



Immediate or delayed pushing in the second stage of labor?

Is there any advantage to delaying pushing in the second stage of labor for nulliparous women receiving epidural analgesia?

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PRACTICE CHANGER

Recommend immediate, rather than delayed, pushing in the second stage of labor for nulliparous women receiving epidural analgesia. The rate of spontaneous vaginal delivery is the same, and there is a lower risk of postpartum hemorrhage and chorioamnionitis.

STRENGTH OF RECOMMENDATION

B: Based on an individual randomized controlled trial.¹

Cahill AG, Srinivas SK, Tita ATN, et al. Effect of immediate vs delayed pushing on rates of spontaneous vaginal delivery among nulliparous women receiving neuraxial analgesia: a randomized clinical trial. *JAMA*. 2018;320:1444-1454.

ILLUSTRATIVE CASE

A 27-year-old G1P000 at term with an uncomplicated pregnancy has been laboring for 6 hours with an epidural in place and a reassuring fetal heart tracing. She is at -2 station with complete cervical dilation and effacement. Should she push now or delay pushing to allow for more descent?

More than 10,000 women give birth each day in the United States, yet few of our approaches to labor management are evidence based.² For example, there are no clear guidelines on whether immediate pushing or delayed pushing (waiting 1-2 hours) in the second stage of labor (the time from complete cervical dilation to delivery of the fetus) leads to better outcomes.

A recent Cochrane review, which included very low- to moderate-quality trials of nulliparous and multiparous women using epidural analgesia showed that delayed pushing resulted in more vaginal deliveries, longer duration of second stage of labor, and shorter duration of pushing.³ But many of the trials included in this Cochrane review were noted to have study design limitations and significant heterogeneity.

A recent retrospective study found that delayed pushing resulted in longer duration of pushing and increased risks for cesarean section, operative vaginal delivery, and postpartum hemorrhage in nulliparous patients with and without epidurals.⁴ The World Health Organization recommends delayed pushing in women with epidural analgesia if time and fetal monitoring resources are available.⁵

STUDY SUMMARY

Does the timing of second stage pushing efforts affect outcomes?

This multicenter randomized controlled trial (RCT) evaluated the effect on spontaneous vaginal delivery of delayed pushing vs immediate pushing in 2404 term nulliparous women using epidural analgesia.¹ Patients were ≥ 37 weeks' gestation. Once patients achieved 10 cm of cervical dilation, they were randomized in a 1:1 ratio to either immediate pushing or to delayed (for 60 minutes) pushing (unless there was an irresistible urge to push or they were otherwise instructed by their provider).

CONTINUED

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Delaying pushing once the cervix is completely dilated is not indicated, even for nulliparous women receiving epidural analgesia.

Outcome and results. The primary outcome was spontaneous vaginal delivery without the use of any operative support. The mean time to pushing after complete cervical dilation was 19 minutes in the immediate pushing group and 60 minutes in the delayed group. There was no difference in the rate of spontaneous vaginal delivery between the immediate and delayed pushing groups (86% vs 87%, respectively; $P = .67$). The immediate pushing group had a shorter duration of second stage of labor (102 minutes vs 134 minutes; mean difference [MD] = -32 minutes; 95% confidence interval [CI], -37 to -27; $P < .001$) and a slightly longer duration of active pushing (84 minutes vs 75 minutes; MD = 9.2 minutes; 95% CI, 6-13; $P < .001$).

There was no significant difference in operative vaginal or cesarean deliveries. Postpartum hemorrhage was lower in the immediate pushing group (2.3% vs 4%; risk ratio [RR] = 0.6; 95% CI, 0.3-0.9; $P = .03$; number needed to treat [NNT] = 58), as was chorioamnionitis (6.7% vs 9.1%; RR = 0.7; 95% CI, 0.66-0.90; $P = .005$; NNT = 40). There was no significant difference in neonatal morbidity between groups. And in subgroup analysis, there was no significant difference in rates of vaginal delivery based on fetal position (occiput anterior, posterior, or transverse) or station (defined as high [< 2 cm] or low [≥ 2 cm]) between groups. Recruitment was stopped early at 75% because there was no difference in the primary outcome and there was concern regarding an increased risk of hemorrhage in the delayed pushing group.

WHAT'S NEW

There's no good reason to delay pushing

Delaying pushing once the cervix is completely dilated is not indicated, even for nulliparous women receiving epidural analgesia, as it does not decrease the rate of spontane-

ous vaginal delivery. It does, however, increase the length of second stage labor and the risk of postpartum hemorrhage and chorioamnionitis.

CAVEATS

Study was stopped early, and groups were unblinded

This study was stopped early, so it is not known if it was underpowered for some of the secondary outcomes. Also, it was not possible to blind the groups, so it is not clear if any bias in patient management or diagnosis resulted.

CHALLENGES TO IMPLEMENTATION

Will current practice and culture pose obstacles?

Although the overt challenges to enacting a policy of immediate pushing are minimal, the inertia of current practice and culture could affect the implementation of this strategy. **JFP**

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References

1. Cahill AG, Srinivas SK, Tita ATN, et al. Effect of immediate vs delayed pushing on rates of spontaneous vaginal delivery among nulliparous women receiving neuraxial analgesia: a randomized clinical trial. *JAMA*. 2018;320:1444-1454.
2. Hamilton BE, Martin JA, Osterman MJK, et al. Births: provisional data for 2018. *Vital Statistics Rapid Release*. May 2019; Report No. 007. www.cdc.gov/nchs/data/vsrr/vsrr-007-508.pdf. Accessed April 22, 2020.
3. Lemos A, Amorim MM, Domales de Andrade A, et al. Pushing/bearing down methods for the second stage of labour. *Cochrane Database Syst Rev*. 2017;3:CD009124.
4. Yee LM, Sandoval G, Bailit J, et al. Maternal and neonatal outcomes with early compared with delayed pushing among nulliparous women. *Obstet Gynecol*. 2016;128:1039-1047.
5. WHO recommendations: intrapartum care for a positive childbirth experience. Geneva: World Health Organization; 2018. www.who.int/reproductivehealth/publications/intrapartum-care-guidelines/en/. Accessed April 22, 2020.



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