



Fetal surveillance and assessment of fetal reactions

The Green Book of Neoventa Part II

K G Rosén

Annika Mårtendal

IFD Increased variability – Alarm reaction

A 24 year old G1 Po. Gestation age 39+5. Normal pregnancy.

PROGRESS OF LABOUR

Admitted to hospital with contractions. SROM at 21.00.

22:40 VE: Cx fully effaced, dilated 5 cm, vx-1. Clear liquor draining. IUPC inserted, FSE applied due to uncomplicated variable decelerations, noted on external CTG.

23:30 Epidural sited.

01:00 VE: Cx fully dilated, vx at the spines, clear liquor.

01:13 An attempt to start pushing.

01:29 Pushing stopped, allowing the presenting part to descend. Oxytocin infusion is started.

02:50 VE: Cx fully dilated, vx +2. Active pushing started.

03:52 Normal vaginal delivery.

NEONATAL OUTCOME

Baby girl. BW 3910 g. Apgar scores 9 – 10.

Cord Artery pH 7.11 pCO₂ 9.1 kPa BDecf 6.8 mmol/l.

Cord Vein pH 7.23 pCO₂ 6.8 kPa BDecf 5.3 mmol/l.

Normal outcome.

ASSESSMENT OF RECORDING

Recording of high quality starting at 22:45 and finishing at 03:50, 2 minutes prior to delivery.

Fig. 1 Stable baseline and marked FHR reactivity at start. Stable T/QRS showing a decrease during the initial 15 minutes.

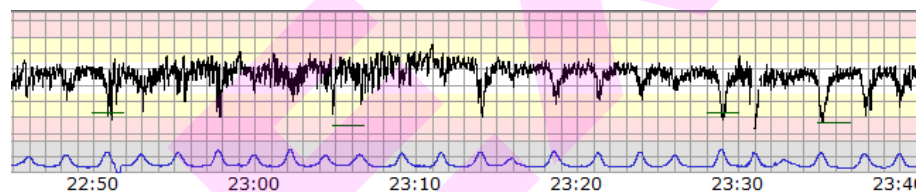
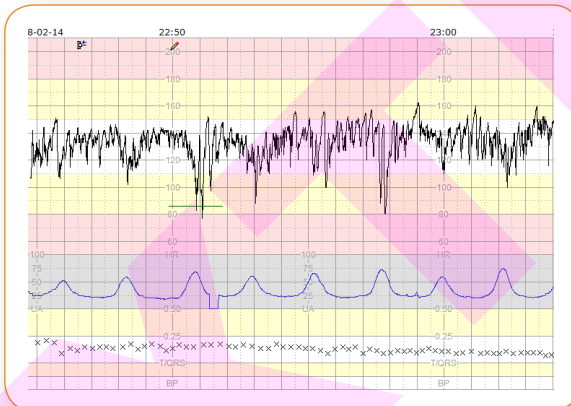


Fig. 2 The first hour.

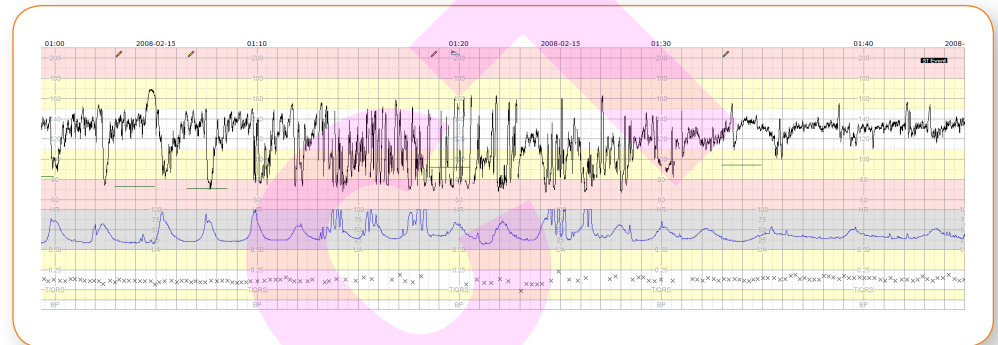


Fig. 3 Very marked FHR variations in connection with decelerations and pushing.

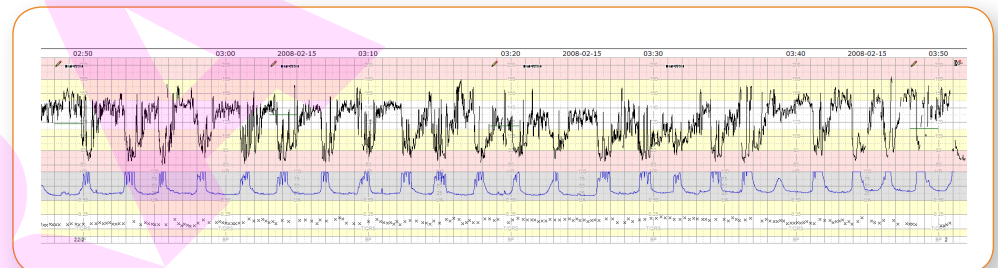


Fig. 4 Last hour of labour identifying a continuation of the increased reactivity/FHRV with ST-episodes of increase in T/QRS.

COMMENTS

An example of a stress response by a fetus in full control of the strain of labour characterised by the following:

1. Maximal reactivity at onset of the recording as seen by a saltatory pattern where the immediate FHR variations exceed 25 bpm.
2. Prolonged arousal reaction by a further increased FHRV in response to pushing.
3. Final episode in 2nd stage where the arousal becomes an alarm as the increase in reactivity is combined with an ST rise. This episode occurs within 20 minutes of delivery and we would not expect any acidemia.

Why would we see these extraordinary FHR changes? The initial, more regular pattern may be regarded as a strong reaction to a stimulus (contractions, skin puncture from FSE application?). Later on when pushing starts, hypoxia due to intermittent blockade of cord vein blood flow seems to be a probable explanation. Although hypoxic episodes are short lasting, they became frequent enough to initiate an ST rise.

MESSAGE

A saltatory FHR + ST Event = an alarm and intervention is required.