sulphinpyrazone and dipyridamole. Although long-term patency of these grafts is excellent (80%) at seven years,⁵ I think the presence of concomitant distal occlusion justifies using anti-platelet drugs. Complete cessation of smoking is important. Indeed an aortofemoral graft is three times more likely to occlude if the patient continues to smoke more than five cigarettes a day. I hope I would be one of the few lucky ones occasionally seen in follow-up clinics with a 15-year-old patent graft.

So far so good, but what if things had not turned out this way? I should dread infection, because an infected graft is the most serious and potentially lethal complication. Fortunately, this complication is now rare. I believe prophylactic antibiotics in arterial grafting are important, particularly when gangrene is present. Indeed, I would like to have started antibiotics the day before operation. If this complication developed, I suppose my only hope would be proximal aortic ligation and axillobilateral femoral graft. If successful grafting were not possible, either due to technical failure, infection, or poor run off, and amputation is

unavoidable, I should prefer a stump that would heal without any further trouble. My choice would be a Stokes-Gritti amputation if it is clear that it will heal—and most do heal very well—leaving a powerful and reliable stump.

Having lived through this imaginary experience, I intend to stop smoking, reduce my weight, and start jogging two miles a day. I would have no leg to stand on—literally—if I carry on as I am and really do experience this in 20 years time.

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Today's Treatment

Use of antibiotics

Management of frequency and dysuria

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Many women and girls suffer from frequency of micturition accompanied by discomfort or pain. A survey in South Wales showed that nearly half of an unselected group of women aged 21-65 had experienced these symptoms at some time. In the year before the survey 22% of the women had experienced them but only half had sought medical advice. The younger women tended to see their doctors more often than the older ones, who accepted their symptoms perhaps after numerous fruitless consultations. Much can now be done to alleviate both symptoms and fears, and since only half the women with symptoms consult their doctor greater public awareness of the frequency and dysuria syndrome is clearly needed. Lay organisations such as the "U and I" club, which seek to improve the quality of life for women who are made miserable by the symptoms, should be regarded as a helpful form of public education rather than a slight on medical practice.

There is still much to be learnt about the pathogenesis of the frequency and dysuria syndrome. Its management is therefore largely empirical and success cannot be guaranteed.

Pathogenesis

Only half of the women who present with frequency and dysuria have bacteriuria. Clinically culture-positive and culture-

negative patients are indistinguishable. Dipslides for diagnosing urinary tract infection have made "on the spot" culture possible during attacks. This method shows that about half the women with initially sterile cultures develop bacteriuria during subsequent attacks. On bacteriological grounds patients with the frequency and dysuria syndrome can therefore be classified into bacteriuric, intermittent bacteriuric, and non-bacteriuric types. This classification is important since the non-bacteriuric patient generally fails to improve after antibacterial treatment, whereas the bacteriuric patient usually does. A precise bacteriological diagnosis is possible if patients are given dipslides to inoculate during attacks. Unfortunately, dipslides are not so far available on prescription. Unnecessary, expensive, and sometimes dangerous antibacterial treatment for non-existent infections might be avoided if dipslides were made freely available.

Management

HISTORY AND EXAMINATION

Careful history taking is of utmost importance in formulating management. It is a difficult task that requires tact and time. In young girls evidence of vulvovaginitis such as vulval soreness, pruritis vulvae, and vaginal discharge should be sought. Wearing nylon underwear, using bubble baths, and swimming in heavily chlorinated pools may all act as precipitating factors in this age group. Poor perineal hygiene is often at the root of the trouble; this may result from enuresis or "overflow wetting"—a habit that results from delaying micturition because sanitary facilities at school or in the house are inadequate. Prepubertal girls have vaginal secretions with a higher pH than adults, which may encourage bacteria to colonise the perineal floor and so lead to urinary tract infection. Patients are sometimes found to have

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been applying strong antiseptic agents, which may cause irritation and so encourage scratching and infection.

After puberty sexual intercourse, menstruation, contraception by the pill or coil, and the use of deodorants may all act as precipitants. Identifying faulty sexual techniques or a relationship of attacks to masturbation calls for skilful history taking. It may also be difficult to persuade the patient that her sexual partner must be examined for evidence of balanitis. Yet efforts to extract an exact history are worth while because simple advice about avoiding precipitating factors usually produces a cure, and unnecessary antibacterial treatment and radiological and urological investigations are avoided. Frequency and dysuria starting in later years are often related to gynaecological problems such as prolapse, pruritis vulvae, vaginitis, or instrumentation after gynaecological surgery. Finally, the doctor must ask about analgesic intake and past tuberculosis since both analgesic nephropathy and tuberculosis of the urinary tract may present with frequency and dysuria.

Physical examination is not usually helpful. It should always include a vaginal and speculum examination (with a Sims's speculum) to allow inspection of the vaginal wall. A fresh clean-catch midstream urine specimen should be examined under the microscope for pyuria, red cells, bacteria, crystals, and casts, and it should be sent for culture. A high vaginal swab should not only be sent for routine culture but a transport medium—for instance, Stewart's medium—should also be inoculated since gonorrhoea may cause frequency and dysuria.

INDICATIONS FOR RADIOLOGICAL INVESTIGATION

Not every patient with frequency and dysuria need be referred for excretion urography. The work load would be unbearable and in any case the yield of treatable disease would be minimal. Radiological investigation may be confined to: (a) patients with bacteriuria aged less than 5 years since these children are in danger of developing renal damage, particularly if vesicoureteric reflux is also present; (b) patients with relapsing bacteriuria because the cause of the relapsing infection may be identifiable and amenable to correction; (c) patients with haematuria that continues after infection has been eradicated because the haematuria may be due to a cause other than infection—for example, polycystic disease of the kidneys or bladder cancer; and (d) patients with pyuria in the absence of infection or those who have persisting pyuria after infection has been treated because in both cases the sterile pyuria may indicate stones, analgesic nephropathy, or tuberculosis.

INDICATIONS FOR CYSTOSCOPY

The contribution of cystoscopy to diagnosis and management of the frequency and dysuria syndrome must be questioned. Some urologists consider this an indication for cystoscopy, but diagnostic labels such as "basal trigonitis" and "cystourethritis" contribute nothing to our understanding or management, and instrumentation exposes the patient to the danger of infection. Some urologists claim that the passing of a wide cystoscope may cure the condition. This has not been substantiated in controlled trials, nor has the value of internal urethrotomy been established. The only indications for cystoscopy therefore are haematuria or pyuria persisting after treatment of infection with negative findings on excretion urography.

GENERAL MEASURES

Many patients with frequency and dysuria fear that repeated attacks may damage their kidneys and that they may ultimately develop kidney failure. Long-term follow-up has failed to show such a progression. Patients are often helped therefore by being told that their fears are unfounded.

In all cases the doctor should identify and where possible attend to precipitating factors. For instance, when symptoms are precipitated by sexual intercourse advice on sexual technique to both partners, and to the patient on using a lubricant and emptying the bladder after intercourse may suffice to cure the patient. A single dose of an antibacterial agent taken after intercourse will also prevent the multiplication of bacteria that may have been introduced into the bladder urine. Patients should be advised to have a high fluid intake (three litres a day) since this enhances the hydrokinetic defences—the dilution of any antibiotic is insufficient to impair its antibacterial effect. The doctor should also explain the importance of regular and complete emptying of the bladder by suprapubic pressure, perineal hygiene, and avoiding nylon underwear. Vaginal discharge and pruritis vulvae should be treated—with simple barrier creams rather than powerful disinfectants.

TREATMENT OF PATIENTS WITH BACTERIURIA

Bacteriuria is relatively easy to treat and the subject has been dealt with recently.¹ Numerous potent antibacterial agents are now available (table I), and, provided that the pathogens are sensitive, cure rates above 90% may be expected with any of them. The initial course of treatment need not exceed seven days. Even three-day courses and single-dose treatments may clear bacterial cystitis.

The real problem in treatment is a high recurrence rate (fig 1). After a year half the patients who were initially cured have developed recurrent infection, which may be symptomatic. These recurrences are of two distinct types with different temporal relationships and implications for treatment. They may be caused by a relapse of the original infection—which usually occurs within a month of stopping the drug and signifies a failure of treatment—or by reinfection. This usually occurs more than a month after stopping treatment and is due to a different organism from the one originally isolated. It signifies a failure of the host defences. Identifying the type of recurrent infection demands serotyping of pathogens. This is not generally available, however, and for practical purposes a relapse may be assumed if infection recurs within a month of stopping treatment, and reinfection if the recurrence is longer delayed.

The causes of relapsing infection and suggested remedial actions are summarised in table II. When the cause of symptomatic relapse cannot be identified or cannot be eradicated long-

TABLE 1—Examples of drugs used to treat bacterial cystitis

Ampicillin	Nalidixic acid
Amoxycillin	Nitrofurantoin
Carfecillin	Penicillin V
Cephalexin	Pivampicillin
Cephadrine	Pivmecillinam
Co-trimoxazole	Sulphonamide
Carindacillin	Talampicillin

Response to treatment with seven-day course of co-trimoxazole in 110 patients with urinary tract infection.

term, low-dose suppressive treatment is indicated. This is best achieved by using drugs that are absorbed in the small intestine—for example, nitrofurantoin, 50 mg nightly—or very low doses of penicillins or cephalosporins—for instance, cephalexin, 62.5 mg nightly. Alternatively, drugs to which resistance of the bacterial flora of the bowel does not develop may be used—for example, hexamine mandelate, 1 g nightly. These drugs are best given at bedtime to prevent multiplication of bacteria in the stagnant bladder urine during this most vulnerable period.

Symptomatic reinfections are more widely spaced. They are best dealt with by providing the patients with a course of antibacterial drugs to be taken at the first sign of infection and with dipslides to be inoculated and sent to the laboratory. In this way morbidity is minimised yet bacteriological control is maintained.

TREATMENT OF PATIENTS WITHOUT BACTERIURIA

Treatment of patients without bacteriuria is the most difficult problem of all. The general measures outlined earlier should be put into operation. When symptoms are precipitated by sexual intercourse a trial of a single dose of an antibacterial agent—for example, one tablet or drapsule of co-trimoxazole—to be taken after intercourse is worth while since it is followed in some women by transient bacteriuria. Because concrete evidence of this is usually difficult to obtain, a therapeutic trial seems war-

TABLE II—Causes of relapsing urinary tract infection

Cause of relapse	Remedial action
Wrong choice of drug	When treatment is started before antibiotic sensitivity of pathogen is known choose drug on "best guess" principle after consultation with local bacteriologist
Inadequate duration of treatment	A 7-day course of treatment should be used—if compliance is likely to be poor use long-acting drug
Emergence of minority resistant strain	Retreat
Inadequate concentration of drug at site of infection	Use high-dose treatment
Stones	Removal of stones

ranted. But antibacterial agents should not be used in any other circumstances. If symptoms remain after correction of precipitating factors a trial of urinary alkalinisation with potassium citrate is worth while; the patient must be provided with litmus paper to ensure that alkalinisation is adequate. Until the pathogenesis of the syndrome is better understood, however, we are unfortunately left with some women in whom the symptoms persist.

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Letter from . . . New Zealand

Confusion about abortion

RICHARD SMITH

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In Britain there have been moves to limit the availability of abortion. In New Zealand they have already done this. Or have they? On 13 December last year, in the summer heat just before Parliament closed for the combined Christmas and summer holiday, "with breathtaking speed" (and almost unexpectedly) a new abortion law was passed in the small hours of the morning. It seemed to be a triumph for the anti-abortionists. It changed the process for obtaining an abortion and the grounds on which one could legally be performed. Under the new Act an abortion can be performed only in a pregnancy of under 20 weeks' gestation if "the continuance of the pregnancy could result in serious danger (not being danger normally attendant upon childbirth) to the life, or to the physical or mental health, of the woman or girl, and that the danger cannot be averted by any other means."

Incest and subnormality of the mother are specific grounds for abortion, but rape, the age of the mother, and fetal abnormality are not. Abortion was also redefined in the Act, and it seemed that, as a consequence, IUDs and menstrual extraction

both became illegal. J D Sinclair, professor of physiology at Auckland Medical School, somewhat lightheartedly illustrated the law as it was generally understood thus: "It will be illegal for a doctor to induce an abortion in a 55-year-old penniless spinster suffering from heart disease and bearing a mongol fetus resulting from rape. Her cardiac disease can be alleviated by bypass surgery; the renal complications can be treated by weekly dialysis; and the pulmonary complications by use of a respirator."

Into battle

In New Zealand, as elsewhere, abortion has long been an emotive and controversial issue. There are familiar battlelines of feminists (poorly organised and weak in New Zealand) versus the Catholic Church, which is also not numerically strong here. The anti-abortionists are well organised under the banner of the curiously named SPUC (everybody, including the members, pronounce the word to rhyme with that well-known Anglo-Saxon word, and usually with the same venom)—the Society for the Protection of the Unborn Child, or, as anti-abortionists have it, the Society for the Propagation of Unwanted Children. After the passage of the Act, SPUC greeted the new law as a major step forward in the fight for decency, while the Nurses Society of New Zealand called it "one of the most oppressive laws in the world." Most doctors were against the law. The president of the Auckland Obstetricians and Gynaecologists

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