Syncope on exertion or emotion, whether or not accompanied by convulsions, is rarely epileptic and should be investigated for a cardiac cause. Initial investigations should include a chest radiograph, echocardiogram, and standard electrocardiogram; these should be followed by an examination of the heart rate and rhythm during exercise. This can be done by means of an exercise test or, more simply in children, by 24 hour ambulatory electrocardiographic monitoring. An event marker on the monitor can be pressed if the child develops any symptoms during the 24 hours of the recording, so that the heart rate and rhythm at the time of the event can be identified when the tape is being examined. If these more extended tests of heart rhythm are not performed, this particular cardiac rhythm disorder, which is dangerous but treatable, will be missed.

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Perinatal hepatitis B virus detection by hepatitis B virus-DNA analysis

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SUMMARY Maternal transmission of hepatitis B virus infection in relation to the hepatitis B e antigen/antibody system and serum hepatitis B virus-DNA were evaluated. Results indicate that hepatitis B virus-DNA analysis can identify hepatitis B serum antigen positive mothers who may transmit infection to their offspring.

Perinatal transmission of hepatitis B virus infection from hepatitis B surface antigen positive mothers to their infants seems to be associated primarily with the presence of maternal hepatitis B e antigen.¹ Most mothers who are hepatitis B e antigen positive transmit the infection to their infants, whereas those who have antibody to hepatitis e antigen or are negative for both hepatitis B e antigen and antibody rarely infect their infants.² It has recently been shown, however, that perinatal transmission of hepatitis B virus infection may occur frequently, even in mothers positive for hepatitis B e antibody

or negative for both hepatitis B e antigen and antibody.^{3,4} We evaluated the risk of perinatal hepatitis B virus transmission from asymptomatic hepatitis B surface antigen positive mothers in relation to the hepatitis B e antigen/antibody system and serum hepatitis B virus-DNA.

Patients and methods

While screening for hepatitis B surface antigen in the antenatal clinic, we identified 96 hepatitis B surface antigen positive pregnant women out of 1500 tested. All were asymptomatic. Plasma from these women was stored frozen at -70°C until assayed for the following: hepatitis B core antibody, hepatitis B surface antibody, and hepatitis B e antigen and antibody (Abbott Laboratories); liver function tests (measured by standard laboratory methods); and hepatitis B virus-DNA (spot technique according to Scotto *et al.*, 1983).⁵ These determinations were also carried out in the respective offspring at birth and, thereafter, monthly for one year. All babies of

hepatitis B surface antigen positive mothers received three doses (0.5 ml each) of hepatitis B immunoglobulin at birth and at 3 and 6 months of age.

Results

Four (4%) of the 96 hepatitis B surface antigen positive pregnant women included in this study were positive for hepatitis B e antigen, 89 (93%) for hepatitis B e antibody, and three (3%) were negative for both markers (Table).

Hepatitis B virus-DNA was detected in the serum of all the mothers who were hepatitis B e antigen

positive and in 10 of those positive for hepatitis B e antibody (Figure). Two mothers positive for hepatitis B e antigen showed a high concentration of hepatitis B virus-DNA (over 1 µg/l). The remaining two mothers positive for hepatitis B e antigen and three of the 10 positive for hepatitis B e antibody showed hepatitis B virus-DNA values ranging from 1 µg to 100 ng/l. The remaining seven mothers positive for hepatitis B e antibody showed concentrations of about 1 ng/l of hepatitis B virus-DNA.

At follow up, a transient hepatitis B surface antigen positivity lasting less than 15 days and associated with the development of hepatitis B core antibody IgM was detected in two infants, one of whom was born to a mother positive for both hepatitis B e antigen and hepatitis B virus-DNA and the other to a mother positive for hepatitis B e antibody and hepatitis B virus-DNA. These infants showed normal liver function tests and at 1 year of age were both positive for hepatitis B surface and core antibody IgG.

One infant, born to a hepatitis B e antigen positive mother with hepatitis B virus-DNA in the serum, showed persistent hepatitis B surface antibody positivity at 15 months. In all the other newborns concentrations of hepatitis B core antibody IgG decreased progressively and became undetectable at 6 to 8 months of age; hepatitis B core antibody IgM was never found.

Table Serum hepatitis B virus (HBV)-DNA in 96 hepatitis B surface antigen positive pregnant women in relation to the hepatitis B e antigen/antibody system

	No	HBV-DNA concentration		
		> µg/l	1 µg-100 ng/l	1-10 ng/l
Hepatitis B e antigen positive	4	2	2	—
Hepatitis B e antibody positive	89	—	3	7
Hepatitis B e antigen/antibody negative	3	—	—	—

Figure Autoradiogram of hepatitis B virus-DNA spot hybridisation. A (1, 5, 10), B (5, 8, 10), and C (1, 2, 3, 12) show serum samples positive for hepatitis B virus-DNA.

Lane C (6, 7, 8) shows different dilutions of hepatitis B virus-cloned DNA (1 µg/l, 500 ng/l, and 100 ng/l).

Discussion

This study shows that serum hepatitis B virus-DNA analysis is a very sensitive and specific method of identifying those hepatitis B surface antigen carriers who are at high risk of transmitting infection to their offspring. Hepatitis B virus-DNA was found in all mothers positive for hepatitis B e antigen for whom the risk of perinatal transmission was already established.¹ A consistent proportion (11%) of mothers positive for hepatitis B e antibody, and, therefore, considered at low risk,¹⁻² showed hepatitis B virus-DNA in the serum, indicating the presence of replicating hepatitis B virus and thus a high infectivity.⁵

Perinatal hepatitis B virus transmission occurred in only three offspring, all of whom were born to hepatitis B virus-DNA positive mothers. One of these mothers was also positive for hepatitis B e antibody and the others for hepatitis B e antigen.

In evaluating these results it should be remembered that the maternal transfer of hepatitis B surface antigen in these babies may have been affected by the immunoglobulin administration, and this may explain why no persisting carrier of hepatitis B surface antigen was found among them. Our results suggest that transmission is primarily

related to the presence of hepatitis B virus-DNA in the serum. The lack of a control group, however, and the small number of subjects included do not allow any definitive conclusions on this point.

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Laxative abuse and secretory diarrhoea

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SUMMARY Three children with chronic diarrhoea secondary to laxative abuse are reported. Growth disturbance, a previously unrecognised feature of this form of abuse, is recorded.

Laxative abuse is well recognised as a cause of chronic diarrhoea in adults,¹ but the diagnosis is rarely considered in children. Three children presented with chronic diarrhoea secondary to laxative abuse during a three year period when 600 new referrals were assessed.

Case reports

Case 1. A 3 year old boy was referred with chronic diarrhoea. After an acute infection at 3 months of age, he had had diarrhoea every four to six weeks

and passed up to eight watery stools each day for four to five days. A progressive fall off in growth occurred. The elimination of cows' milk and gluten from his diet had not altered his clinical course. The parents had long standing marital conflicts and his mother had required psychiatric treatment: she denied laxative administration.

The patient was a quiet, pale boy with height (87 cm) and weight (10.8 kg) both below the fifth centile. The remainder of the physical examination was normal. Stool smear contained no neutral fat or fatty acid crystals. Haematological and biochemical assessment, stool examination, and stool culture were all normal. Dietary assessment of caloric intake varied from 32 to 80% of recommended nutritional intake.

On assessment in hospital, stools were initially normal, but two days later became watery. They were negative for reducing substances. Stool elec-