English National Board for Nursing, Midwifery and Health Visiting, December 1987:1–5. (Circular 1987/64/APS.)
[2] British Paediatric Association and British Association for Perinatal Paediatrics statement. Categories of babies requiring neonatal care. *Arch Dis Child* 1985;**60**:599–600.

F Cockburn, M L Chiswick, *and* P M Dunn
British Association of Perinatal Medicine, c/o British Paediatric Association, 5 St Andrews Place, Regents Park, London NW1 4LB

Successful suprapubic aspiration of urine

Sir,

O'Callaghan and McDougall recommend the use of ultrasound scanning of the bladder in infants for successful suprapubic aspiration of urine.[1] Collection of urine by suprapubic aspiration for accurate diagnosis of urinary tract infections in the newborn infant is not in doubt and is generally accepted.

The results of their study show only a 36% success rate of bladder aspirations without the help of ultrasound scanning. In the same group they also failed to obtain urine in seven infants despite three repeated attempts. There was, however, no mention made as to when these repeated attempts were made.

I have been quite successful in collecting urine from infants by suprapubic aspiration by following simple and useful guidelines. I do not attempt suprapubic aspiration until at least 30 minutes after a feed is given.

In those babies who need 'full sepsis' screening, urine is collected by suprapubic aspiration at the beginning of the investigation before venepuncture and lumbar puncture. I also ask a nurse to keep a sterile container ready to collect urine if the infant voids urine spontaneously during the preparation. An appreciable number of infants seem to void urine per urethra just at the time when the skin over the bladder is cleaned! In the rare event of a failed attempt I repeat the procedure one hour later. Complications such as bowel perforation and secondary infection after repeated attempts, as mentioned by the authors, have not been experienced by us.

I am surprised at the optimism of O'Callaghan and McDougall for the increasing availability of ultrasound machines in neonatal wards, paediatric wards, and even in the community. This may well be true for Melbourne and for teaching hospitals but this has not been my experience in district hospitals.

Portable ultrasound machines are still a luxury in many paediatric departments in district hospitals even in the United Kingdom. I have difficulties in getting an adequate supply of neonatal incubators or paediatric infusion pumps among many other essential items of basic equipment required for maintaining an effective paediatric service.

With continuing cuts in the National Health Service budget it is most unlikely that portable scanners would be available in neonatal or paediatric wards in district hospitals in the distant future. In my opinion availability of scanners in the community would remain a dream for some time to come.

References

[1] O'Callaghan C, McDougall PN. Successful suprapubic aspiration of urine. *Arch Dis Child* 1987;**62**:1072–3.

C S Nanayakkara
Grantham and Kesteven General Hospital, Manthorpe Road, Grantham, Lincolnshire NG31 8DG

Cord blood IgE and month of birth

Sir,

We read with interest the study on cord blood IgE in relation to month of birth by Dr Kimpen and colleagues.[1]

Using stringent criteria for detecting maternal fetal blood contamination (IgA >32·3 μg/ml) the authors were able to achieve a low contamination rate of 2·9% compared with the 3·9% that we found in a recent study that we undertook of 153 samples, collecting cord blood by venepuncture and using a higher level of IgA cut off (IgA >100 μg/ml).[2] Was their cord blood sampled by venepuncture or 'squeezed out' from the cut umbilicus? If 'squeezed out' cord serum gives a contamination rate as low as that described, then we should *not* be using a more expensive and time consuming method of sampling by venepuncture as advocated by authorities in this field.[3]

We are also interested in the IgE values of Kimpen's 157 samples showing evidence of 'contamination' indicated by IgA concentrations >3 SD above the mean. In our recent study using an IgA >100 μg/ml as cut off, we found six of the 153 samples (3·9%) showing evidence of contamination. Among these only three had IgE >1 IU/ml, the remaining three had IgE values of <0·12 IU/ml. Thus IgA may not be a truly specific marker for maternal fetal blood contamination.

Finally, we wonder why the incidence of raised IgE in Belgium in 1985 was only 50% of that of Swedish babies in 1979.[4] Might it represent a secular trend of change in allergy predisposition, ethnic or environmental differences, or methodological changes in screening techniques for IgE at extremely low concentrations that has taken place during this period of time.[1 2 4]

References

[1] Kimpen J, Callaert H, Embrechts P, Bosmans E. Cord blood IgE and month of birth. *Arch Dis Child* 1987;**62**:478–82.
[2] Tseng RYM, Lam CWK, Davies DP, Swaminathan R. Umbilical cord serum IgE concentration of Chineses babies in Hong Kong. *Acta Paediatr Scand* 1987;**76**:161–2.
[3] Bonsquet J, Kjellman NIM. Predictive factors in childhood allergy. *J Allergy Clin Immunol* 1986;**5**:1019–21.
[4] Croner S, Kjellman NIM, Eriksson B, Roth A. IgE screening in

1701 newborn infants and the development of atopic disease during infancy. *Arch Dis Child* 1982;**57**:364–8.

R Y M Tseng, C W K Lam, *and* D P Davies
Department of Paediatrics
Prince of Wales Hospital,
Shatin, NT, Hong Kong

Drs Kimpen, Embrechts, Callaert, and Bosmans comment:

We thank Drs Tseng, Lam, and Davies for their interesting remarks concerning our article in the Archives. The difference in contamination rate (2·9% *v* 3·9%) is small and may not be significant when both groups are compared. The number of serum samples examined (5838 *v* 153) may be partially responsible for it.

The cord blood samples were taken directly from the umbilical stump immediately after it was cut.

Of the 157 cord blood samples with a IgA value higher than 32·3 ug/ml, 79 samples had a IgE concentration higher than 1 IU/ml (50%). In general the absolute IgE concentration tended also to be higher in the group with a high IgA. Only 30 samples had a concentration below 0·4 IU/ml (19% *v* 90% in the group with an IgA concentration below 32·3 ug/ml) and 14 samples had an IgE concentration below 0·2 IU/ml (8% *v* 72% in the group with a low IgA concentration). From this study it can be concluded that IgA concentration in the cord blood is a good marker for contamination with maternal blood.

We do not have an exclusive answer on the last question. Methodological change in screening technique is most probably not responsible for the difference in incidence because the values that would make the difference lie near the cut off point.

Figures 1 and 2 of our paper show that the normal values are clustered around the lower limit of the interval between 0·01 and 1 IU/ml. We do not think that a difference in detection methods could possibly make such a remarkable difference as 50%. Ethnic and environmental differences cannot be ruled out as causative mechanisms and could indeed be responsible for the lower incidence of raised cord blood IgE in Belgium.

Loose hair on toys

Sir,

Loose hair on toys is considered to pose a potential asphyxiation hazard to children. There has been a single tragic death where loose fibrous hairs from a toy were present in the child's trachea. However, there is a dearth of evidence of other problems associated with hair or with pile fabric. For example, a detailed breakdown of the Department of Trade and Industry's Home Accident Surveillance System 1984 data on accidents concerning toys contains no reports of ingestion or inhalation of hair or fur from pile, and no other deaths have been reported from this cause. Nevertheless, some concern is being expressed in various quarters about this matter.

There are many other forms of childhood accident which occur frequently and whose cause is well proven. The Child Accident Prevention Trust is concerned that energy and resources are being diverted from these problems into consideration of the possible problems of hair on toys. Accordingly, we are asking other medical practitioners to report any experience they have of real difficulties caused by inhalation or ingestion of hair or fur pile, so that we may develop an informed opinion as to whether this is a genuine hazard.

S Levene *and* R H Jackson
Child Accident Prevention Trust,
28 Portland Place,
London W1N 4DE

Sex ratio and heterozygote advantage in cystic fibrosis: hypothesis and research proposal

Sir,

Cystic fibrosis is a serious disease probably caused by autosomal recessive transmission. In some white populations it is relatively common, and in such populations the gene frequency has been estimated at around 0·02. Such a value would seem too common to be maintained by mutation, so workers have proposed that some form of heterozygote advantage may be responsible for keeping the gene frequency so high. No disease has been identified to which heterozygotes are resistant, but it has been shown that sibships containing affected cases are larger than control sibships.[1] This line of argument is not conclusive, however, because in such studies parents at risk are discovered only if they have an affected child, and the larger the sibship the more likely this is to happen. This objection does not apply so forcibly to those studies showing that grandparents of affected children produced more offspring than grandparents of normal controls.[2] Moreover it has been found that uncles of affected children sire larger sibships than normal controls.[3] Thus it seems that heterozygotes for cystic fibrosis, particularly males, are more fertile than controls. Why should this be so? I wish to suggest an answer.

There is an excess of male offspring in sibships with cystic fibrosis both among the affected and the unaffected. Moreover this male excess extends to the children of the uncles of patients (table), so it seems that men heterozygous for cystic fibrosis sire large families with an excess of male offspring.

I have offered evidence that the sexes of human offspring are partially determined by parental hormone concentrations at the time of conception, high concentrations of testosterone being associated with the subsequent births of sons.[4] High androgen concentrations may be assumed to be associated with fertility either through behavioural or physiological mechanisms. Accordingly I hypothesise that men heterozygous for cystic fibrosis have high androgen concentrations. If this were true, it might explain, firstly, the high sex ratios in cystic fibrosis sibships