summaries, which are given to the patients on discharge. But no efforts have been made to provide a monitoring service for the patients after discharge. They are given a supply of eyedrops and other medication as necessary and the summary in their native tongue, with instructions to go to their general practitioner should they experience difficulties. This lack of proper follow up is unacceptable to the ophthalmic profession in Britain and, I imagine, the other countries from which these patients originate.

I have offered to try to set up a postoperative service for British patients and should be pleased to hear from fellow ophthalmologists who are prepared to provide this service. It is no small problem: in the 18 months that the eye clinic has been in Gibraltar over 3000 British patients have been treated. From conversations I had with compatriots on board, the long waiting lists for NHS consultations and operations were a major factor in their decision to go to Gibraltar.

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Histopathology and medical laboratory scientific officers

EDITOR,—Arguing about whether pathologists or technicians should dissect gross specimens and select histopathological blocks overlooks a more fundamental requirement.^{1,2} Qualifications apart, it is important that the same person handles both the gross and the microscopic examination of each specimen; the two steps ought never to be dissociated. To separate them not only damages the quality of the reporting but, if done regularly, retards the educational development of the pathologist.

The aim of gross examination is often misunderstood. It is not merely to record striking, measurable, and undeniable features with which to rebut future charges of misidentification. Nor is it to construct fluent strings of descriptive clichés, of questionable circumstantial accuracy, for the edification of the impressionable. The paramount aim is to apply experienced, skilled observation to the selective removal of those parts likely to yield microscopically diagnostic features.

The ability to recognise fruitful sites for block taking in large and complex specimens comes, if slowly, from the cyclical, iterative, process of regularly correlating the recollected naked eye appearances with the corresponding microscopic ones. Those whose gross dissections are not closely and repeatedly linked to the microscopic appearances may well succeed in capturing fairly obvious lesions, but lesions of any subtlety will escape them, resulting in diagnostic nullity, compromise, or inconclusion.

Learning, maintaining, and regularly extending the art of correlation take time and effort beyond those needed for diagnosis alone. They demand self discipline and diligence because, when diagnostic demands are heavy, their cultivation may be sacrificed to expediency. Correlation entails a progressive retreat from the higher magnifications needed to confirm diagnostic suspicions. As the powers are reduced more extensive, but less detailed, vistas are appreciated and retained. Examination of the section with a hand lens and the naked eye completes the mental matching to the site whence it came. Thus do the delicate alterations of texture, colour, translucency, and expansion in the gross specimen acquire microscopic reality. Success demands regular, conscientious, repetition.

The Royal College of Pathologists should insist on the continuity of pathological care by endorsing the intrinsic unity of the complementary gross and microscopical examinations. Without the college's support British pathological reporting and continuing education will sustain irreparable damage in the present managerially controlled decline.

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Reiter's syndrome attributed to hepatitis B immunisation

EDITOR,—Wajahat Hassan and Roger Oldham describe a case of Reiter's syndrome, which they attribute to immunisation against hepatitis B, which has not been reported previously.¹ We fail to understand how they can claim this when they did not exclude one of the commonest triggers for Reiter's syndrome—namely infection with *Chlamydia trachomatis*.² No urethral swab was taken for culture of chlamydia or detection of antigens, and no mention is made of serological testing for antibodies to *C trachomatis*, which are often significantly increased in Reiter's syndrome associated with chlamydia.³ Although the patient had "no prodromal symptoms," it is well known that genital infections with *C trachomatis* may be asymptomatic. This omission is important for two reasons: firstly, evidence exists that a prolonged course of tetracycline may shorten the duration of arthritis if *C trachomatis* is the cause⁴; and, secondly, a diagnosis of chlamydial infection has important implications for any sexual partners since *C trachomatis* is the commonest cause of pelvic inflammatory disease with its sequelae of chronic pelvic pain, tubal pregnancy, and infertility.

Patients presenting with Reiter's syndrome without a history of an enteric pathogen as a trigger should be referred for a full screen for sexually transmitted infections.

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Hyperbaric oxygen treatment for crush injury

EDITOR,—Andrew D Shaw and colleagues draw attention to the self perpetuating process of oedema and ischaemia after crush injury and the need to break this cycle.¹ In ischaemia, failure of oxygen delivery is at the root of the problem. The cycle can be interrupted by giving oxygen at a high dose, provided that it is used early. In the United States crush injury is a recognised indication for

hyperbaric oxygen treatment, which is paid for by insurers when given for this indication. This was discussed in an editorial in 1993.²

Although it has been hypothesised that additional oxygen may worsen reperfusion injury, the reverse has proved to be the case. In an experimental study Nylander *et al* found that a single 45 minute session of hyperbaric oxygen significantly reduced postischaemic oedema and that the effect lasted 48 hours.³ Zamboni *et al* found that hyperbaric oxygen abolished neutrophil adhesion and minimised oedema after four hours of total ischaemia in rat gracilis muscle.⁴ They are now using hyperbaric oxygen routinely in the re-implantation of extremities and report complete muscle survival and minimal soft tissue oedema with ischaemia times of up to 12 hours. Crush injury is often accompanied by hypotension and fat embolism causing cerebral oedema, which can also benefit from hyperbaric oxygen treatment.⁵

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Skin necrosis induced by streptokinase

EDITOR,—J Penswick and A L Wright report a case of skin necrosis possibly induced by treatment with streptokinase.¹ Pathophysiologically they suspected "a variety of disturbances of the clotting and thrombolytic cascade," but they fail to give any evidence for their suspicion. The clinical course of events is compatible with cholesterol crystal embolisation. Cholesterol crystal embolisation of the arteries of the skin may present as cutaneous purpura and ulcers. It occurs in patients with extensive atherosclerotic disease as a consequence of the showering of cholesterol rich material from ulcerated atheromatous plaques into the arterial circulation. Cholesterol embolisation has been described after angiographic procedures, vascular surgery, and anticoagulant treatment and may manifest itself in multiple organ systems.²

Several case reports have described cholesterol crystal embolisation temporally and possibly causally related to treatment with streptokinase as well as to treatment with tissue plasminogen activator.³ The time interval between the start of lytic treatment and the onset of symptoms of cholesterol crystal embolisation varied between seven hours⁴ and four days.⁵ The symptoms included livedo reticularis, myalgias, necrosis of the skin and toes, ulcers, gangrene of the hands and feet, and renal failure. Two cases of suspected cholesterol crystal embolisation after the application of streptokinase (Streptase) have been reported to Behringwerke AG between 1980 and 1994 as part of postmarketing surveillance. The interval between application and the onset of symptoms was 10 hours in one case and three days in the other.

On the basis of the patient's history (hypertension, peripheral vascular disease), the interval between the start of lytic treatment and onset of symptoms (24 hours), and the symptoms (diffuse tenderness, bruising of buttocks and upper thighs,

followed by skin necrosis) reported by Penswick and Wright, we suggest that the patient had cholesterol crystal embolisation. The diagnosis could be confirmed by histological findings of cholesterol crystals in the small and medium sized arteries. It may be necessary to take repeated biopsy specimens to find these changes.

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Future of cancer registries

EDITOR,—Allyson Pollock's editorial on the problems that cancer registries face in obtaining good quality data on outcomes points out the potential conflict between datasets based on populations and those based on clinicians.¹ Clinically based datasets focus on patients treated in a given centre and do not provide an accurate picture of the treatment received by the population as a whole. On the other hand, data normally collected by cancer registries cover all cases of cancer but typically include inadequate amounts of the clinical information necessary for valid comparisons of outcomes of treatment.^{2,3} The merits of the two sources of data thus need to be combined for a clearer picture of variations in both the delivery and outcome of treatment.

West Midlands Regional Health Authority has just approved substantial funding for a joint programme covering the cancer registry and the proposed cancer centres and units as part of the implementation of the Calman report on cancer services. The system will be based on existing data collection networks in the cancer registry and cancer centres. To improve trial recruitment and monitoring, links will be established between the Cancer Research Campaign's Trials Unit and the cancer registry. Data collected will as far as possible be derived from clinicians by means of computer database systems as part of routine work practices.^{4,5} They will be coded at source, through the use of look-up tables, according to the International Classification of Diseases systems used at the cancer registry. Data on radiotherapy and chemotherapy prescribed will be collected directly by means of computer based prescribing systems.

Data on patients treated by clinicians in cancer units not covered by the core computer network will be collected by means of machine readable registration and follow up forms as part of the clinical record. Ideally the data will be transferred to local computerised databases and then downloaded to the cancer registry. Completion of these forms will be a criterion within the region for obtaining and keeping the status of a cancer unit. Clinical information collected will be available to the unit, together with data gathered by the registry from other sources for audit or research purposes.

We believe that the system we are setting up will use the resources at the cancer registry to maximum advantage while at the same time being of value to clinicians auditing their local practice.

The system should provide regionwide data on outcomes based on information derived from clinicians.

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Hepatitis B immunisation and reactive arthritis

EDITOR,—Wajahat Hassan and Roger Oldham describe two patients in whom immunisation against hepatitis B was followed by prolonged reactive arthritis.¹ Sexually acquired reactive arthritis is an important form of reactive arthritis; gonococcal infection may also present with arthritis. No details of the sexual histories of the patients are reported, and although the patient in case 1 had symptoms of dysuria, a urethral swab was not taken. There is no report of diagnostic tests for chlamydia, the commonest organism associated with sexually acquired reactive arthritis. Conventional urine cultures will not grow this organism.

Failure to exclude a sexually acquired reactive arthritis casts doubt on the authors' suggestion of an association between vaccination and arthritis. Both patients were health care workers, which might have caused problems for their colleagues in investigating for a sexually transmitted disease. Referral to a genitourinary medicine clinic, because of its confidentiality, should avoid such problems. If the patients' arthritis was related to a sexually transmitted disease the outcome might have been better with appropriate treatment of the infecting organism. This is another reason for referring all such patients to a genitourinary medicine clinic.

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- 1 Hassan W, Oldham R. Reiter's syndrome and reactive arthritis in health care workers after vaccination. *BMJ* 1994;309:94. (9 July.)

Implicit memory

EDITOR,—Recent work by Hughes *et al* suggests that unconscious processing of auditory information takes place during general anaesthesia,¹ which would fit into the category of "implicit memory" as defined in J G Jones's editorial.² This raises the question whether implicit memory is an unavoidable and consistent property of general anaesthesia.

Studies have shown that electroencephalographic patterns during hypnosis and conscious sedation with inhalation agents are characterised

by an increase in α (9-12 Hz) activity and suppression of low (0-3 Hz) frequencies.^{3,4} We have monitored the electroencephalogram during the complete cycle of induction of anaesthesia, surgery, and recovery, using a transform that eliminates the errors of the fast Fourier spectral analysis method. The characteristic pattern in a patient who is adequately anaesthetised, as judged by accepted methods, is that of complete suppression of the α activity but with a dominant low frequency component in the 1-3 Hz range. We believe that reappearance of α activity may be an important indicator of lightening anaesthesia and that it is this that is associated with the onset of implicit memory. Investigations that showed success of unconscious implicit learning may possibly have been carried out⁵ during periods when subjects were only lightly anaesthetised.

We believe that sufficient information on depth of anaesthesia can be derived from the intrinsic electroencephalogram without resort to auditory or visual evoked potentials. Avoidance of such methods has considerable advantages in ear or eye surgery and for patients with impaired hearing or vision. Our transform is being assessed to determine its usefulness in detecting periods of either implicit or explicit awareness during operations.

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Cochrane Collaboration

EDITOR,—I wish to clear up three misconceptions about the Cochrane Collaboration's work which are mentioned in Fiona Godlee's editorial.¹

Firstly, the claim that the Cochrane Collaboration limits itself to randomised controlled trials is not true. Because so many ineffective and harmful treatments have been introduced on the basis of unreliable observational evidence we will continue to concentrate on randomised controlled trials as the first step in assessing the effects of health care. However, because we select topics for study on the basis of their importance to health, not because they have been subjected to randomised controlled trials, we use non-randomised studies when no randomised ones can be carried out to address the topic.

Secondly, the criticism that the collaboration doesn't wish to expose its processes and products to detailed external scrutiny is contradicted by both deeds and words. Anybody, anywhere, can join the collaboration, and we are delighted that so many of the participants at the second colloquium, most of whom were not members at the collaboration's start, have subsequently joined us. Furthermore, the electronic publication of Cochrane reviews (first as protocols, subsequently as analyses) will provide unprecedented opportunities not only for peer review (which, of course, will also be carried out by the print journals publishing derivations of them) but for continuous updating and rapid modification in the light of criticism.² Finally, the peer review process is the focus of one of our newest Cochrane centres.

Thirdly, those who claim that too little emphasis is placed on disseminating the results of Cochrane