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Congenital Heart Block

A. U. Antia and J. P. de V. Hendrickse

Departments of Paediatrics and Obstetrics & Gynaecology, University College Hospital, Ibadan

Antia A. U. and Hendrickse, J. P. V. de (1974). *Nigerian Journal of Paediatrics*, **1** (**1**), 42. **Congenital Heart Block.** A case of congenital heart block is described. Failure to diagnose this condition antenatally led to delivery of the patient by Caesarean section, the indication for which was "foetal distress". Antenatal diagnosis of the condition will prevent unnecessary surgical intervention during labour. Clinical diagnosis of the condition is based on the following criteria: *antenatally*, a slow (usually about half the normal rate) but regular foetal heart rate; *intra partum*, a slow but regular foetal heart rate in the absence of meconiumstained liquor; *postnatally*, a slow, regular pulse, electrocardiographic evidence of complete heart block, and absence of any history of rheumatic fever, diphtheria or any other infection.

Although congenital heart block is a rare condition, it is of great clinical importance in obstetric and paediatric practice. The obstetrician must constantly bear the condition in mind so as to prevent unwarranted surgical intervention during labour, since the foetal bradycardia of congenital heart block may be regarded as a sign of foetal distress. The paediatrician on the other hand, will avoid unnecessary investigations into the cause of a slow pulse rate in a child particularly in the neonatal period.

This paper reports a case of congenital heart block which was undiagnosed antenatally. This led to delivery of the baby by Caesarean section on account of "foetal distress".

Case Report

Mrs D. O. (U.C.H. 145924) a 27-year old Nigerian primigravida was referred to the antenatal clinic because of amenorrhoea for 12–14 weeks, vaginal bleeding and lower abdominal pain. She also complained of vomiting, headache, vaginal discharge and backache. The abdominal pains and vaginal bleeding recurred for several weeks. She received at different times chlorpromazine and phenobarbitone for vomiting, and metronidazole (Flagyl) for trichomonas vaginal infection. In addition, she regularly took folic acid, iron and pyremithamine (25 mg. weekly) throughout the pregnancy.

Although the foetal heart was heard at each visit to the antenatal clinic, as is the standard practice, no record was made of the actual foetal heart rate.

The patient was admitted to the hospital in labour at the 37–38th week of pregnancy. Physical examination revealed a healthy pregnant young woman in established labour. The blood pressure was 100/60 mm.Hg. The foetus presented by the vertex and the head was engaged. The foetal heart rate was recorded as 80 per minute.

On vaginal examination the os uteri was two fingers dilated and the membranes were intact. No cord was palpable. The membranes were ruptured artificially producing clear liquor. Subsequently, the foetal heart rate fell to 60 per minute. In the absence of facilities for foetal electrocardiography and foetal scalp vein sampling for evidence of foetal acidosis, a clinical diagnosis of foetal distress was made and consequently an emergency Caesarean section was performed. Post-operative recovery was satisfactory and the puerperium normal.

The baby, (O.O., U.C.H. 157381) a female, cried immediately after delivery. Apart from routine clearing of the airways, no resuscitative measures were necessary. The birth weight was 2.6 kg, length, 43.2 cms. and head circumference 33 cms. On physical examination the baby was essentially normal except for the regular, but slow pulse rate (60 per minute). There was no change in the heart rate with prolonged crying. The peripheral pulses were equal and of good volume. There were no cardiac enlargement, praecordial thrill or abnormal pulsations. The heart sounds were normal. There was a grade 1–2 mid-systolic murmur over the praecordium maximum in the 4th left inter-costal space; no diastolic murmur was present. Examination of the lungfields, abdomen and central nervous system revealed no abnormality.

A chest X-ray showed normal vascularity and moderate cardiac enlargement. An electrocardiogram revealed complete heart block (atrial and ventricular rates were 136 and 60 per minute respectively). There was no evidence of chamber hypertrophy or dilatation.

Progress

The child has attended the paediatric cardiac clinic regularly for follow-up. At the last clinic attendance on 13 March, 1972 there were no cardiac symptoms. Exercise tolerance was normal. Physical examination revealed a well-nourished child weighing 18.4 kg. There was neither cyanosis nor clubbing of the fingers. Pulse rate was 60 per minute and regular. Blood pressure was 100/60. There was moderate cardiac enlargement, as well as normal heart sounds and a grade II mid-systolic ejection murmur over the praecordium but maximum in the left lower sternal border. No diastolic murmur or thrill was detected. Chest X-ray showed cardiomegaly (Cardio-thoracic Ratio=67 per cent) and normal vascularity. Electrocardiogram remained essentially the same as previously noted.

Comments

Congenital heart block is of great clinical importance during and after intra-uterine life. In order to avoid surgical intervention during labour, diagnosis of this condition should be made antenatally. The patient described in this report was delivered by Caesarean section, the indication for this surgical procedure being "foetal distress". Although the foetal heart was heard during the antenatal period, there was no record of the actual foetal heart rate. It cannot be overemphasized that every obstetrician should be aware of this condition in order not to confuse it with the more common and true foetal distress syndrome. The antenatal diagnostic criterion of congenital heart block is a slow (usually about half the normal rate), but regular foetal heart rate, unassociated with other signs of foetal distress. Foetal electrocardiography during labour and determination of bicarbonate level using foetal scalp vein sampling are essential investigations which may be carried out to confirm the diagnosis of either condition.

Redman (1958) on reviewing the literature stated that there were only 13 cases of congenital heart block diagnosed before delivery. Subsequently, McNie and Johnstone (1959) reported a further 10 cases. More recently four other cases have been reported by Dunn (1960) and Gochberg (1964), thus bringing the total number of antenatal diagnosis of this condition in the literature to 27. In his survey of 67,000 deliveries, Gochberg found the incidence of antenatal diagnosis to be 1:22.000.

Postnatal diagnosis of congenital heart block is based on the criteria defined by Yater (1929), namely, a slow pulse rate observed at birth, and complete heart block demonstrated electrocardiographically in the absence of other signs of congenital heart disease. In the older child there should be no history of rheumatic fever, diptheria or other infections which might be incriminated. In spite of these apparently clear criteria, there are instances where it is difficult to ascertain whether a case of heart block is congenital or acquired. However, there can be no doubt that the case reported here was of congenital origin.

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