The baby's delivery and that of the placenta was spontaneous and complete without any help. The baby cried immediately, and his Apgar score was 10 at one and five minutes; he weighed 3000 g. During examination, however, his scrotum was found to be almost completely severed except for an anterior tag, and he was bleeding profusely. It was soon realised that the two pearly structures had been the baby's testicles, and the scrotum had been severed with the episiotomy. General surgeons were urgently called for, but nothing could be done except to stop the bleeding and stitch back the scrotum. Histological examination of the spherical structures confirmed that they were testicles.

Comment

In this case episiotomy was performed as an urgent procedure because the perineum was overstretched and likely to tear. Unfortunately, despite 30 years'

experience, the obstetrician protected the genitals rather quickly and seemingly inadequately. Both parents were stunned when they knew what had happened, especially as they had had great confidence in the obstetrician. Because of their deep religious beliefs they decided not to take any action against the obstetrician or the hospital. The obstetrician was horrified by what had happened, and all the attendants felt the same.

This possible complication should be emphasised so that it will not happen again. The obstetrician should always protect the genitals with one hand as a barrier and make sure that they are not caught between the hand and the perineum while the episiotomy is performed.

I was an onlooker in this case: the incident happened some time ago and the obstetrician concerned is now dead.

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Mineral density of bone in the forearm in premenopausal women with fractured wrists

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We previously reported that the mineral density of bone in the forearm was significantly reduced in postmenopausal women who had had peripheral fractures compared with controls who had never had a fracture.¹ It was also reduced in women who had fractures before the menopause, suggesting that there might be an inverse relation between bone density and risk of fracture even within the normal range of bone density. To test this hypothesis we performed a prospective study of bone density in the forearm in premenopausal women with fractured wrists.

Patients, methods, and results

We measured the mineral density of bone in the non-fractured arm of 30 consecutive premenopausal women (mean age 30; range 16-49) who attended this hospital with a fractured wrist (12 of the right wrist and 18 of the left). Fractures resulting from road traffic accidents were excluded. All the women were menstruating regularly, and none was taking any drugs or had any disease that might predispose them to osteoporosis. The bone density in these patients was compared with that in 30 premenopausal controls who had never had a fracture and were matched for age (within three years) and for the forearm measured (right or left) to each of the patients. The results were also compared with measurements previously obtained in the right forearm in 77 premenopausal women (mean age 43; range 22-59).²

The mineral density of the distal radius and ulna was determined with a Molsgaard bone mineral analyser.^{1,2} The source of γ rays was iodine-125. Calibration of the instrument gave the following conversion factor: mineral content of bone in the forearm = mineral content of bone $\times 0.031$ g/cm². The cross sectional area was calculated from the widths of the ulna and radius, assuming that the ulna was circular and that radial area was $((15.2 \times \text{radial width}) - 95)$ mm².² The mineral content was divided by total cross sectional area to give mineral density (mg/cm³). The measurements for the patients and the two control groups were compared by

the Wilcoxon matched pairs signed ranks test and χ^2 test.

The median bone mineral density in the 30 patients was 424 (range 330-610) mg/cm³, and in the 30 controls it was 456 (407-568) mg/cm³ ($p < 0.005$). The mean (SEM) measurement in the controls was 466 (6) mg/cm³, which was virtually identical with the mean measurement of 469 (6) mg/cm³ in the 77 premenopausal women previously reported.² Bone mineral density was below the mean value in these 77 premenopausal women, in 23 of the 30 patients, and below the lower limit in six of them ($p < 0.05$) (figure).

Comment

We found that the mineral density of bone in the forearm was significantly reduced in premenopausal

Mineral density of bone in forearm of 30 premenopausal women with fractured wrist and 30 controls matched for age. Broken lines indicate mean (2 SD) values in 77 premenopausal women²

women with fractured wrists. Thus the inverse relation between bone mineral density and risk of peripheral fracture that has been observed in postmenopausal women^{1,3,4} apparently also applies to premenopausal women. Whether our patients were compared with their age matched controls or with the larger group of premenopausal women previously reported on² their bone density was significantly reduced. The close agreement between the mean bone mineral density in the controls in this study and in the previously reported group, despite the difference in mean age, also supports our previous conclusion that bone mineral density does not decrease with age in normal premenopausal women.²

An inverse relation between bone density and risk of both vertebral and peripheral fracture has been reported,^{1,3,5} but as far as we know this is the first time that bone density has been measured and found to be low in premenopausal women with fractures. Earlier work on this subject was dominated by the concept of a

fracture threshold and by the high incidence of fractures in postmenopausal women. We suggest that there is no fracture threshold and that the lower the bone density, even if it is within the normal range, the higher the risk of fracture.

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Burn to toddler's penis from an electrochemical battery

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There have been several reports of the ingestion of small button batteries by children.^{1,3} To my knowledge burns due to prolonged contact of larger high voltage batteries with the skin have not been reported before.

Case report

A 19 month old toddler was admitted to hospital from the casualty department with a part circumferential full thickness burn to the ventrolateral aspect of the penis. This had been discovered when his nappy (which was damp and had been worn for around five hours), was removed, when a 9 V battery had been found wedged at the base of the penis with both terminals in contact with the skin. Two circular, confluent full thickness burns had been sustained, each measuring 1.5 cm across. A green deposit was seen around one of these, and the penis was inflamed and oedematous. The results of a general examination were normal, and no evidence of abuse, either physical or sexual was found. After surgical debridement

of necrotic tissue the burns were dressed with sulphadiazine. Three months later healing was complete with no deformity of the penile shaft.

Comment

On the day before admission the child's mother had been teaching him to place objects in his trouser pockets. Probably in mimicking this he placed a battery inside his nappy. The battery had both terminals at one end, and when he urinated an electrical circuit was completed and the burn was sustained. He gave no indication of discomfort and apparently had no pain. Although non-accidental injury or sexual abuse seemed unlikely, the parents were interviewed and social work reports compiled. No evidence was found to support these diagnoses.

The risks of ingestion of small objects such as button batteries are generally understood by parents.³ Larger batteries, particularly when worn out, are, however, considered harmless and are occasionally given to small children to play with. These may cause burns if prolonged contact with the skin occurs, and they are therefore unsuitable for this purpose.

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Is injecting air into insulin bottles necessary?

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Patients treated with insulin are taught to inject an exact volume of air into the bottle before drawing up insulin to avoid creating a partial vacuum. This complicated manoeuvre may be difficult to master, especially when two bottles are being used. We suspected that it is unnecessary because insulin can easily be withdrawn without adding air despite the vacuum. We therefore monitored serial pressures inside bottles when withdrawing insulin without adding air, and we

measured pressures in bottles used by patients and nurses.

Methods and results

Pressures were measured by inserting into the bottle a needle attached to a Druck PDCR75 transducer through a reservoir of water. The system was calibrated with a precision meter, and readings were within 5% (mean 2.8%) over the range -93 to 93 kPa (relative to atmospheric pressure). Readings were made in duplicate in random order at room temperature. Firstly, we measured serial pressures inside six bottles of insulin after withdrawing aliquots of 0.25 ml (25 units) with a 0.5 ml syringe without adding air. Secondly, we measured the pressure in partly used bottles containing 0.5-9.0 ml (mean 5.0), which were provided by 81 randomly selected patients (aged 9-83).