

Osteoarthritis and Pantothenic Acid

Sir,

It has been recorded¹ that an acute deficiency of pantothenic acid in the rat causes a pronounced failure of cartilage growth and, as the deficiency deepens, a marked osteoporosis of bone, together with calcification of cartilage and finally with the formation of osteophytes and of lipping. The similarity between the two conditions, (1) the "worn joint" of osteoarthritis and (2) acute deficiency of pantothenic acid in the rat, was striking.

More recently, evidence has also been related suggesting that inherited metabolic abnormalities and/or dietary factors may play an important part in the aetiology of osteoarthritis.²

It was decided therefore to treat all cases of osteoarthritis—the "worn joint" type only—with pantothenic acid, 12.5 mg. mane nocteque, together with a supplement of the Vitamin B Complex, e.g., Tab. Becosym, also mane nocteque. Each case was diagnosed by the history of pain and/or stiffness, by the presence of the tell-tale crepitus in the affected joint and/or by x-ray examination. An attempt to provide controls did not succeed, mainly because the patients so frequently failed to co-operate; however, as will be seen, they did act, in some cases, as their own controls by failing to maintain the treatment and thereby relapsing, only to respond again after resumption of the therapy.

Results. Out of 26 cases treated over a period of 18 months, 20 (77 per cent) responded within 14 days after commencing treatment with what appeared to be significant improvement, i.e., they lost their stiffness and their pain either ceased entirely or else showed considerable improvement. Ten (38 per cent) of the cases incurring a favourable response subsequently relapsed on stopping the treatment, only to improve once more on resuming therapy. Two of the failures, both of whom had severe osteoarthritis in their knee joints and both of whom had had a course of radiotherapy for their disability, failed completely to respond and treatment was discontinued after a period of one month. The third failure improved after the third week when it was noticed that the patient was also suffering from moderate hyperkeratosis of the skin, a condition which responded, as did the osteoarthritis, when Caps. Vitam. A et D, B.N.F. were also taken mane nocteque. Three other cases, all of whom had advanced osteoarthritis of the right hip joint as revealed by x-ray examination, showed only slight improvement with this treatment. The impression has thus been formed that, if the case is treated early before signs of advanced disease have developed, a reasonable response can be expected. On the other hand, no measurable improvement in the incidence or extent of joint crepitus

was noted, although in some instances, some improvement did seem to occur.

Side effects. Three cases complained of the gradual development of general asthenia and were especially leg weary. The substitution of Tab. Pyridoxin 12.5 mg. mane nocteque for the pantothenic acid resulted in a rapid recovery. It seems possible that a vitamin imbalance may have been at fault in these cases.

Discussion. The possibility that osteoarthritis of the "worn joint" type may be due, in part at least, to a metabolic derangement in respect of pantothenic acid and/or of co-enzyme A, would seem to receive some support from the fact that (a) the occurrence of a simple primary deficiency of pantothenic acid is unlikely since an ample supply of the vitamin is available in the diet³ and (b) the known symptoms and signs of pantothenic acid deficiency^{4, 5} e.g., general asthenia, paraesthesia and the "burning foot" syndrome, are not normally encountered in severe osteoarthritis.

Dundee.

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My thanks are due to Roche Products Limited for a generous supply of pantothenic acid.

Animal Protein and Atherosclerosis—Sequelae

Sir,

1. *Antibiotics.* Evidence has already been related showing a close correlation between (a) the mortality from atherosclerosis and the consumption of heated animal protein^{1, 2} and (b) between this same mortality and the intake of cyanocobalamin.^{2, 3}

In this connection, it is well known^{4, 5} that the exhibition of antibiotics, particularly penicillin and aureomycin, frequently causes an increased absorption of freed cyanocobalamin from the colon; in fact, penicillin has been used for this purpose in the treatment of nutritional pernicious anaemia.⁹

It is equally well known^{6, 7, 8} that iodinated casein blocks the absorption of cyanocobalamin from the bowel. Therefore, since