There is no easy way to control measles in the tropics. Success will depend on many factors including increased funding, a more "robust" vaccine, an improved "cold chain," better nutrition, a more effective health infrastructure, and acceptance of the programme by the community.

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Anticonvulsant osteomalacia

Despite the many years that anticonvulsant drugs have been used, only during the last decade have reports of biochemical or radiographic features of rickets[1 2] drawn attention to their possible adverse effects on bone metabolism. Generally such changes are mild and subclinical, being detected only by relatively sensitive techniques, but florid cases of rickets or osteomalacia may sometimes occur.[3 4]

An important metabolic consequence of anticonvulsant therapy is the induction of hepatic mixed oxidases.[5] These increase the catabolism of both dietary and endogenously produced vitamin D and divert it towards biologically inactive metabolites.[6 7] In consequence body stores of vitamin D are depleted and serum concentrations of 25 hydroxy-vitamin D fall[8 9]—changes presumably reflected in decreased production of more active metabolites such as 1·25 dihydroxy-vitamin D. When anticonvulsant drugs are combined the effects upon microsomal enzymes seem to be additive, leading to a greater incidence of hypocalcaemia, reduced bone mineral density, and histological evidence of osteomalacia.[9 10]

The increased requirement for vitamin D has been calculated as about 500-1500 international units a day.[11] This demand is unlikely to be satisfied by an average British diet.[12] The capacity for cutaneous synthesis, which may be considerable,[13] might theoretically compensate, but in practice exposure to sunlight is uncertain. These two factors—diet and sunlight—seem to be of great importance in influencing the frequency of bone disease among epileptics. Early reports of anticonvulsant-induced osteomalacia[1 2] suggested that it was largely a European problem, and in fact the relative rarity in the United States may be due to a higher vitamin D intake.[8 9] The important influence of diet was well shown by the low incidence of hypocalcaemia (4%) in one study of juvenile outpatient epileptics,[9] which contrasted with a much higher incidence (19%) in the adults[8] attending the same clinic. Investigation showed that as a result of a daily intake of 700 units, mainly from fortified dairy products, the children were consuming almost three times as much vitamin D as the adults. Lack of sunlight may be important in epileptics who are institutionalised, immobile, or who work indoors.[14 15]

Clearly, then, comparisons of the incidence of bone disease in different populations should take account of the variable influences of drug schedules, dietary habits, and exposure to sunlight. Big differences may be found; for instance, radiographic evidence of rickets was found in 15% of German juvenile outpatient epileptics,[2] but a study in the United States of a similar group failed to find a single case from 1500 routine skull radiographs.[16] Furthermore, the incidence of bone disease depends very much on the sensitivity of the screening test used. Clinical examination or radiography will detect the small number of patients with severe disease, but a much higher incidence of abnormality (much of it asymptomatic) will be detected by surveys based on serum concentrations of alkaline phosphatase[15 17] or 25 hydroxy-vitamin D[8 9] or using photon absorptiometry[18 19] to measure bone mineral content.

Overt bone disease requires treatment. The associated hypocalcaemia may increase the tendency to fits, and any convulsion may result in fractures of demineralised bones. Treatment should begin with 2000-10 000 units of vitamin D/day.[3 4 11] Doses in the upper part of this range are usually required, but they may need to be modified according to the presence of risk factors and individual responses. If vitamin D toxicity is to be avoided it is essential to monitor the response, and this is best done by regular determinations of serum calcium, alkaline phosphatase, and calcium excretion. Once healing is achieved, in cases in which the precipitating factors cannot be modified maintenance treatment with 1000-3000 units daily seems reasonable.

Whether or not subclinical bone disease should be treated is less certain. Serum alkaline phosphatase is the most widely available index, concentrations beginning to rise within two weeks of the start of anticonvulsant treatment.[20] Nevertheless, the major component of this increase comes from the liver,[9] while normal levels do not exclude the presence of osteomalacia[10]; in cases of doubt bone biopsy may be more reliable.

Studies of epileptics on chronic anticonvulsant therapy have shown reduced levels of serum 25 hydroxy-vitamin D using a competitive protein-binding assay,[8 9 21] and though there is a positive correlation with serum calcium only a minority of patients have overt hypocalcaemia.[9] Again, bone mineral content (as assessed by photon absorptiometry) may be reduced[18 10] but can be restored by vitamin D treatment.[19]

The long-term implications of these findings are far from clear. Any prophylactic programme which leads to the prescribing of relatively large doses of vitamin D needs to be viewed with circumspection and must be based firmly upon clinical and not simply biochemical benefit.

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Anorectal Crohn's disease

Ever since the original description of regional ileitis[1] the terminal ileum has been regarded as the epicentre of Crohn's disease. Since then it has become apparent that the anus is another site of predilection. Fielding[2] found perianal lesions in 76% of patients with small bowel disease and in up to 95% when the large bowel was affected. Though perianal lesions were also seen in 38% of control patients, these were mainly small skin tags as opposed to the large fleshy tags often present in Crohn's disease. Furthermore, over 20% of patients with small intestinal lesions had an anal abscess, sinus, or fistula.

Perianal lesions should be regarded as a hallmark of Crohn's disease. They may precede abdominal symptoms and signs by many years, and they become more frequent with increasing duration of disease. Their presence should persuade the clinician to undertake a careful search for bowel abnormalities. Examination of the anal region should not be cursory; if the buttocks are spread by lateral pressure with the palms of both hands a mildly abnormal appearance may be converted into a florid picture of Crohn's disease. Characteristic features include oedema of the skin, associated with a red or dusky cyanotic tinge, and indolent-looking, painless fissures with adjacent oedematous skin tags. Perianal or ischiorectal abscesses may appear and develop into fistulae, which discharge thin pus. Though these fistulae may be simple low-level affairs, they are more often complex and can track above the anal sphincter. Painless, indolent ulcers sometimes develop and occasionally spread widely in the perineum.

Crohn's disease may be confined to the rectum with no evidence of bowel lesions elsewhere (anorectal Crohn's disease). This distal form of the disease must be distinguished from ulcerative colitis, with which it may have been confused in the past. Nevertheless, comparison with the distal form of ulcerative colitis (ulcerative proctitis) may be appropriate in so far as that condition is known to run a benign course and rarely spreads proximally. Until recently there was no information about the incidence or clinical features of rectal Crohn's disease. In 1975 a study of 615 patients presenting with Crohn's disease at the Cleveland Clinic showed that 21 (3·4%) had localised anorectal disease,[3] although the disease subsequently spread into the colon[4] and so seemed to merge with the more extensive varieties; few clinical details were given. Now a paper from St Mark's Hospital has described no fewer than 80 patients whose disease affected the rectum with or without some proximal spread to the sigmoid colon as indicated by sigmoidoscopy and barium enema.[5] The patients were usually over 50 years old. As in other forms of Crohn's disease, perianal lesions could precede overt involvement of the rectum. Common symptoms were rectal bleeding, which is unusual in other varieties of Crohn's disease, and diarrhoea with the passage of mucus. Abdominal pain occurred in only one-third of cases, whereas it is almost universal in Crohn's disease elsewhere. Constipation was present in 14%. Four out of five patients developed a perianal lesion during the period of observation and 23% of the women had rectovaginal or anovaginal fistulae.

As in all patients with Crohn's disease, treatment of anorectal lesions should consist of the simplest measures that abolish symptoms. Because symptomatic relief may occur without improvement in the appearance of the perianal lesions or rectal mucosa care should be taken not to overtreat such patients. Among the successful medical regimens were sulphonamides alone (sulphathalidine) and steroid retention enemata with or without sulphasalazine. Systemic corticosteroids and azathioprine were used only in patients with systemic symptoms; this treatment was successful in only half of cases but the patients were more seriously ill. Surgical treatment required excision of the rectum with the fashioning of a permanent colostomy. In contradistinction to Crohn's disease at other sites, recurrence or proximal spread after surgery was uncommon, so that operation often resulted in cure. Nevertheless, mortality rates were low whatever form of treatment was used, and most patients remained in reasonable health without surgery; 60% had avoided an operation after five years.

It seems that rectal Crohn's disease may be more common than previously thought. The diagnosis should be suspected in older patients especially if they have perianal lesions, or if sigmoidoscopy shows patchy ulceration as opposed to diffuse change. Diverticular disease of the colon will often coexist and should not be blamed for the presence of diarrhoea, perianal lesions, or abnormal sigmoidoscopic findings—observations which should alert the clinician to the possibility of inflammatory bowel disease.[6] Once rectal disease has been diagnosed the patient may be reassured that the condition is benign even though the symptoms may persist and even be socially troublesome. If symptoms become disabling then surgery may be performed without undue fear of recurrent disease.

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