

CONTINUOUS FOETAL HEART RATE MONITORING OF TWINS DURING LABOUR

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Summary: Monitoring of twins in labour is described.

Key words: continuous fetal heart rate monitoring; twins; labour.

Steer and Beard (1973) reported how both twins could be monitored during labour using a scalp electrode and ultrasound techniques. Breuker *et al.* (1978) used phono and ultrasound cardiocardiography both during pregnancy and during delivery.

During pregnancy, the combination of phono and ultrasound cardiocardiography proved superior to phonocardiocardiography alone. During labour direct foetal electrocardiography of the first twin and

ultrasound cardiocardiography of the second was confirmed as the method of choice.

For many years now we have used continuous foetal heart rate monitoring on twins in labour, using two machines, one for a direct foetal electrocardiography and the second machine for abdominal ultrasound cardiocardiography (fig. 1).

The presence of two monitoring machines in a labour ward together with two resuscitators and two cots is obvious from the photograph. It is now possible to

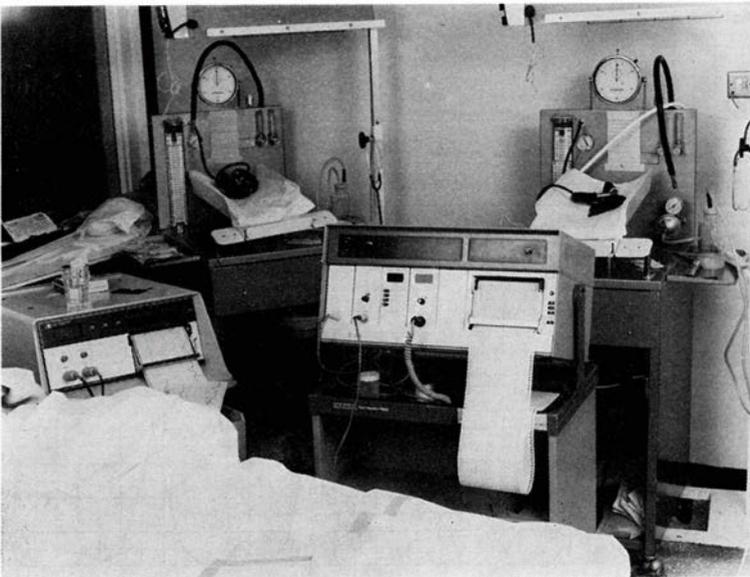


Fig. 1. — The cluttered delivery room.

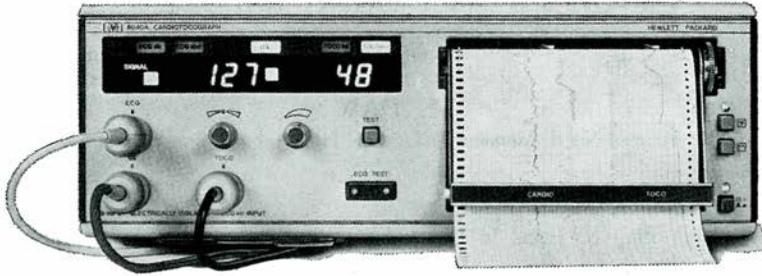


Fig. 2.

combine these two procedures on the same machine (fig. 2) and this is a report on twenty one twin pregnancies managed with this machine during labour.

METHOD

Twenty seven sets of twins were seen during the period under consideration, three sets were delivered by caesarian section prior to labour and three sets were delivered so soon after admission that monitoring during labour was not possible. Of the twenty one pairs in the study four were monozygotic and the remainder dizygotic.

The period of continuous foetal heart rate monitoring in labour on the twenty one pairs of twins varied from one hour to 20 hours with an average of seven hours.

Twenty infants were male and twenty two infants were female. There were no still births, though there was one peri-natal death, aged two days.

DISCUSSION

The risks of multiple pregnancy include prematurity, growth retardation, hypoxia and ante-partum foetal death.



Fig. 3. — Twin printout from one machine.

Monitoring during labour is also important as lower segment caesarian section may be indicated to deliver the stressed foetus, especially if it is the second twin (Hopper *et al.* 1981). It is impossible to obtain a foetal blood sample from the second twin in labour and the passage of meconium by the second twin can only be observed after the delivery of the first twin, so that monitoring the foetal heart rate of the second twin is the only method of detecting foetal distress prior to delivery of the first twin.

Fig. 1 shows how cluttered a standard delivery room becomes when two monitors are required to monitor twins. A single monitor frees space for other equipment, such as that needed for resuscitation for one or both infants at birth.

The print out of the two foetal heart rates on the same graph paper (fig. 3) allows not only an assessment of each twin

as regards foetal distress but also a comparison of one twin against the other as regards the stress of labour.

CONCLUSIONS

Continuous foetal heart rate monitoring of twins in labour is well established.

One machine can now monitor the two infants and our experience with twenty one sets of twins confirms this as a viable proposition.

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