a dental probe was inserted beneath the edge of the round, slightly raised "plaque." A plastic screwhead cap was prised out, leaving the palate undamaged.

Comment

In both these cases the nature of the foreign body in the palate defied diagnosis by either the parents or clinicians. Although this led to considerable delay in presentation, removal was simple and the palate left unscathed. The risks of dislodgement and aspiration of the plastic screwhead cap into the tracheobronchial tree, however, rendered this a potentially serious condition. Because screwhead caps look like small sweets they are attractive to children and their widespread use in the home makes them readily accessible. Ingestion of a cap into the alimentary tract would probably pass unnoticed, but if a cap was inhaled its size is such that it could obstruct the major airways. Though such plastic screwhead caps are not mentioned specifically in reports of foreign bodies in the tracheobronchial tree[3 4] and do not figure in the series of 50 cases in this hospital (G H Welch, personal communication), we think that they present a considerable risk. This could be minimised by manufacturers including a warning in the instructions issued with furniture that is to be assembled at home. In our experience the central plastic retaining pin in screwhead caps can easily become distorted and therefore fail to fix the cap securely. Use of an adhesive would achieve better fixation.

1 Anonymous. Inhaled foreign bodies [Editorial]. *Br Med J* 1981;**282**:1649-50.
2 Fiske J, Swallow JN. Perforated palate in a 15 month-old baby: a case report. *J Dent* 1975;**3**:173-4.
3 Rothman BF, Boeckmann CR. Foreign bodies in the larynx and tracheo-bronchial tree in children. *Ann Otol Rhinol Laryngol* 1980;**89**:434-6.
4 Cohen SR, Herbert WI, Lewis GB, Geller KA. Foreign bodies in the airway. *Ann Otol Rhinol Laryngol* 1980:**89**:437-42.

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Royal Hospital for Sick Children, Glasgow G3 8SJ
P A M RAINE, MB, FRCS, consultant paediatric surgeon
J G McLENNAN, FDS, DDORTH, consultant orthodontist, cleft palate clinic

Correspondence to: Mr P A M Raine.

Indications for hepatitis B immunoglobulin for neonates of HBsAg carrier mothers

It has been recommended that only babies born to mothers at high risk of transmitting hepatitis B virus—that is, whose serum is HBeAg positive, or when neither HBeAg nor anti-HBe is detectable[1]—should receive specific anti-HBs immunoglobulin.[2] Despite the scarcity of hepatitis B immunoglobulin in Britain questions have arisen about the necessity of providing specific immunoglobulin and, more recently, vaccine for use in babies born to anti-HBe positive mothers as well as to high risk mothers. Because of the lack of data available in Britain we decided to assess the risk of transmission in carrier mothers attending the antenatal clinic at Edgware General Hospital.

Subjects, methods, and results

Wherever possible serum samples from the mother were obtained at booking and again before delivery. Samples were also obtained from the infants at various times after birth. Children were followed up for an average of 27 months (range 7-60 months). Serum samples were tested for HBsAg, anti-HBs, HBeAg, anti-HBe, and anti-HBc by solid phase radioimmunoassays, as described.[3] All samples positive for HBsAg were also tested for significant levels of anti-HBc IgM by radioimmunoassay and the level of HBsAg quantified by reverse passive haemagglutination (Hepatest; Wellcome Reagents, Beckenham, Kent). During the first year of our study (1978-9) the prevalence of HBsAg in mothers was one in 150, reflecting the high proportion of immigrants in our patient population. Eighteen carrier mothers and their 27 children were available for further study (table).

Three mothers were carriers of HBeAg. All had high serum values of HBsAg with reverse passive haemagglutination titres in excess of 1 in 1000. One Chinese mother had three children, all of whom were HBeAg positive carriers. A second Chinese mother had two children; one was an HBeAg positive carrier and the other remained uninfected. Both had received a single dose of hepatitis B immunoglobulin more than 48 hours after birth. A Filipino mother had two children, one of whom had evidence of past infection (anti-HBc positive) and the other had not been infected. Three mothers were carriers whose serum contained neither HBeAg nor anti-HBe. In this group a single child, aged 4½ years, was found to be immune to hepatitis B virus; his 2 year old brother had not been infected. Twelve mothers were anti-HBe positive carriers. The reverse passive haemagglutination titre in serum was in excess of 1 in 1000 in three, between 1 in 100 and 1 in 1000 in four, and less than 1 in 100 in five. Three mothers had two children followed up, and the others one child each. Of these 15 children, only one had serological evidence of infection (anti-HBc positive, anti-HBs positive). The HBsAg titre of the mother was greater than 1 in 1000. The remaining 14 children had not been infected.

Transmission of hepatitis B virus by HBsAg carrier mothers

Mothers		Children				
		Outcome				
State	No	No uninfected	No immune	No of carriers	Total	Infection rate (%)
HBeAg positive	3	2*	1	4*	7	71
HBe/anti-HBe negative	3	4	1	0	5	20
Anti-HBe positive	12	14	1	0	15	7

* One child in each group (both born to Chinese mother) had received single dose of hepatitis B immunoglobulin more than two days after birth.

Comment

The results of this limited study in Britain reflect those of more extensive studies overseas,[1] indicating that children born to anti-HBe positive mothers are not only unlikely to become infected but if they do they are unlikely to become carriers. When hepatitis B immunoglobulin is in short supply, and to avoid a dilution of effort, we believe that our results support a policy of its provision only for babies at high risk. As in other studies,[4] most of our HBsAg positive patients attending the antenatal clinic were women born outside north west Europe. In our study only two women (one British) were white. Of the remainder, 10 were Asian, four African, and two came from Latin America. All these would have been considered for hepatitis screening anyway, since they came from countries where hepatitis is highly endemic. Nevertheless, we think that limited studies of a similar nature should be undertaken elsewhere in Britain, if only to confirm the low prevalence of transmission of hepatitis B to neonates among British born white women and to disclose any local variations, such as the four out of 22 children born to anti-HBe positive white carrier mothers in Northern Ireland who showed markers of infection with hepatitis B virus.[5]

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1 Beasley RP, Trepo C, Stevens CE, Szmuness W. The e antigen and vertical transmission of hepatitis B surface antigen. *Am J Epidemiol* 1977;**105**:94-8.
2 Polakoff S. Immunisation of infants at high risk of hepatitis B. *Br Med J* 1982;**285**: 1294-5.
3 Tedder RS, Cameron CH, Wilson-Croome R, Howell DR, Colgrove A, Barbara JAJ. Contrasting patterns and frequency of antibodies to the surface, core and e antigens of hepatitis B virus in blood donors and in homosexual patients. *J Med Virol* 1980;**6**:323-32.
4 Derso A, Boxall EH, Tarlow MJ, Flewett TH. Transmission of HBsAg from mother to infant in four ethnic groups. *Br Med J* 1978;i:949-52.
5 Bharucha C, Crowley D, McClelland M, Crawford RJ. Perinatal transmission of hepatitis B in Northern Ireland. *Br Med J* 1983;**286**:439.

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North London Blood Transfusion Centre, Edgware, Middlesex HA8 9BD
J A J BARBARA, MSC, PHD, top grade microbiologist
D R HOWELL, BSC, senior scientific officer
MARCELA CONTRERAS, MD, director

Virology Section, Department of Microbiology, Middlesex Hospital Medical School, London W1
R S TEDDER, MRCP, MRCPATH, senior lecturer in microbiology
MOYA BRIGGS, BSC, senior research assistant

Edgware General Hospital, Edgware, Middlesex HA8 0AD
P J SANDERSON, PHD, FRCPATH, consultant microbiologist
JILL WOOD, SRN, research nurse
G BEVAN, FRCP, DTM, consultant physician

Correspondence to: Dr J A J Barbara.