

It was then recalled that the symptoms began after a generous helping of mixed bran and muesli was adopted for breakfast, a regimen likely to impair the absorption of calcium. This diet was stopped and treatment with calcium lactate started. The symptoms lessened after the first dose of calcium lactate and ceased after three days on three level teaspoonfuls three times daily, disappearing in the reverse order of their appearance. Calcium treatment was tailed off over two weeks and then replaced by a glass of milk each morning. There has been no recurrence in the following six months.

Nineteen years previously the patient had been given streptomycin for six months for tuberculosis. Recent studies have shown that treatment with aminoglycosides affects calcium balance<sup>1</sup> although it is not known how long their effect may persist. Since streptomycin can damage hearing permanently, its influence on calcium metabolism may also be lasting. Because bran is so widely consumed and treatment with aminoglycosides is not uncommon, it is likely that mild examples of calcium deficiency are occurring in the community and they will not be recognized unless the possibility is considered. The key to the detection of calcium deficiency in the present case was that the symptoms depended on pressure on the arm or leg.

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### Reference

1. Wilkinson R, Lucas GL, Heath DA, *et al.* Hypomagnesaemic tetany associated with prolonged treatment with aminoglycosides. *Br Med J* 1986; **292**: 818-819.

## Anaphylactic shock reaction to measles vaccine

Sir,

Recently, two children I have vaccinated against measles have suffered anaphylactic reactions. I feel it may be helpful to document once more the importance of having adrenaline at hand during childhood immunizations.

*Case 1.* An 18-month old West Indian boy was brought to the clinic for routine measles immunization. He had no contraindications and was given 0.5 ml of measles vaccine (Rimevax, Smith, Kline and French) intramuscularly into the upper arm. Five minutes after the vaccine,

the mother noticed that the child had 'gone sleepy' and called for assistance. The child's pulse rate was 15 min<sup>-1</sup> and his respiratory rate 10 min<sup>-1</sup>. He was peripherally cyanosed, had periorbital oedema and widespread erythema. He was hypotonic and responded only to painful stimuli.

Adrenaline was given intramuscularly (0.1 ml of 1 in 1000). Within one minute his pulse and respiratory rate were improving, within 10 minutes the eyelids were less oedematous and the vital signs had stabilized. He was transferred to the local hospital where he was admitted and observed overnight. There were no further sequelae.

*Case 2.* Three weeks later a 16-month old Caucasian girl was brought to the clinic for measles immunization. There were no contraindications, and she was given 0.5 ml of Rimevax vaccine intramuscularly into the upper arm. Five minutes later the child started to cry and had widespread erythema. Her heart rate and respiratory rate were normal. In view of the likelihood of an atypical reaction arrangements were made for the child to be transferred to hospital.

During the journey, 10 minutes after the vaccine had been given, the child became cyanosed and the respiratory rate decreased to 10 min<sup>-1</sup>. Widespread wheezing was audible on auscultation.

Adrenaline was given intramuscularly (0.1 ml of 1 in 1000). She responded rapidly and within two minutes her vital signs had stabilized. She was discharged from hospital later that evening with no further sequelae.

Anaphylactic shock is a well recognized complication of measles vaccination. It occurs at a frequency of around nine per 170 000 vaccinations.<sup>1</sup> In view of this risk, wherever immunizations are performed, up-to-date adrenaline should be available, preferably in the same tray as the vaccines. The childhood dose list (Table 1) should be kept with the adrenaline; the stress of a child in unexpected shock rapidly reduces one's ability to calculate the dose per kilogram.

**Table 1.** Dose of adrenaline (1 in 1000 strength) to be administered intramuscularly by age of child.

Age of child (years)	Adrenaline dose (ml)
<1	0.05
1	0.1
2	0.2
3-4	0.3
5	0.4
6-10	0.5 (adult dose)

If possible the adrenaline should be given before the vital signs have deteriorated.

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1. Pollock TM, Morris J. A seven year survey of disorders attributed to vaccination in North West Thames Region. *Lancet* 1983; **1**: 753-757.

## Visits to children: is admission always required?

Sir,

Now we have entered another winter, we are in the period when we may expect an increase in sudden infant deaths. General practitioners will be reminded of the 1985 Department of Health and Social Security study which found that many babies had significant symptoms prior to death.<sup>1</sup>

A paper by Valman<sup>2</sup> suggested that any doctor encountering a child aged under two years with these symptoms should admit the child to hospital. Over a six-month period I studied how many extra admissions would result if I followed Valman's advice.

In my teaching practice of 16 000 patients, I made 530 home visits in six months (February-July 1985): 58 (11%) of these visits were to children under two years old, 44 of whom were under one year old. There was only one child who required admission, an eight-month-old boy with intussusception. There was however, one cot death in my study period.

I propose that admitting every child with symptoms of minor illness would cause not only increased upheaval in the family but also an unmanageable increase in hospital workload.

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### References

1. Department of Health and Social Security. *A multi-centre study of post neonatal mortality*. London: HMSO, 1985.
2. Valman B. Preventing infant deaths. *Br Med J* 1985; **290**: 339.