degrees of invasiveness (air or myodil meatography). These tests were based on the observation in retrocochlear pathology of excessive loudness adaption (tone decay), poor speech discrimination, and the absence of loudness recruitment (loudness balance test). More recently tests of stapedial reflex threshold and adaptation have been added, as has the auditory brainstem response.

In the past decade the situation has changed. Firstly, the reliability of the traditional audiological

Effect of acceptable assay precision on likelihood ratio for Down's syndrome. Kits were used according to manufacturers' protocols

Patient No	Age at estimated date of delivery (years)	α Fetoprotein* (kIU/l)	Oestriol* (nmol/l)	Human chorionic gonadotrophin* (kIU/l)	Risk of Down's syndrome	Coefficient of variation of likelihood ratio (%)
1	39·0	55·4	4·20	45·3	1:735	31·1
2	30·5	93·9	8·58	19·7	1:19 544	24·6
3	28·9	26·8	2·53	94·0	1:110	47·8
4	30·4	53·9	7·72	12·8	1:13 047	21·4
5	37·6	81·6	3·37	112·1	1:157	39·5

*Mean assay coefficients of variation: α fetoprotein 3·92% (range 3·0-4·4); oestriol 8·58% (range 7·3-10·9); human chorionic gonadotrophin 7·32% (range 5·3-9·8).

tests has been called into question. In 105 patients with proved tumours we found tone decay in 25 (24%), abnormal loudness balance in 71 (68%), and abnormal speech audiometry in 49 (47%). Although better, the stapedial reflex threshold and decay parameters were normal in 17 (16%) of these patients. Even the auditory brainstem response has its limitations. In most series it has been found to be a sensitive test (only 2% of these patients had a normal auditory brainstem response), but Lai *et al* recently reported an incidence of 24% normal or equivocal auditory brainstem responses in patients with proved tumours.[3] Furthermore, the specificity of the test is very poor.

Radiological diagnosis is now highly reliable. Computed tomography with contrast will show most intracranial lesions. Magnetic resonance imaging enhanced with gadolinium diethylene-triaminepentaacetic acid (Gd-DTPA) will reveal all tumours regardless of size.[4] We believe that there is an overwhelming case for all patients with unilateral audiovestibular symptoms for which there is no other plausible explanation to be examined with computed tomography or magnetic resonance imaging. Computed tomography is now available in most parts of Britain, and the same will soon be true of magnetic resonance imaging, which is the optimal tool for neuro-otological diagnosis.

Our final point concerns cost. Financial audit in such matters is a firmament full of black holes. We accept the calculations of Drs Swann and Gatehouse, but there are certain omissions. Moffat *et al*[5] made the point that the failure to diagnose a small tumour may make the difference between a patient who rapidly returns to work and one who is in need of state support for years. Lastly, we cannot ignore the medicolegal climate. An increasing number of suits are being filed for failed diagnosis of acoustic neuroma. Health authorities will have to consider this cost with as much concern as the cost of neuroradiological imaging techniques.

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Terodiline for treating detrusor instability in elderly people

SIR,—Terodiline has anticholinergic (selectively antimuscarinic) and calcium channel blocking activity and has been advocated for the treatment of urinary frequency and urge incontinence. Although it is widely prescribed, Dr Penelope Wiseman and colleagues could not show that it had any advantages over placebo in elderly patients with detrusor instability.[1]

In the past 12 months we have treated two patients, aged 76 and 78, who were referred for consideration of permanent pacing; each was receiving terodiline 12·5 mg twice daily for urge incontinence. In each case 24 hour Holter monitoring showed prolonged episodes of atrioventricular dissociation with ventricular rates of 30-40 beats/minute. After terodiline was stopped repeat 24 hour recordings showed sinus rhythm throughout with only marginal prolongation of the PR interval and left axis deviation in each case. The manufacturer's datasheet lists tachycardia but not bradycardia among the side effects,[2] although bradycardia and hypotension are described as features of overdosage, being attributed to predominance of the drug's calcium antagonist effects over its anticholinergic actions.

It is important to appreciate that even standard doses of terodiline may precipitate atrioventricular dissociation in elderly patients who already have some features of conducting system disease. This may further alter the balance of possible risks to benefits to be considered when prescribing this drug.

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1 Wiseman PA, Malone-Lee J, Rai GS. Terodiline with bladder retraining for treating detrusor instability in elderly people. *BMJ* 1991;**302**:994-6. (27 April.)
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Referral for suspected glaucoma

SIR,—Messrs Maurice W Tuck and Ronald P Crick raise again the problem of direct referral of patients with suspected glaucoma from an optometrist to an ophthalmologist.[1] Many patients with raised intraocular pressures are referred initially by their optometrist.[2] The alarmed patient then has to trudge wearily and increasingly nervously to the general practitioner to obtain a further referral (often just a signature on the sight test form) to the local ophthalmologist. The system is clearly flawed, causing distress to the patient and wasting the general practitioner's time.

A sensible solution, hinted at by Messrs Tuck and Crick, would be to permit direct referral provided that the optometrist has performed all three main tests for glaucoma—tonometry, ophthalmoscopy, and perimetry—and that he or she notifies the general practitioner independently. The present system of referral through the general practitioner would otherwise apply. This would have the benefit of providing the ophthalmologist with an initial or "baseline" set of investigations, and would provide an incentive to optometrists to equip themselves adequately and to perform these tests routinely. With greater competition among high street optometrists, providing such services is likely to become increasingly important.

Close cooperation locally would allow quicker referral for the patient, enhanced professional responsibility for optometrists, better information for the ophthalmologist, and a reduction of the general practitioner's workload.

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1 Tuck MW, Crick RP. Efficiency of referral for suspected glaucoma. *BMJ* 1991;**302**:998-1000. (27 April.)
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No blood, no drug

SIR,—Dr Fred Charatan detailed the recent developments in the United States concerning the Clozaril Patient Management System (CPMS), and this news item was followed by a brief footnote on the situation in Britain.[1] The United Kingdom Clozaril Patient Monitoring Service is completely separate from the monitoring system in the United States (though sharing the same safety objective of prompt detection of blood dyscrasia) and has been codeveloped by Sandoz Pharmaceuticals (UK) and leading representatives of the psychiatric and pharmacological professions in accordance with the requirements of health care services in the United Kingdom.

As a fully licensed medicine, Clozaril (clozapine) was first introduced into the United Kingdom in January 1990 for schizophrenia resistant to treatment, accompanied by the centralised safety service that individually registers all psychiatrists and pharmacists who prescribe clozapine and also each patient for whom treatment is intended. After an initial screening patients are formally monitored throughout the duration of their treatment with clozapine. The service provides the necessary materials to send regular blood samples (weekly at first and fortnightly after 18 weeks of treatment) to the CPMS laboratory for the standardised safety analysis (including white blood cell differential count). Where this screening detects an abnormal result the patient's care team is immediately notified to ensure that clozapine treatment stops and any necessary supportive measures are promptly instituted. A full 24 hour expert back up advisory service is provided. If a patient is withdrawn from clozapine the monitoring continues for a further four weeks. The monitoring service helps ensure that a patient is not inadvertently rechallenged with clozapine after withdrawal due to a blood abnormality.

In addition to the safety that this assurance provides for individual patients, the Clozaril Patient Monitoring Service enables the full safety profile of clozapine to be continuously observed by the appropriate professional bodies, including the drug safety regulatory authorities.

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1 Charatan FB. No blood, no drug. *BMJ* 1991;**302**:1041-2. (4 May.)

What is a normal upper gastrointestinal tract?

SIR,—Drs D G Colin-Jones and P L Golding averred that "a normal upper gut does what is asked of it without complaint."[1] Were the behaviour of the lower gastrointestinal tract included, for continuity's sake, then the normal gastrointestinal tract could be regarded as that least susceptible, at the extreme, to gastric cancer and to chronic bowel diseases, including appendicitis, diverticular disease, and colorectal cancer. In this respect, rural Africans can claim merit. Until very recently gastric disease was rare and bowel diseases nearly absent. In 1986 at Murchison Hospital, Natal, of 136 patients with malignancies from a rural Zulu population of a quarter of a million there was one case of stomach cancer and were no cases of colorectal cancer.[2]

Even in cities, although dyspepsia and gastritis are becoming increasingly common, gastric cancer remains uncommon; moreover, the incidence of chronic bowel diseases has risen only slightly[4]—which is puzzling because the diet of urban black people now includes 25-35% of energy from fat, and fibre intake, now 10-15 g daily, has fallen considerably. What is inhibiting rises in gastrointestinal diseases? Regarding chronic bowel diseases, a large proportion of ingested starch from maize, the staple cereal, reaches the colon, ferments, and hence contributes to inhibit disease development.[4] Faecal pH value has scarcely risen,[5] thereby also conferring a measure of protection.[6] Early local studies indicated absence of polyps in