

to the hair root to destroy it before lifting out the hair. While it might be possible to gain some practice on a clearly visible site on the leg, the sheer physical impossibility of probing, on the face and neck, into a tiny follicle which may point in any direction and, in a situation where the operative hand must prevent vision of the site in the pre-requisite mirror, must deny any claim to ease or safety. The things likely to have permanence will be the multiple pitted scars due to extra follicular burning and infection and, of course, the hirsutism which the gadgets are claimed to cure.

As with the many unskilled purveyors of short-wave faradic electrolysis, these manufacturers can safely bank on the fact that distressed, embarrassed, and scarred women and girls will never face the possibility of litigation. What is worse, perhaps, from the aspect of medical responsibility, or lack of it, is that these firms may be able to produce a sheaf of certificates signed by doctors, largely in general practice, if, as commonly happens, completion of such a certificate is required by them prior to their effecting a sale to a young person.

The B.M.A. Dermatologists Group Committee condemns these articles as unsafe, even in trained hands, and begs its medical colleagues neither to recommend them nor tacitly to encourage their sale to young girls by signing any required certificates.—I am, etc.,

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Propranolol-induced Hypoglycaemia and Myocardial Infarction

SIR,—The blood glucose is usually normal or increased following myocardial infarction. A case of myocardial infarction with hypoglycaemia is described.

The patient, a 71-year-old man, was admitted to the coronary care unit of Hammersmith Hospital on 29 December 1971 with a two-day history of an upper respiratory tract infection and increasing angina. In 1967 because of troublesome angina propranolol 40 mg q.d.s. was started with good effect. During the day of admission 80 mg propranolol had been taken. Food intake was normal, but fluid intake had been reduced on 29 December. There was no past history of diabetes mellitus.

On examination he was pale, sweating, cyanosed, and had cold upper and lower limbs. Though initially responding to command he later responded only to Achilles tendon pressure. The pulse was regular 76/min; blood pressure 180/120, falling to 80/40 after 5 mg diamorphine was given intravenously, and on auscultation a left ventricular third and atrial heart sounds were heard. Widespread inspiratory and expiratory rhonchi were present in both lung fields. No limb reflexes or plantar response could be elicited. Serial E.C.G.s from the time of admission showed the pattern of a developing anterior myocardial infarction (confirmed) and in addition electrical alternans. Chest x-ray showed a normal sized heart and prominence of the upper lobe veins. The blood sugar was 38 mg/100 ml; venous serum insulin 3.7 μ units/ml (normal < 10 μ units/ml); no ketones were detected

in the urine; blood urea was 80 mg/100 ml; K 6.9 mN, and P.C.V. 45%, subsequently falling to 39%. The urinary adrenaline was high during the first 36 hours.

Intravenous glucose (25 g) produced a dramatic improvement in his mental state and he talked rationally. Over the next few hours limb temperature, which had been falling, returned to normal; the left ventricular third heart sound and electrical alternans disappeared. Acute bronchitis and left heart failure were treated in the usual manner and propranolol discontinued. Three weeks after admission a 48-hour fast while receiving propranolol resulted in a blood sugar of 32 mg/100 ml without symptoms at 36 hours. The serum insulin was low throughout the fast.

Propranolol-induced hypoglycaemia is well described in insulin dependent diabetic patients.¹ However, the combination of physical findings due to propranolol-induced hypoglycaemia and myocardial infarction appears to be unrecorded. This treatable condition, which presents in many respects like progressive cardiogenic shock, should be excluded in patients taking propranolol who sustain a myocardial infarction.—We are, etc.,

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¹ Kotler, M. N., Berman, L., and Rubenstein, A. H., *Lancet*, 2, 1966, 1389.

Radiation Menopause

SIR,—Your leading article on "Radiation Menopause" (13 May, p. 365) deserves comment because of failure to distinguish between the menopause induced by radium and that induced by x-ray therapy. The following observations are based on a series of over 1,000 menopausal irradiations using x rays compared with a smaller series treated by intrauterine radium. The series started in 1950 and throughout the whole period dosage has been consistent, giving a central pelvic dose of 200r, 300r, or 400r to the over-50s, the 45 to 50, and the under 45 years of age respectively, using 250 kV x rays. Those treated by radium received a 50 mg intrauterine tube for 48 hours. In all cases in both groups a D. and C. showing non-malignant endometrium was obtained prior to treatment.

The first distinction to be drawn between the groups is in the level of dose received by the endometrium. The x-ray dose may be regarded as the maximum received for no allowance has been made for bone absorption in the pelvis. In 48 hours from radium the dose which could be received by the endometrium ranges from over 10,000r to under 2,000. Since somatic mutation is under consideration the differing overall times of treatment have no significance, and thus the radium-treated cases received dosage ranging from 5 to 50 times greater than those treated by x rays.

The second distinction is drawn from an analysis made in collaboration with the Birmingham Cancer Registry. With a virtually complete register of endometrial and cervical malignancy, it has only been possible to find a single instance of gynaecological malignancy arising after menopausal irradiation by x rays, whereas six cases in

the smaller series are known to have developed the disease. This analysis is to be published shortly. Meanwhile one can only recommend x-ray methods where a radiation menopause is advisable in the certain knowledge that the overall risks are very much smaller, and condemn radium techniques as inducing a significant risk of subsequent pelvic malignancy.—I am, etc.,

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SIR,—Your leading article "Radiation Menopause" (13 May, p. 365) is ambiguous in that at no time does it distinguish between induction of a menopause by intracavitary radium and that by external irradiation using modern megavoltage equipment.

We would agree that hysterectomy is the treatment of choice for dysfunctional bleeding, but if for any reason surgery is not feasible external irradiation is simple, reliable, and safe. The side effects and sequelae described by Bamford and Wagman¹ from this hospital relate only to the insertion of intracavitary radium. Although Bamford and Wagman do not mention it in their article the radiotherapy department here abandoned this procedure for this purpose 10 years ago, and we would join them in condemning it.

Preliminary examination under anaesthesia and curettage remain essential. The theoretical convenience described of radium insertion at the same time is nullified by the need to await negative histology on the curettings. We agree with the need for careful follow up after radiation menopause by either method.—We are, etc.,

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¹ Bamford, D. S., and Wagman, H., *Journal of Obstetrics and Gynaecology of the British Commonwealth*, 1972, 79, 82.

SIR,—Your leading article "Radiation Menopause" (13 May, p. 365) rightly concludes that hysterectomy is to be preferred to irradiation for intractable dysfunctional uterine haemorrhage. In discussing the incidence of genital tract malignancy following irradiation, however, no distinction is drawn between those treated with radium and those subjected to external radiotherapy.

Recently, two independent surveys of the long-term effects of radiation menopause were published. In the first¹ 2,054 patients who had received external radiotherapy were followed up for 24 years; in the second² 1,817 patients treated by radium insertions had been followed up to 40 years afterwards. In the analysis of these two series of cases the only significant findings were in the differing incidence of subsequent uterine cancer, seven deaths occurring in those treated by x-ray therapy against an expected 5.46, whereas 61 died of this disease when radium had been used to control the haemorrhage, the expected incidence being approximately 11 deaths.

The cases reported by Bamford and Wagman, whose paper³ formed the basis of