neuropathy almost guarantees that the impotence is organic and irreversible. If tests of autonomic function are normal erectile capacity may usefully be measured directly by recording nocturnal erections during rapid eye movement sleep.^{8,9} With this technique a mercury-in-rubber strain-gauge is placed round the base of the penis and connected to a device which records erections during dreaming. When impotence is psychogenic nocturnal erections are normal, whereas patients with organic impotence have either absent or reduced erections during sleep. In one English study⁹ two-thirds of diabetic patients with "impotence" had nocturnal erections—though this does not necessarily mean that their impotence was psychogenic, since the test cannot measure the quality of the erection. What is measured may be penile tumescence which does not produce a sufficiently rigid erection for penetration. In well-financed centres overseas⁸ this difficulty is circumvented by having an observer who assesses the quality of the erection by hand.

Organic impotence due to diabetes is irreversible, and many doctors adopt a nihilistic approach to its treatment. Despite an early report by Schoffling *et al*¹⁰ that testosterone and chorionic gonadotrophin were effective, it is now generally agreed that all testosterone does is to increase libido without improving performance—making it a cruel treatment. Many diabetic specialists also regard formal psychiatric treatment as a waste of time, perhaps because in the past they have referred unsuitable cases. Nevertheless, psychological treatment, whether administered by the physician, psychiatrist, or sex therapist, has much to offer; Schiavi⁶ makes the point that mutual sexual satisfaction is possible without penetration and his therapeutic approach includes trying to change the attitude of the couple by emphasising sexual intimacy rather than performance.¹¹ Some diabetic men respond to sexual counselling with a marked improvement in erectile capacity, presumably because performance anxiety and "spectatoring" have been reduced.¹¹

Finally, there are couples for whom sexual satisfaction is inseparable from erection and penetration, and in such cases some form of penile prosthesis¹² may be the only acceptable solution. Nevertheless, surgery should be undertaken only after careful preoperative evaluation. Osborne¹³ suggests that one approach is to ask the patient: "How will your life be different if you undergo this procedure?" The answer may indicate those patients who have unrealistic expectations—and in whom the results of surgery are usually poor.

In the past the problem of impotence has been neglected in diabetic clinics. Many clinics are so busy and open that patients are inhibited from talking about their intimate problems. I suggest that the onus is on the diabetic physician to ask routine questions about sexual potency and that not to do so is just as negligent as not asking about chest pain or visual symptoms.

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Acne, hormones, and treatment

The main factor in acne is an increased rate of sebum excretion. Clinically the condition presents as a greasy skin and the process is under hormonal control.¹

The main stimulus to the production of sebum is androgen, which acts directly on the sebaceous gland²; in physiological doses oestrogens have little or no effect on the seborrhoea, but pharmacological doses of 50 µg or more will reduce the activity of sebaceous glands by suppressing pituitary function.³ Other hormones such as growth hormone and thyroxine play a small supporting part in maintaining the excretion of sebum.⁴ Yet, though it is well established that patients with acne have an increased rate of production of sebum, and that this correlates with the severity of the acne, the reasons for the association are not fully understood.¹ The defect might be due to an abnormality in available plasma androgens, an excessive rate of conversion within the gland to a more active androgen metabolite, or an exaggerated response of the gland to a given hormonal stimulus.

Most girls and women with acne just have acne: they show no other features of androgenicity such as loss of libido, hirsuties, irregular periods, or infertility. These clinical facts and the observations that the sebaceous glands of some patients convert testosterone to 5- α -dihydrotestosterone more effectively than those of controls have supported the suggestion that the primary defect in acne is within the sebaceous gland.^{5,6} Forstrom *et al*⁷ found an increased plasma concentration of testosterone in 47% of women with acne, and Lim and James⁸ found in 24% of patients an increase in total 17 β -hydroxy-androgens and in 32% an increase in free 17 β -hydroxy-androgens. Walker *et al*,⁹ however, could not confirm any increase in 17 β -hydroxyandrogens or free testosterone. One reason for the discrepancy in the data might have been the choice of controls and the age of the patient, as hormonal concentrations may vary considerably in adolescence. Recent data, however, have further supported the idea that there may be abnormalities in plasma androgens in patients with acne. A Scandinavian group¹⁰ has shown that women with severe acne have normal amounts of testosterone in their blood but reduced concentrations of sex-hormone-binding globulin, suggesting that the amount of free testosterone reaching the sebaceous gland may be increased in such cases. These data were confirmed in a further study on 38 women, where an increased plasma testosterone or reduced sex-hormone-binding globulin, or both, was found in about two-thirds, and almost half also had evidence of hyperprolactinaemia.¹¹ This group of patients was aged 18 to 32 with acne of late onset or persistent

acne. Neither the severity of the acne nor the rate of excretion of sebum was measured, but the controls were well matched. Nevertheless, 10 patients had irregular menstrual periods and 12 had hirsuties, which may suggest that many of these 38 patients had clinical evidence of abnormal androgen function.

The clear message is that we do not fully understand why patients with acne do have an increased sebum excretion rate; more basic research is needed. We do know, however, that a substantial fall in the rate of excretion of sebum is always associated with improvement in the acne. How much the secretion of sebum must be suppressed to produce clinical improvement is uncertain, but a reduction of 35% or more is probably needed to produce a satisfactory clinical response.

An oral contraceptive pill containing either 20 or 30 µg of oestrogen usually has no real effect on the woman's acne. A contraceptive pill with 50 µg of oestrogen will reduce the rate of excretion of sebum by 40%, and this is usually associated with clinical improvement.¹² The combination of ethinyl-oestradiol 50 µg with prednisone 5 mg (the latter taken at night to obtain maximum adrenal suppression) will reduce the rate by up to half, with clinical improvement in almost all cases.¹³

The most potent combination of all is probably ethinyl-oestradiol 50 µg and the antiandrogen cyproterone acetate (2 or 100 mg), which will reduce production of sebum by 50-75%. The treatment is given in the reverse sequential manner¹⁴—that is, the oestrogen is taken from the fifth to the 25th day and the antiandrogen from the fifth to the 14th day. Considerable improvement in the acne may be expected with this regimen, but (as with all the hormonal regimens) not until about the sixth week of treatment. The production of sebum may also be reduced by up to 90% without hormonal treatment: oral 13-*cis*-retinoic acid, which affects sebaceous gland differentiation, is most effective in treating patients with antibiotic-resistant acne.¹⁵

No successful topical antiseborrhoeic treatment is available; several formulations have been tried without effect. Their failure may be due either to poor percutaneous absorption or to a metabolite of the antiandrogen being required to mediate the desired effect. Alternatively, the plasma concentration of androgen reaching the sebaceous gland may easily overwhelm the local antiandrogen effect.

In practical terms, which patients should be considered for hormonal treatment? The answer is only those who fail to respond to adequate conventional treatment, since it has fewer side effects than treatment with either hormones or retinoids. Conventional treatment means a minimum of 1 g a day of oral tetracycline or erythromycin together with topical preparations such as benzoyl peroxide given for a minimum of four to six months.

Only a few patients with acne—about 2-5%—will need to be considered for treatment with hormones or retinoids. 13-*Cis*-retinoic acid, now available on a named-patient basis, may be used in both sexes, whereas hormonal treatment is usually indicated only for women. Should a patient with acne not respond well to conventional treatment after three to four months and already be taking the contraceptive pill, then (if there are no contraindications) its ethinyl-oestradiol content should be increased to 50 µg. If after a further three months there is no response, or if the patient is not already taking the contraceptive pill, a hormone combination should be prescribed: either 50 µg ethinyl-oestradiol and 5 mg oral prednisone or the ethinyl-oestradiol-cyproterone acetate combination, which is now available in a twin pack.

Finally, we need to remember that comparative studies of

these three regimens—conventional treatment, hormones, or retinoids—have not been reported; until these have been performed absolutely reliable therapeutic guidelines cannot be given.

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Deaths after intravenous regional anaesthesia

Since 1979 the Scientific and Technical Branch of the DHSS has been informed of five deaths resulting directly from the use of intravenous regional analgesia. The technique, originated by Bier (hence Bier's block), has been recommended as an alternative to general anaesthesia for operations on the limbs, principally the arms.¹⁻⁶ An intravenous cannula is inserted, the limb exsanguinated, a tourniquet applied, and the veins filled with local anaesthetic.

Some facts are known about the accidents. The patients were all healthy and being treated for minor conditions in accident and emergency departments. Two were boys, aged about 11. In each case a different automatic tourniquet was used; the drug used was bupivacaine; and the doctor setting up the block was a senior house officer in accident and emergency and was due to perform the operation without help from another doctor. In the three most recent cases the Scientific and Technical Branch was contacted to examine the equipment and found that it could have been used satisfactorily but that the cuff was deflated at some point when it should not have been. A hazard warning (HN(82)7) was issued, giving general advice that people should be familiar with the apparatus