

Review: delayed pushing reduces rotational or mid pelvic instrumental deliveries but increases duration of the second stage of labour in women having epidural analgesia

Roberts CL, Torvaldsen S, Cameron C, *et al*. Delayed versus early pushing in women with epidural analgesia: a systematic review and meta-analysis. *BJOG* 2004;111:1333–40.

Clinical impact ratings GP/FP/Obstetrics ★★★★★☆ Obstetrics ★★★★★☆

Q In women with uncomplicated pregnancies having effective epidural analgesia in the first stage of labour, what is the effectiveness of delayed compared with early pushing?

METHODS



Data sources: Medline, CINAHL, EMBASE/Excerpta Medica (all from inception to October 2003), the Cochrane Central Register of Controlled Trials (searched October 2003), and bibliographies of relevant papers.



Study selection and assessment: randomised controlled trials (RCTs) of delayed versus early pushing in women having effective epidural analgesia in the first stage of labour and an uncomplicated pregnancy. Studies were assessed for allocation concealment, losses to follow up, and intention to treat analysis.



Outcomes: instrumental deliveries, and maternal and infant morbidity.

MAIN RESULTS

9 trials (2953 women) met the selection criteria. All trials included women at term with spontaneous or induced labour, effective epidural analgesia, and singleton births. Compared to early pushing, women allocated to delayed pushing had lower rates of rotational or mid-pelvic instrumental deliveries, but the groups did not differ for rates of any instrumental deliveries or second stage caesarean section (table). 3 trials (446 women) showed that delayed pushing increased duration of the second stage of labour more than early pushing (weighted mean difference 58 min, 95% CI 22 to 95 min, random effects model). 2 trials (293 women) showed no difference between delayed and early pushing on duration of pushing (weighted mean difference 1.11 min, CI -20 to 22 min, random effects model). Infant Apgar scores did not differ between delayed and early pushing.

CONCLUSION

In women with uncomplicated pregnancies having effective epidural analgesia in the first stage of labour, delayed versus early pushing

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reduces the risks of rotational or mid-pelvic instrumental deliveries but increases duration of the second stage of labour.

Commentary

The well done systematic review by Roberts *et al* included 9 trials. In the Cochrane Central Register of RCTs, only 1 RCT is included on this same topic in women with no epidural use. It is unfortunate that this subject has generated such little interest.

An epidural itself alters the natural mechanism of labour. Howell¹ shows that epidural use increases the rate of instrumental delivery and the incidence of malposition, which affects many women. The percentage of women with a baby not occiput-anterior (OA) at the end of labour rises from 7.3% to 16.8% with an epidural.

This systematic review is important for several reasons. When a woman labours with no epidural, delayed pushing generally means allowing the woman to decide when she wishes or can no longer resist the urge to push. An epidural appears to reduce this urge sometimes to non-existence. In this systematic review, delayed pushing was initiated at differing points varying from 1 hour to 3 hours after the discovery of full dilation, to when the head was visible, and to when the urge to push was strong.

Although the normal mechanism of rotation of the head to OA fails more often when an epidural is used, this failure may be overcome by delaying pushing. In this review, the incidence of rotational or mid-cavity forceps fell from 14% to 10%. The downside was that the duration of second stage is increased by 58 minutes. The authors describe this increased duration as “clinically important” but do not justify their statement.

Based on this review, women can be told that delayed pushing will shift 1 in 26 births from a mid-cavity to an outlet instrumental birth but will lengthen labour by 58 minutes and that it may prevent 1 caesarean delivery for every 80 women having an epidural.

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1 Howell CJ. Epidural versus non-epidural analgesia for pain relief in labour. *Cochrane Database Syst Rev* 1999(3):CD000331.

Delayed v early pushing in women with epidural analgesia in the first stage of labour*

Outcomes	Number of trials (n)	Weighted event rates			
		Delayed pushing	Early pushing	RRR (95% CI)	NNT (CI)
Rotational or mid pelvic instrumental deliveries	5 (2174)	10%	14%	31% (13 to 45)	26 (16 to 76)
Any instrumental deliveries	10† (2953)	35%	38%	8% (-1 to 16)	Not significant
Second stage caesarean section	7 (2703)	4.1%	5.4%	23% (-8 to 45)	Not significant

*Abbreviations defined in glossary; weighted event rates, RRR, NNT, and CI calculated from data in article using a fixed effects model.

†1 trial reported results for nulliparous and multiparous women separately; these were analysed separately in the meta analysis.