Early amniotomy increased the rate of fetal heart decelerations


Objective
To determine whether routine early amniotomy increases the rate of fetal heart rate abnormalities and caesarean section in women who are in spontaneous labour with singleton pregnancies.

Design
Secondary analysis of a randomised controlled trial.

Setting
11 secondary and tertiary care teaching hospitals in North America.

Patients
925 women (mean age 26 y, mean gestational age 40 wk) who were in spontaneous labour with singleton pregnancies. Inclusion criteria were intact membranes, cervical dilatation <6 cm, and availability of fetal monitoring records. Follow-up was 81%.

Intervention
Women were allocated to early amniotomy (membrane rupture as soon after randomisation as possible) or to no membrane rupture based only on medical indications. Analysis included 375 women allocated to early amniotomy and 377 to no membrane rupture.

Main outcome measures
Fetal heart decelerations (early, variable [severe or nonsevere], late, or prolonged) were measured, and an hourly rate of decelerations was calculated. The secondary outcomes were mode of delivery (spontaneous vaginal, instrumental extraction, and caesarean) and indications for caesarean section.

Main results
From the time of randomisation to full dilatation, the amniotomy group had higher mean hourly rates of early (3.0 vs 2.1, P = 0.048), severe variable (1.4 vs 0.7, P = 0.011), and late (3.3 vs 2.3, P = 0.021) decelerations than in the usual care group. The groups did not differ for mild variable (P = 0.55), prolonged (P = 0.44) decelerations, the need for epidural anaesthesia, oxytocin or narcotics; or mode of delivery (P = 0.55). The rate of caesarean section for fetal distress alone or with dystocia was higher in the amniotomy group (6.9% vs 3.1%, P < 0.05) (Table 9).

Conclusions
Routine early amniotomy for women in spontaneous labour was associated with a deceleration in higher hourly rates of early, late, and severe variable fetal heart rate. The rate of caesarean section for fetal distress, however, was increased.

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Commentary
Although routine early amniotomy has been advocated to shorten labour and reduce caesarean section rates for dystocia (1, 2), little evidence of its risks and benefits is available. We do not know the effect on maternal and fetal heart patterns, use of oxytocin, maternal comfort, caesarean delivery, neonatal Apgar scores, and cord blood gas levels.

The original publication of this study by Fraser and colleagues (3) reported that early amniotomy shortened labour and decreased dystocia with no difference in caesarean section rate, Apgar scores, cord blood gas levels, or percentage of abnormal fetal heart rate tracings. The secondary analysis showed that women in the amniotomy group laboured more quickly and had a higher hourly rate of fetal heart rate decelerations. The findings are consistent with other studies (4).