Is Arterial Puncture Dangerous?

SIR,—Professor W. W. Mushin asks (1 August, p. 310) about the complications of arterial puncture. This procedure is now being employed increasingly for radio-diagnostic purposes, and I would like to record the experience of one of my patients.

A man aged 48 years developed recurrent episodes of urinary infection with epididymo-orchitis. An intravenous pyelogram showed a filling defect in the lower pole of the right kidney. The surgeon was unable to perform ureteric catheterization, and advised a renal arteriogram to differentiate between a cyst and a neoplasm. Arteriography was performed at a teaching hospital by cannulation of the right femoral artery, and disclosed a single cyst of the right kidney.

Unfortunately arteriography provoked a complete occlusion of the right femoral artery, causing severe intermittent claudication in the right leg. He was then treated with anticoagulants for three months, with some benefit, but he remained considerably disabled. Finally an exploratory operation revealed occlusion of both the right common femoral and the right external iliac arteries by thrombo-atheromatous clots. Thrombo-endarterectomy was performed with a good resulting blood flow. The following day the wound had to be reopened to evacuate a retroperitoneal haematoma containing four pints (2.3 litres) of blood. When the wound had finished suppurating he made good progress and returned to work after six months of iatrogenic illness.

All specialized procedures have their complications, which are especially apparent to general practitioners because they look after the sufferers afterwards. Arteriography is not to be enterprised nor taken in hand unadvisedly or lightly, but only when the value to the patient of the information sought will outweigh the risks of the technique.—I am, etc.,

Bungay, Suffolk.

W. M. JORDAN.

SIR,—Your readers may be interested in information of a more factual nature regarding the incidence of complications resulting from arterial puncture. The following observations are due to be published in the near future, but in view of the interest aroused by Professor Mushin's letter (1 August, p. 310) we feel that it may give your readers a broader perspective of the problem than the small number of cases reported so far.

490 patients who were candidates for open-heart surgery were submitted to left-heart catheterization. 92 of these had aortic catheters inserted via the right or the left femoral artery by the percutaneous puncture technique.¹ The remainder had a Cournand indwelling arterial needle inserted into either the right or left brachial artery. Since the aortic catheter and the Cournand needle are much larger than the usual arterial puncture needle chosen for blood sampling, and since the diagnostic manoeuvres involved prolonged intra-arterial manipulation, arterial complications were more likely to be encountered. There were two cases of local thrombosis of the femoral artery in the 92 patients with percutaneous aortic catheterization; one was a small child who required a relatively large catheter for adequate angiographic studies. The risk of thrombosis was realized and accepted, as it was much less than the risk of submitting the child to surgery without excluding the suspected aortic lesion.

In the group of patients (numbering 388) who had an intra-arterial Cournand needle inserted there was a serious complication in only one. The patient developed an acute bleeding state

(? fibrinolysis) and bled from the catheter cut-down site as well as the arterial puncture site. A haematoma around the brachial artery compressed the artery and led to an ischaemic contracture of the hand. Slight local tenderness and bruising commonly followed the arterial puncture.

This experience shows that arterial puncture commonly causes discomfort and may produce serious complications. It is "safe" enough for use as a diagnostic procedure when the information it gives is essential for the patient's welfare, but it is not acceptable as a research procedure.—We, are, etc.,

Charing Cross Hospital,
London W.C.2.

H. IKRAM.
P. G. F. NIXON.

REFERENCE

- ¹ Seldinger, S. I., *Acta radiol. (Stockh.)*, 1953, 39, 368.

Drugs for Depression

SIR,—Your leading article, "Drugs for Depression" (29 August, p. 522) considers that to avoid uncertainty in treating depression "it is important to have a clear classification." The author then proceeds to formulate a classification singularly lacking in clarity, since he, admittedly, includes certain anxiety states within the category of reactive depression. The reported successful treatment of reactive depression with barbiturates and Drinamyl in lifelong inadequate personalities seems further to confirm the nosological confusion.

While it might be considered my personal viewpoint that there are no indications for prescribing potentially dangerous drugs such as Drinamyl or iproniazid, there is less controversy about the use of tranlylcypromine. The dangerous side-effects of this drug were reported in the *Lancet*¹ and have been circulated to doctors by the Dunlop Committee. It would seem, therefore, ill-advised to recommend it as "a useful drug in general practice for the mildly depressed. . ."

It is unfortunate that a desire for therapeutic clarity and precision should lead to the propagation of an unsubstantiated classification and the recommendation of dangerous drugs of doubtful therapeutic efficacy.—I am, etc.,

Middlewood Hospital,
Sheffield 6.

SIDNEY LEVINE.

REFERENCE

- ¹ *Lancet*, 1964, 1, 540.

* * We agree that the fact that a drug can have dangerous side-effects is a strong reason for ensuring that all doctors who use it are aware of the risks. But if a drug is useful where no other will do as well this is a reason for helping doctors to know when to use it and on what sort of patients. Since most cases of depression, including those mixed with anxiety, are treated by general practitioners at the present time we consider that they are entitled to be informed about these drugs.—Ed., *B.M.J.*

SIR,—I would like to support Dr. A. D. Forrest's letter (19 September, p. 756). It is refreshing to read at last some common sense about depressive illness. For too long have we endured from most of the textbooks and all the drug advertisements the view that

"endogenous" and "exogenous" depressions are diseases created in the beginning which walked, two by two, out of the Ark, each bringing forth after his kind. This "Noah's Ark" attitude to psychiatry has neither practical use nor scientific basis. The depressions are all more or less "endogenous" or "exogenous," not either one or the other, and the practical point to be decided in their diagnosis is their severity.

I once classified my depressive cases into the previously accepted categories of "endogenous" and "exogenous," and calculated the incidence of death of parents before the age of 15 in each group, and I found that the "endogenous" ones had a higher orphanhood rate than the "exogenous," thereby suggesting that in this respect the "endogenous" depressions were more "exogenous" than the "exogenous" ones.

The time has come when the "endogenous" and "exogenous" depressions should not be allowed out in print without the protection of quotation marks on each side of them.

I should also like to support Dr. Forrest's condemnation of Drinamyl (each tablet contains dexamphetamine sulphate 5 mg. and amylobarbitone 32 mg.).—I am, etc.,

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Psychiatry,
Charing Cross Group of Hospitals,
London W.6.

FELIX W. BROWN.

Action of Noradrenaline

SIR,—On several occasions during the past year the action of noradrenaline on the adrenergic receptors has been described in your pages in a possibly misleading fashion.

In a leading article on the effects of pronethalol (16 November, p. 1216) you briefly described the Ahlquist theory of adrenergic receptors. You then bewildered many of your readers by stating: "Noradrenaline is an example of a substance which acts primarily on the alpha receptors; it is thus a powerful vasoconstrictor and causes little or no vasodilatation or stimulation of the myocardium."

On 9 May (p. 1227) the following sentences appeared in Dr. B. N. C. Prichard's discussion of the hypotensive action of pronethalol: "The beta receptors include the adrenergic effects on the heart and relaxation of bronchial muscle; the alpha group include the contraction of smooth muscle, such as vasoconstriction in certain vascular beds. Noradrenaline was found to have almost entirely alpha effects. . ."

Finally in "To-day's Drugs" (29 August, p. 555) while discussing pronethalol you again imply that noradrenaline has little action on beta adrenergic receptors and state that it "causes . . . slowing of the heart."

It is perfectly true that in vascular smooth muscle noradrenaline acts primarily on the alpha adrenergic receptors and that the drug is therefore a strong vasoconstrictor in most of the peripheral vascular beds. On the other hand, it is quite false that noradrenaline causes little or no stimulation of the myocardium. In innumerable studies on denervated hearts or on isolated heart-muscle preparations noradrenaline has been shown to have strong positive chronotropic and positive inotropic actions on the myocardium; it is clearly a powerful stimulator

of the cardiac adrenergic receptors (beta adrenergic receptors in Ahlquist's terminology). When noradrenaline is infused at a moderate rate into the intact circulation (of the order of 20 $\mu\text{g./minute}$ in man) one usually observes a slight decrease in heart rate and in cardiac output. These effects of noradrenaline are entirely indirect; they are reflex effects originating from the sino-aortic baroreceptors which are activated by the peripheral pressor action of the agent. At a high rate of administration the reflex effects are overwhelmed, the direct effects of noradrenaline on the heart predominate, and the heart rate rises above normal. When the action of the cardiac moderator reflex is prevented (atropinization, inactivation of the baroreceptors, administration of a blocker of the alpha adrenergic receptors) the direct cardiac effects of noradrenaline are apparent even at low rates of administration.

It would be most unfortunate if Ahlquist's suggested classification of adrenergic receptors were misunderstood to mean that sympathomimetic amines which are primarily alpha-receptor stimulants in the peripheral blood-vessels cannot have highly effective actions on the heart. A bit of reflection as final evidence: since noradrenaline is the sympathetic transmitter substance, how could the heart respond to sympathetic stimulation unless the beta adrenergic receptors in the myocardium were stimulated by noradrenaline?—I am, etc.,

Dept. of Pharmacology, JAN KOCH-WESER.
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Drug Dependence

SIR,—As pointed out in your leader on drug dependence (22 August, p. 461), confusion surrounding the subject still has remained despite the World Health Organization's attempt clearly to differentiate between drug addiction and drug habituation. Such confusion, for instance, was evident in the frequent verbal quarrels as to whether the amphetamines were habit-forming or addictive drugs. However, the attempt to make a clear pharmacological differentiation between psychological dependence ("habituation") and physical dependence ("addiction") certainly had (and still has) its merits, as for instance in regard to the question of whether sudden withdrawal is possible, as in the case of stimulating drugs, or whether tapering-off is necessary, as with barbiturates.

Certainly, in the example of alcoholism which you quote, the difference between psychological and physical dependence proved of great importance in Jellinek's recent classification of the various types of alcoholism, in which he describes only two of them as "addictions"—namely, those producing pharmacological dependence. One of them is the "loss of control" variety (gamma alcoholism).¹ Dr. Davies's finding of a number of alcohol addicts who were able to return to normal drinking is certainly of high theoretical interest, but as Dr. Davies, in spite of his findings, states, "all patients should be advised to aim at total abstinence." This, certainly, is the almost unanimous view of many European and American experts, with wide experience, with whom I discussed this question on recent International Conferences, in spite of the exception quoted in your

report on the European Conference in the same issue (p. 502).

Incidentally, it is important to keep in mind that "loss of control" does not mean that the alcoholic will get drunk on each and every occasion when he starts drinking; rather does it mean that he could never be quite certain that he would be able to stop once he had started to drink on a given occasion. For example, it is not very uncommon to meet people who, for a while, are able to drink "in moderation" when switching from spirits to beer, or when drinking only with meals, or when drinking only in company, etc. However, sooner or later—and as a rule fairly soon—this attempt becomes too much and they resort to the uncontrolled drinking.

One might, perhaps, speculate on the possibility of a certain threshold of blood-alcohol concentration, varying from person to person, and in the same person from time to time, below which the alcoholic could drink without losing control (depending possibly on psychological, psycho-social, psychosomatic, or chemical factors) but beyond which the "loss of control" becomes effective. However, quite clearly, there is a need for further research and for attempts at an even finer differentiation between the various types of alcoholics.—I am, etc.,

St. Bernard's Hospital,
Southall, Middlesex.

M. M. GLATT.

REFERENCES

- 1 Jellinek, E. M., *The Disease Concept of Alcoholism*, 1960. Yale Centre of Alcohol Studies, Yale Station, New Haven, Conn.
- 2 Davies, D. L., *Quart. J. Stud. Alcohol*, 1962, 23, 94.

Code for Drugs

SIR,—As dispensing doctors we have recently noticed the increasing tendency of drug firms to mark individual tablets and capsules with the brand name or symbol of each company. This has undoubtedly been stimulated by the introduction into this country of tablets and capsules of similar appearance manufactured on the Continent.

We had not until now realized that it was possible to mark a sugar-coated tablet or a capsule, but now that the problem apparently no longer exists we feel it is appropriate to investigate the possibilities of introducing a comprehensive individual tablet-identification code using a series of letters and numbers.

Such a code would enable a doctor, chemist, nurse, or other qualified person to identify immediately without doubt an otherwise anonymous tablet by reference to a standard key. This information we believe would prove of inestimable value in the day-to-day use of drugs, apart from the more dramatic and potentially life-saving effects in cases of suicide and accidental poisoning. The individual companies could, of course, retain their own tablet markings in addition to the code. A recognized body like the Dunlop Committee, in association with the Formulary Committee and the pharmaceutical industry, could no doubt devise, assign, and publish code numbers for each drug.

The adoption of such measures would seem to us a rational step in the control and use of drugs. The advice and co-operation of the pharmaceutical industry, so important in such a system, would, we feel, go far to

improve the "public image" of that industry, at present the target of so much criticism.

Obviously there will be practical difficulties, but as doctors intimately concerned in the prescription, supply, and identification of an ever-increasing range of drugs, we feel such a scheme merits earnest consideration by the profession and pharmaceutical industry.—We are, etc.,

Grantham, Lincs.

F. C. CLOUTING.
J. WIGHTMAN.

Plastic Shoes for Ultra-clean Wards

SIR,—In discussing the provision of an ultra-clean ward, Dr. K. D. Bagshawe (3 October, p. 871) states: "Other outstanding problems that require further study are the design of suitable clothing and especially of sterilizable footwear." I wish to suggest that the solution of the problem of sterilizable footwear is to be found in the field of plastic shoes.

Shoes of flexible plastic are currently made in Australia and freely available in Sydney, but do not appear to be on sale in London. I have seen two types—(1) Roman sandals, and (2) slipper shape without fastening. These shoes are cheap, very hard-wearing, and comfortable, except that because the plastic is impervious to fluid perspiration tends to collect under the sole of the foot. This can be minimized by wearing cotton socks. My own pair was originally obtained for use as wading shoes, to protect my feet while studying seashore animals. They have successfully withstood repeated prolonged immersion in sea-water. Because the shoes are washable I have used them as operating-theatre shoes. My practice was to rinse the insides and scrub the outsides of the shoes with soap and water. I have not yet tried to sterilize them completely, but suggest that after washing they could be soaked in an antiseptic solution. Autoclaving might be possible if care is taken not to damage the shoes while hot and therefore soft.

Plastic shoes of slipper form can be changed quickly and easily when walking from a clean area into a dirty area or vice versa, the change being accomplished if desired without touching the shoes with one's hands.—I am, etc.,

London W.12.

F. W. D. ROST.

Circumcision and Cervical Cancer

SIR,—Your leading article on "Circumcision and Cervical Cancer" (15 August, p. 397) is very important for the Turkish population, 99% of whom are Moslems and 96% fully circumcised. The Moslem women in Yugoslavia mentioned in your article live usually in areas where many of the men are not circumcised, and these facts make assessment of the problem difficult. Turkey furnishes a suitable area of investigation in this field, since noncircumcised men are few and they are settled in definite regions of the country. Intercourse between Moslem women and the noncircumcised men is therefore unlikely and in some parts impossible. The incidence of cervical cancer among Turkish women is therefore of some interest. Our survey^{1,2} of the material from different hospitals in Turkey has led us to the conclusion