

and may easily displace. Our guard is simple and easy to use even in inexperienced hands. In addition, it is reusable, easy to sterilise, and requires no alterations to existing equipment. Its use should minimise the risk of damage to internal organs during the insertion of pleural drains.

We are most grateful for the help and encouragement from the respiratory physicians and thoracic surgeons in the Wessex and South Western Regional Health Authorities. We also thank the department of medical engineering at the Bristol Royal Infirmary for manufacturing the guard and for their helpful advice during its development, and the departments of medical illustration at Southmead Hospital, Bristol, and the Bristol Royal Infirmary.

Patent applied for. Guards are available from JEH.

¹ Anonymous. Spontaneous pneumothorax. *Br Med J* 1976;iii:1407-8.

² Firmin RK, Welch JD. Insertion of a chest drain. *Hospital Update* 1980; 6:481-6.

³ Firmin RK, Tolhurst-Cleaver C. Safe intrapleural drainage. *Anaesthesia* 1980;35:79-80.

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Departments of Surgery and Respiratory Medicine, Bristol Royal Infirmary, Bristol BS2 8HW

J B BRISTOL, FRCS, lecturer in surgery and honorary senior surgical registrar

J E HARVEY, MD, MRCP, senior medical registrar

Importance of asking about glaucoma

Chronic simple glaucoma is a fairly common disease of middle and old age. Patients are largely free of symptoms in the early years, and visual loss may be severe before it is noticed. Compliance with treatment, as in other chronic and asymptomatic diseases, is poor,¹ and it is therefore important to encourage patients to take their drugs regularly. Patients admitted to hospital for non-ophthalmic reasons do not always seem to receive their prescribed eye drops. I undertook this study to determine the extent of this problem and to suggest a remedy.

Methods and results

All doctors working in the outpatient department of the Western Ophthalmic Hospital and its outlying clinics were asked to compile data concerning hospital admission for patients with chronic simple glaucoma.

Information was requested from 200 patients regarding hospital admissions for non-ophthalmic reasons since starting treatment for glaucoma. Forty-nine had been admitted to hospital a total of 77 times. Treatment charts and admission notes were requested from the 29 hospitals concerned. No information was available on 20 admissions, either because no records were available or because the hospital did not reply to repeated letters of request. Copies of the relevant notes were obtained for 57 admissions.

The correct eye drops were prescribed in 36 of these 57 admissions. In the remaining 21 cases, however, no eye medication was prescribed even in the eight cases where a history of glaucoma had been given. The average length of these 21 admissions was nine days (range 1-30 days).

Comment

The prevalence of chronic simple glaucoma rises from 0.02% of those in their 40s to 10% of those over 80 years old.² The proportion of these receiving treatment is unknown, but chronic simple glaucoma is one of the commonest diseases seen in ophthalmic outpatients. A large number of patients with glaucoma will be admitted to hospital for various reasons each year.

In this survey 37% of those admitted did not receive correct medication. This was often because no history of eye disease was obtained, though in eight cases no treatment was given despite a history of glaucoma. The fact that many patients neglected to give a history of glaucoma may indicate their disregard for the problem.

While one or two weeks without treatment are not likely to cause appreciable visual impairment, continued treatment in hospital is most important. Compliance with treatment in this group is known to be low and the failure of a doctor to prescribe eye drops may encourage the patient in his belief that the drops are unimportant and may worsen compliance in the future.

Three conclusions may be drawn from this survey. Firstly, the ophthalmologist must increase his efforts to educate patients with chronic simple glaucoma and so improve compliance with treatment. Secondly, all medical staff must encourage patients to use previously prescribed drugs.

Lastly, since glaucoma is a common disease affecting the elderly—who are often admitted to hospital—every houseman should include in his history taking a specific question about glaucoma alongside those about hypertension and diabetes.

¹ Ashburn FS, Goldberg I, Kass MA. Compliance with ocular therapy. *Surv Ophthalmol* 1980;24:237-48.

² Crick RP. Computerised clinical data base for glaucoma—ten years' experience. *Research and Clinical Forums* 1980;2(1):29-41.

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Western Ophthalmic Hospital, London NW1 5YE

N C PRICE, BSC, MB, senior house officer

Rhabdomyolysis and systemic infection

Rhabdomyolysis is a well-recognised but underdiagnosed cause of acute renal failure. Most cases are secondary to trauma or ischaemia. More recently cases of non-traumatic rhabdomyolysis have been reported in comatose patients after overdoses of narcotics, sedatives, and alcohol,¹ where pressure-induced ischaemia may be responsible. Rhabdomyolysis secondary to sepsis has not been recognised often despite early reports in patients with severe lung infections.² We report three cases of rhabdomyolysis in patients with severe fungal and bacterial infections.

Case reports

Case 1—A 57 year old Nigerian man with glucose-6-phosphate dehydrogenase deficiency was admitted for investigation of acute renal failure. One year before admission a non-Hodgkin's lymphoma with autoimmune haemolytic anaemia was diagnosed. In the week preceding his admission to hospital he complained of severe headache, fever, and a productive cough. Investigations showed severe haemolysis, haemoglobinuria, and acute renal failure. One week after admission his condition deteriorated; he became increasingly breathless and complained of severe myalgias. Bronchoalveolar aspergillosis was diagnosed by aspiration at bronchoscopy. Rhabdomyolysis occurred at the same time as the chest infection (table); a striated muscle biopsy confirmed the diagnosis. After treatment of the aspergillus infection with amphotericin B his clinical condition improved transiently and muscle enzyme values returned to normal. His condition subsequently deteriorated and he died from a cardiorespiratory arrest.

Serum concentrations of creatinine phosphokinase, phosphate, calcium, and potassium in three patients during the acute infectious episodes

Case No	Infection	Creatinine phosphokinase (IU/l) (normal range 0-200)	Phosphate (mmol/l) (normal range 0.70-1.25)	Calcium (mmol/l) (normal range 2.10-2.60)	Potassium (mmol/l) (normal range 3.8-5.0)
1	Bronchoalveolar aspergillosis	40 000	3.92	1.58	5.1
2	<i>Staph epidermidis</i> bacteraemia	13 600	2.89	2.01	7.0
3	<i>Legionella pneumophila</i> pneumonia	11 130	2.43	1.69	4.8

Conversion: SI to traditional units—Phosphate: 1 mmol/l \approx 3.1 mg/100 ml. Calcium: 1 mmol/l \approx 4 mg/100 ml. Potassium: 1 mmol/l = 1 mEq/l.

Case 2—An 18 year old Vietnamese man was admitted after a road traffic accident. On admission he was comatose with a right haemopneumothorax. A chest x-ray film showed a diffuse bilateral pulmonary infiltrate. As his respiratory function deteriorated mechanical ventilation was started and broad-spectrum antibiotics given. One week after admission two episodes of hypotensive septicaemia occurred and he developed acute non-oliguric renal failure. Ten days later and while on peritoneal dialysis he had a further septicaemic episode; *Acinetobacter* spp and *Staphylococcus epidermidis* were

cultured from his central venous line. Within a few hours of this episode muscle enzyme values rose sharply (table) followed two days later by a drop in urinary output. The infection was controlled by the administration of netilmicin and the muscle enzyme values returned to normal. Late hypercalcaemia (2.63 mmol/l (10.5 mg/100 ml)) was noted as the patient's renal function improved.

Case 3—A 52 year old man was admitted with a severe chest infection. He gave a one-week history of fever, nausea, vomiting, severe headaches, and myalgias. Within a few hours of admission he developed acute respiratory failure necessitating artificial ventilation. Chest x-ray films showed bilateral lung infiltrates predominantly affecting the left upper lobe. He was treated with intravenous erythromycin as an atypical pneumonia was suspected. A few days later the muscle enzyme values rose with a rapid decline in renal function and numerous pigmented granular casts in the urine. Acute renal failure secondary to rhabdomyolysis with myoglobinuria was diagnosed and haemodialysis started. As the chest infection slowly improved a diagnosis of *Legionella pneumophila* infection was made by serology (titre < 1/8 rising to 1/32). Muscle enzyme values returned to normal 10 days after the onset of rhabdomyolysis.

Comments

Myalgias are frequently part of viral and bacterial infections. Rhabdomyolysis, however, has only recently been associated with systemic diseases; some patients with *Legionella pneumonia* infection have presented with severe rhabdomyolysis leading to acute tubular necrosis.³ The mechanisms underlying muscle damage during infections are poorly understood and are likely to be multiple. Severely ill patients with systemic infections are often hypoxic, dehydrated, and acidotic; this together with concomitant electrolyte disorders and hypophosphataemia⁴ can predispose to muscle damage and subsequent acute renal failure.

We believe that rhabdomyolysis is underdiagnosed during infections; the recognition of this association could lead to prompt rehydration, correction of acidosis, and perhaps forced alkaline diuresis.⁵

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Department of Nephrology and Transplantation, Royal Free Hospital, London NW3 2QG

A M EL NAHAS, MRCP, registrar, renal unit
K FARRINGTON, MRCP, senior registrar, renal unit
S QUYYUMI, BSC, MB, BS, senior house officer, renal unit
J F MOORHEAD, FRCP, senior consultant
P SWENY, MD, MRCP, senior lecturer

Urethral gonococcal infection by co-existing beta-lactamase and "resistant" strains of gonococci

Detection of more than one strain of gonococcus from different sites in one person has been reported many times.¹ We report a case of two strains of gonococci isolated from the same site at the same time in one person.

Case report

A 34 year old divorced miner took a week's holiday in Bangkok, during which time he indulged in sexual intercourse with "quite a few" consorts. On 16 August 1982 he attended this department with a three day history of urethral discharge. Gonorrhoea was diagnosed clinically on the basis of a Gram film showing typical intracellular Gram negative diplococci. On epidemiological grounds he was treated with 2 g intramuscular spectinomycin dihydrochloride.^{2 3}

Subsequent laboratory culture of the urethral discharge showed the presence of two distinct strains of gonococci from the single site. One had a minimal inhibitory concentration of 0.3 mg/l to penicillin and was sensitive to all the usual range of antibiotics except co-trimoxazole; the other strain was a β -lactamase producer resistant to penicillin G, trimethoprim, ampicillin, and amoxycillin. Both strains were sensitive to erythromycin, clindamycin, tetracycline, cefuroxime, spectinomycin, streptomycin, kanamycin, and acroloxacin. The β -lactamase strain was confirmed by the venereal diseases reference laboratory at the London Hospital.

Comment

We found no report of two differing strains of gonococci being isolated from the same site at the same time in one person. The two strains in our patient may have been contracted at different times from more than one partner or, more improbably, from one partner only. The penicillin-sensitive strain may have been undergoing mutation into a β -lactamase strain. Had treatment with penicillin been used initially in this case and full sensitivity tests not carried out, a partial improvement might have been noted clinically and the subsequent presence of gonococci diagnosed as a recurrence. Out of a total of 89 separate isolates of β -lactamase-producing strains in our laboratories, this is the first time that two distinct strains have been isolated from one site at the same time in one patient. This serves to reinforce the utmost importance of carrying out sensitivity tests on all gonococcal isolates.

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Department of Genito-Urinary Medicine, Royal Infirmary, Cardiff CF2 1SZ

S K PANJA, MRCOG, senior registrar
L COHEN, MD, consultant

Antiemetic effect of nonabine in cancer chemotherapy: a double blind study comparing nonabine and chlorpromazine

The psychotropic agent nonabine is a chromenol derivative with antiemetic properties and a similar pharmacological profile in animal models to that of tetrahydrocannabinol.¹ We carried out a study to compare the effects of oral nonabine on nausea and vomiting in patients receiving cancer chemotherapy with the effects of chlorpromazine, a drug of proved efficacy in these circumstances.² The study was approved by the hospital ethical committee. In view of the disturbing nature of the symptoms a placebo was not included.

Patients, methods, and results

We chose a randomised, double blind crossover design in which we studied 12 patients with lymphoma (eight men and four women aged 41-82 (mean 59.3) years) receiving standard MOPP (mustine, vincristine, procarbazine, and prednisolone) or CHOP (cyclophosphamide, adriamycin, vincristine, and prednisolone) chemotherapy regimens (four and eight patients respectively). Patients received six courses of chemotherapy (a total of 139 treatments) and one hour before infusion were given by mouth 15 mg nonabine, 99 mg chlorpromazine, or a combination of these drugs. In one patient a combined dose of 15 mg nonabine and 99 mg chlorpromazine produced excessive sedation and was subsequently reduced to 10 mg nonabine and 66 mg chlorpromazine. The same antiemetic was given on days 1 and 8 of a particular course since we had a strong clinical impression that