Current Practice

ANY QUESTIONS?

We publish below a selection of questions and answers of general interest.

Defective Circulation and Growth of Limb

Q.—*What is the effect on the growth of a limb of almost complete occlusion of its main artery? In particular I have in mind a 6-day-old child whose femoral artery was damaged by femoral venepuncture (the leg is cool and pulseless but not gangrenous) and a 16-year-old boy with claudication in one limb following injury two years ago.*

A.—The effects of almost complete occlusion of the main artery of a limb depend on the site of occlusion and the degree to which a collateral circulation develops. In the case of a 6-day-old child with a femoral artery damaged by puncture the cool and pulseless, but not gangrenous, limb suggests that there is severe degree of damage to the artery, and the absence of a pulse in the distal part of the limb suggests that there is complete occlusion of the artery. The absence of gangrene and the coolness of the distal part of the limb suggest that collateral circulation is adequate for survival but that there may be little reserve.

If the damage was due to femoral venepuncture the possibility of an arteriovenous fistula must be considered, and there are several other possible complications of the arterial damage. It would therefore be unwise to forecast the effects of the injury on growth.

The effects on growth in the case of the 16-year-old boy with claudication after an injury two years ago are not likely to be very severe, because not much more growth would be expected in the average boy of that age.

Goitrogens

Q.—*What drugs are apt to cause goitres and are therefore classed as "goitrogens"?*

A.—Goitrogens are substances which interfere with the synthesis of thyroid hormones, and the resulting goitre is mediated by an increased output of thyroid-stimulating hormone by the pituitary. If the block in hormone synthesis is incomplete thyroid hypertrophy compensates for the defect, whereas if the block is complete compensation is inadequate and hypothyroidism occurs. Rarely goitrogens may cause hypothyroidism without thyroid enlargement.

Goitrogens can be divided into two groups depending on the mechanism by which they interfere with thyroid hormone formation. The inorganic ions, perchlorate, thiocyanate, and nitrate, interfere with the trapping of iodide by the thyroid, possibly because they have a similar molecular volume to the iodide ion. Potassium perchlorate is the only drug in the group to have found popularity in the treatment of hyperthyroidism, but it is not now the drug of choice because of reports[1 2] of aplastic anaemia after its use. Since these drugs interfere with iodide-trapping by the thyroid their antithyroid effects can be overcome by increasing iodide intake. It is therefore dangerous to administer iodides to patients rendered euthyroid by potassium perchlorate, since recurrence of hyperthyroidism may rapidly occur.

Many compounds interfere with the iodination of tyrosine, and some of these drugs may also affect the conversion of iodotyrosines to iodothyronines and the peripheral breakdown of thyroid hormones. Their precise mechanism of action is unknown. The commonly used antithyroid drugs methyl thiouracil, propyl thiouracil, methimazole, and carbimazole are all thiourylene derivatives. Substituted benzene derivatives such as phenylbutazone, para-aminosalicylates, and resorcinol are much weaker goitrogens. The sulphonylurea antidiabetic drugs carbutamide, tolbutamide, and, possibly, chlorpropamide have a mild antithyroid action in man. Iodine in excess can also cause goitre and hypothyroidism in occasional patients with some underlying thyroid defect.

All goitrogens interfere with the uptake of radioiodine by the thyroid, but it is important to note that many other drugs may also affect the routine tests of thyroid function.[3]

REFERENCES

1 Krevans, J. R., Asper, S. P., jun., and Rienhoff, W. F., jun., *J. Amer. med. Ass.*, 1962, **181**, 162.

2 Johnson, R. S., and Moore, W. G., *Brit. med. J.*, 1961, **1**, 1369.

3 *Clinical Aspects of Iodine Metabolism*, edited by E. J. Wayne, D. A. Koutras, and W. D. Alexander, 1964. Blackwell Scientific Publications, Oxford.

Favourable Climate for Asthma

Q.—*Are there any localities in Britain where the climate is favourable for children who suffer severely from asthma and bronchitis during the winter months?*

A.—Children who suffer from bronchitis and asthma particularly in the winter months will probably do best where the air is clean and the climate mild. The south coast of England appears to be suitable in many cases of this type. The sulphur-containing irritants found in the air of towns are here reduced and the risk of cross infection may well be diminished.

While the climate from Bournemouth to the south Devon coast is probably milder than further east in Sussex, asthmatic patients particularly often do better on the Sussex coast rather than in Devonshire, particularly if they have an allergic sensitivity to pollens and mould spores. Asthmatics of all ages, however, often show inexplicable preferences for one place rather than another, and if moving house is contemplated it is wise to spend a trial period in the locality selected before taking a final decision.

It must also be remembered that other factors, including overcrowded living conditions, the presence of other members of the household who carry pathogens in their upper respiratory tract, and exposure to cold, may also be playing a part in maintaining symptoms in this type of case.

Schistosoma Cercariae in Deep Water

Q.—*Does immediate drying after bathing help to prevent infestation with schistosoma? How far out from the shore of lakes do the cercariae of Schistosoma mansoni swim, and is it safe to bathe in the middle of a lake?*

A.—The only certain way to avoid contracting schistosomiasis from bathing in an infected lake is to refrain from entering it. Immediate drying after exposure would remove any cercariae which had not already entered the skin, but, since penetration is rapid, the majority would already have got inside and the effect of such a precaution is likely to be negligible.

Infected snails have been discovered in quite deep water several hundred yards from the shore of Lake Victoria, and freedom from danger cannot be guaranteed in the vicinity of any endemic locality. However, there should be little risk of contracting the infection by bathing from a boat half a mile (0.8 km.) or more from the edge of a lake.

Carcinogenicity of Oral Contraceptives

Q.—*Would intermittent, short-term courses of oral contraceptives be more likely to be carcinogenic than long-term courses?*

A.—This question invites an answer that oral contraceptives are carcinogenic. There is no evidence that that is so. Indeed, Pincus and Garcia[1] have shown that the incidence of "suspicious" vaginal smears is less in women taking oral contraceptives than women who are not, and significantly less than in women using intravaginal foams and jellies and intrauterine devices.

REFERENCE

1 Pincus, G., and Garcia, C-R., *Metabolism*, 1965, **14**, 344.

Correction

In the report of the Hastings Centenary Clinical Meeting at Worcester (30 April, p. 1098) it was stated on page 1104 that Dr. I. McD. G. Stewart put a question to the "Brains Trust." We are informed that Dr. Stewart was not at the meeting, and we regret the error.