attraction around the needle and within the collar and is replenished by dipping into the main supply like a pen into ink. After final use the machine is returned to a slot in a cabinet with the nozzle dipping in cetrimide solution to remove surplus pigment. The tattooist stated that before use the nozzle, with needle in situ, is dipped into spirit and flamed in a methylated spirit lamp.

The premises used by the tattooist left much to be desired. He was a relative newcomer to the district awaiting re-housing by the council, and had secured the tenancy of part of a cottage awaiting demolition. He occupied a "one up and one down" extension with his wife, two schoolgirls aged 12 and 10, and a baby. The downstairs room was divided by a partition into two sections, the larger section measuring only about 9 ft by 13 ft (2·7 m by 3·9 m) being both the living room and the tattooing parlour, congested with furniture, quite inadequate, and possessing no wash basin. The only water supply was an outside standpipe common to three families. A bucket type latrine was situated across an unkempt yard and was also shared by three families.

Comment

If tattooing is to continue to be permitted, the conditions described reinforce the argument for minimum standards to be imposed on tattooists' premises, equipment, and methods —the practical difficulty being one of enforcement. That public health authorities are mostly powerless in this matter (cf. *British Medical Journal*, 1961), has recently been emphasized in a report from Scotland describing 16 cases of hepatitis after tattooing, all by the same tattooist (Mowat *et al.*, 1973). The only authorities in Great Britain which have bylaws requiring registration of tattooists are Portsmouth C.B. and Grimsby C.B., but the only national legislation, The Tattooing of Minors Act, 1969, which makes it illegal to tattoo persons under 18 years, is not concerned with registration and is infringed with impunity (Gostling, 1971, 1972).

No difficulty would be experienced in enforcing minimal structural standards and facilities for premises or the provision of suitable machines and sterilization equipment, but effective use of the latter would be difficult to enforce. On balance it seems probable that many tattooists would use apparatus if they were obliged to purchase it.

Many tattoo machines are designed so as to permit the dismantling of the parts coming into contact with pigments, thereby permitting sterilization by an absolute method such as a domestic pressure cooker or a thermostatically controlled domestic oven. This makes it possible to provide sterilized units readily available for each successive client, no matter how long the queue. There would be little or no delay if the operator had a sufficient supply of collars and needle bars. Another obligatory improvement should be the provision of individually disposable or sterilizable palettes for each client. If, as seems likely, it proved impossible to enforce the disposal of excess pigment in each palette after each client (the price of pigments is a significant part of the costs of the operation), the formulation of the pigments and solvents should be such as to permit boiling or pressure cooking in an enclosed vessel as the only permissible alternative. Relevant research already published has shown that heat is the only practicable way to destroy the infectivity of the virus (Cossart, 1972). It is understood that most of the code of conduct outlined above is already followed by most tattooists in the U.S.A., and by a few of the more enlightened ones in Britain (Scutt, 1972).

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Neonatal Rickets in Asian Immigrant Population

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Infantile rickets continues to occur in both the white and immigrant populations of the United Kingdom in an urban setting of poor socioeconomic circumstances (Arneil and Crosbie, 1963). Late rickets and osteomalacia in the Asian immigrant population is now recognized as a problem of numerically much greater magnitude (Dunnigan *et al.*, 1962; Ford *et al.*, 1972; Holmes *et al.*, 1973). Neonatal rickets in the offspring of Asian immigrant mothers with osteomalacia, though not unexpected, has not been hitherto described. We report two such cases below.

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Case 1

A Pakistani woman aged 21 gave birth to a mature female infant weighing 3,000 g in July 1971. Pregnancy and delivery were uneventful. Seven days after birth the infant developed hypocalcaemic convulsions which responded to oral calcium chloride (fig. 1). Cessation of calcium chloride therapy led to a recurrence of the hypocalcaemia with further convulsions on one occasion. Seventeen days after delivery a raised level of serum alkaline phosphatase was noted (52 K.A. units/100 ml). One month after delivery the mother was found to have moderate biochemical osteomalacia. Thirty-seven days after delivery persisting hypocalcaemia and raised levels of serum alkaline phosphatase led to a revised provisional diagnosis of neonatal rickets. This was reinforced by the finding of amino-aciduria. After therapy with 1,000 I.U. of calciferol daily serum calcium levels showed a prompt and sustained rise to normal. Skeletal *x*-ray films at 5 months of age showed nothing abnormal, and at this time serum levels of calcium, inorganic phosphorus, and alkaline phosphatase were normal. The mother's osteomalacia showed a severe biochemical and clinical relapse in a subsequent pregnancy.

Case 2

An Indian woman aged 22 gave birth to a male infant weighing 2,400 g four weeks prematurely in July 1972. Pregnancy and delivery were uneventful. At initial routine examination it was noted that the infant's parietal bones were soft and indented readily on palpation. No other skeletal abnormality was apparent and a skull *x*-ray film showed normal bone density with a somewhat thin calvarium. The child's progress was satisfactory but the parietal bones remained noticeably soft two weeks post partum. Further investigation then showed a serum calcium of 6·8 mg/100 ml, a serum inorganic phosphorus of 5·5 mg/100 ml, and a serum alkaline phosphatase of 70 K.A. units/100 ml. At this time the mother's serum calcium was 6·5 mg/100 ml, the serum inorganic phosphorus was 5·5 mg/100 ml, and the

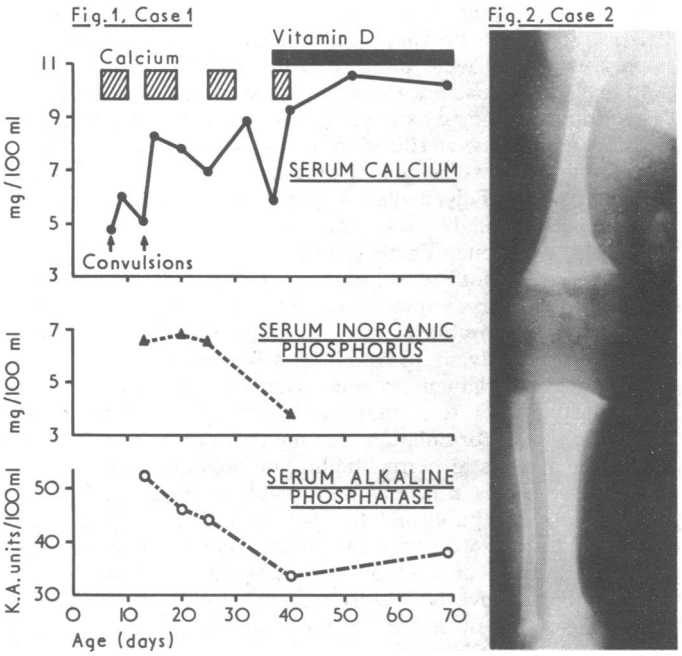

FIG. 1—Case 1. Response of hypocalcaemia in neonatal rickets to calcium supplements and vitamin D. FIG. 2—Case 2. Right lower femoral epiphysis two weeks after delivery showing splaying and irregularity typical of rickets.

serum alkaline phosphatase was 32 K.A. units/100 ml. These figures were strongly suggestive of neonatal rickets and maternal osteomalacia respectively. *X*-ray films of the infant's long bones showed evidence of active rickets, most noticeable at the lower femoral epiphyses (fig. 2). Examination of the urine showed generalized amino-aciduria. The infant was treated with 1,000 I.U. of calciferol daily and showed complete clinical, biochemical, and radiological remission within three months.

Comment

The neonatal rickets found in these two cases was almost certainly acquired in utero, and the terms "congenital" or "fetal" rickets could be applied with equal justification. A substantial number of Asian women with osteomalacia now live in the United Kingdom, and many are of child-bearing age. This has provided a setting in which cases of neonatal rickets may appear for the first time in appreciable numbers. As shown initially in case 1, the condition may be easily overlooked or misdiagnosed. Rickets should always be considered as a cause of tetany or convulsions in neonates born to Asian mothers. Softening of the skull bones should be looked for routinely at the infant's postnatal examination. Radiological evidence of the disease or the characteristic biochemical changes, in particular a raised level of serum alkaline phosphatase, should confirm the diagnosis and differentiate it from other causes of neonatal hypocalcaemia. Amino-aciduria, a sensitive index of early vitamin D deficiency (Chisolm and Harrison, 1962), may provide additional supporting evidence.

The prevention of neonatal or congenital rickets depends on the detection and adequate treatment of osteomalacia during pregnancy. Osteomalacia is sufficiently common in the Asian population of the United Kingdom to merit biochemical screening for this disease as a part of routine antenatal care. A survey of the prevalence of neonatal rickets and hypocalcaemia in infants born to Asian mothers would be of wide interest.

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Mucosal Ulceration and Mesenteric Lymphadenopathy in Coeliac Disease

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Ulceration of the small bowel mucosa has been reported in a number of cases of coeliac disease and is probably a direct complication of the disease itself. The prognosis is poor and it has been suggested that surgical resection gives the best chance of survival, no effective medical therapy being known (Bayless and Hendrix, 1970). The following case shows that healing of the ulcers may occur with intensive conservative management.

Case Report

An Irishman aged 58 was admitted to hospital in May 1971 with upper abdominal distension for four months and weight loss of 1 st (6·4 kg). For a week before admission he had passed pale loose motions, up to eight daily, and had noticed a postprandial "dragging" pain in the left hypochondrium. On examination he was seen to be wasted and dehydrated. The tongue was smooth and there was tenderness in the left hypochondrium.

INVESTIGATIONS AND TREATMENT

Haemoglobin 16·7 g/100 ml; serum folate 1·5 ng/ml; serum B_{12} 300 pg/ml; serum iron 20 μg/100 ml; total iron binding capacity 165 μg/100 ml. Tests of digestion and absorption: glucose tolerance test 60-70-70-80-70 mg/100 ml after 50 g glucose by mouth; faecal fat excretion 27 g/24 hr; xylose excretion 0·6 g in five hours after 5 g dose (normal > 1·2 g); serum calcium 8·4 mg/100 ml; serum phosphorus 3·5 mg/100 ml; jejunal biopsy showed on dissecting microscopy a flat mosaic appearance and there was subtotal villous atrophy on light microscopy (fig. 1).

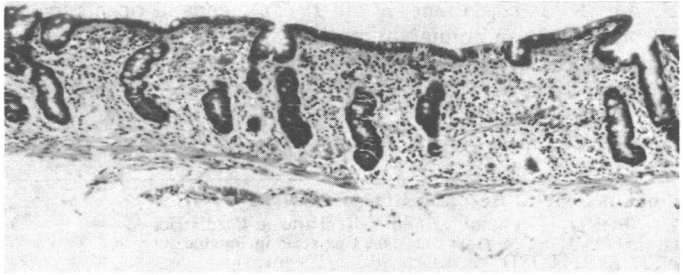

FIG. 1—Subtotal villous atrophy of jejunal mucosa on first biopsy. (H. and E. ×19.)

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