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Congenital heart block diagnosed antenally associated with multiple fetal abnormality

The following report illustrates how the diagnosis of congenital heart block can be made before birth.

Case Report

A grossly abnormal female infant weighing 2040 g was born at 36 weeks' gestation. Two previous pregnancies had resulted in normal male term infants. The present pregnancy was uncomplicated until the 34th week, when the 25-year-old mother was admitted with acute polyhydramnios. It was difficult to hear the fetal heart with a stethoscope and sonicaid. An abdominal x-ray film showed no evidence of intrauterine death or fetal abnormality. Urinary oestriol values were normal. Ultrasonic examination showed a posterofundal placenta and gross polyhydramnios. Using the time position scan, the fetal heart rate was 56 beats/min. A simultaneous recording of the maternal pulse was 120 beats/min. Amniocentesis was performed at 35 weeks gestation with the removal of 1200 ml of clear fluid. At the same time, 9 ml of iophendylate (Myodil) was injected into the amniotic sac. The amniogram showed the absence of contrast medium within the fetal gut but no other abnormality. A lecithin: sphingomyelin ratio was 0.6:1 on the fluid obtained.

After the spontaneous onset of premature labour the fetal heart rate pattern did not alter with uterine contractions (see fig.). The intra-partum fetal electrocardiogram (E.C.G.) was recorded by connecting the fetal scalp

electrode to a standard E.C.G. machine. It showed complete A-V dissociation consistent with third-degree heart block (see fig.). The labour and delivery were normal. The Apgar score of the infant at birth was 2 at one minute and 2 at 10 minutes. The baby gasped through a minute oral opening. She had a gross cleft palate and a cleft upper and lower lip. There was no mandible, the floor of the mouth being composed entirely of skin. Only a small nodule of tissue about 1 cm in diameter formed the tongue. The left ear was placed low on the skull. There was no trace of the right ear or auditory canal. Resuscitation was not possible. The infant died 15 minutes after delivery. In addition, the necropsy showed a dextrocardia and cardiac enlargement as well as a ventricular septal defect. There was agenesis of the right lung and the left lung was only partly divided into two lobes. There was complete situs inversus of the abdominal viscera with incomplete rotation of the gut and partial failure of secondary fixation of the colon. The genitourinary, endocrine, and central nervous systems were normal. The placenta weighed 460g and was also normal. Viral and chromosomal studies on the infant's blood showed no abnormality.

Discussion

It is important to differentiate fetal bradycardia due to hypoxia from congenital heart block. The accepted way of investigating a fetal heart rate trace as shown in the fig. is to determine the fetal pH before deciding on whether or not to perform a caesarean section. The E.C.G. is only helpful in addition. An unnecessary caesarean section may thus be prevented, especially if a possible associated abnormality existed that was not compatible with extrauterine life.

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Septic abortion in women using intrauterine devices

It has been known for some time that women who become pregnant with an intrauterine contraceptive device (I.U.C.D.) in situ are at a greatly increased risk of spontaneous abortion.¹ Furthermore, several reports were published in 1974 which suggested that such abortions are particularly likely to be septic, sometimes with fatal results for the mother.² Most of the evidence has incriminated the Dalkon shield,³⁻⁴ but other devices are not entirely free from suspicion.⁵

We present here data relevant to this problem accumulated during a long-term prospective study of women using different methods of contraception.

Patients, Methods and Results

The methods used in our prospective study have been described elsewhere.¹ In brief, 17 000 married women, aged 25-39 years, were recruited at one or other of 17 family planning clinics. At entry 56% were using oral contraceptives, 25% were using a diaphragm, and 19% were using an I.U.C.D. These women are being followed up at the clinics or, when necessary, by post, telephone, or home visiting. Information collected from each woman includes details of pregnancies and their outcome and changes in contraceptive practices. Losses to follow-up at the time of writing were at the rate of about one per 100 women a year. When our analysis was undertaken, 58 spontaneous abortions had occurred among women becoming pregnant with an I.U.C.D. in situ and 57 had occurred among women experiencing an unplanned pregnancy while using some other method of contraception. In addition to examining the data routinely recorded during the study inquiries were made of general practitioners and, where appropriate, hospital consultants to try to find out whether any of these 115 abortions had been accompanied by evidence of sepsis.

The characteristics of the two groups of women suffering a spontaneous abortion are shown in the table. Those in the I.U.C.D. group were slightly younger and of slightly lower social class than those in the "other methods" group. The absence of any nulliparous women in the I.U.C.D. group was expected since almost all the I.U.C.D. users in our study have previously had children. Only four of the women in the I.U.C.D. group were definitely using a Dalkon shield. Of the remainder 34 were using a Lippe loop, 12 a Saf-T-coil, and eight a device of unknown type. We defined a septic abortion



(a) Baseline bradycardia at 55 beats/min with loss of beat-to-beat variation and with no decelerations. (b) Third-degree heart block on intra-partum fetal E.C.G.