G1P0 at 41w1d arrives for IOL for postdates. No other medical IOL indications.

Exam: NST reactive; UC q 10 min not uncomfortable; EFW 8 lbs; CE: 1/50%/-3/medium/posterior

<table>
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<th>3</th>
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<td>Dilation</td>
<td>0</td>
<td>1-2</td>
<td>3-4</td>
<td>5-6</td>
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<td>Effacement (%)</td>
<td>0-30</td>
<td>40-50</td>
<td>60-70</td>
<td>80</td>
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<td>Station</td>
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<td>-1</td>
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<td>Consistency</td>
<td>Firm</td>
<td>Medium</td>
<td>Soft</td>
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<td>Position</td>
<td>Posterior</td>
<td>Middle</td>
<td>Anterior</td>
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</tbody>
</table>

The higher the score, the more favorable the cervix with the clinical trial showing a score of 9 or more associated with 100% successful inductions.

HOW WOULD YOU LIKE TO PROCEED?
Outcomes:

Time to delivery

Time to active labor

C-section rate

Complications

491 women randomized to:

- Miso only (25 mcg PV q 3 x 5 doses)
- Foley only (60 cc saline in 30 ml balloon; remove after 12 hours) then pitocin
- Miso plus foley catheter together
- Pitocin plus foley catheter together (2 mu/min; increase by 2 mu/min q 15; 40 mu/min max)

All groups:

- AROM at 4 cm or earlier
- C/S at 36 hours IOL if not in active labor and if not delivered after 12 hours of active labor
- Controlled wrt indication for IOL, Cervical dilation, bishop score
When censoring for cesarean delivery and adjusting for parity, the Foley-oxytocin group is no longer significantly faster than single-agent methods and the misoprostol-Foley group is superior.
G1P0 at 41w1d arrives for IOL for postdates. No other medical IOL indications.

Exam: NST reactive; UC q 10 min not uncomfortable; EFW 8 lbs; CE: 1/50%/-3/medium/posterior

After receiving a single dose of miso, she is having more than 3 contractions/10 min. She is sleeping through the contractions and they are not palpable.
G3P2 at 41w1d arrives for IOL for postdates. No other medical IOL indications. She has a hx of long inductions, has kids at home and is requesting a Foley placement followed by return to home x 12 hours or until Foley comes out.

Exam: NST reactive; UC q 10 min not uncomfortable; EFW 8 lbs; CE: 1/50%/-3/medium/posterior

HAVE YOU EVER DONE THIS? WHAT ISSUES SHOULD BE CONSIDERED?
G1P0 at 41 w undergoing IOL for postdates. No other medical IOL indications. S/P Foley x 12 hours and miso x 3 Exam: NST category 1; UC q 3-4 min; EFW 8 lbs; CE: 3/50%/-3/medium/posterior

G1P0 presents in spontaneous latent labor at 41w. Exam: NST category 1; UC q 3-4 min; EFW 8 lbs; CE: 3/50%/3/medium/posterior. She was “long and closed” in the office yesterday.

Consider what role amniotomy plays in the management of these two patients.
Prospective randomized controlled study of 200 women undergoing IOL found AROM at 3 cm vs. spontaneous ROM after cervical ripening (both groups) shortened time to delivery (13.7 hours vs. 22.7 hours) without increasing c/s rates. Vaginal delivery within 24 hours 89% vs. 45%.

Cochrane review of 15 studies found that routine amniotomy for women in spontaneous labor did not shorten duration of labor or change incidence of c/s births.
DOES LABORING UPRIGHT IN THE SECOND STAGE OF LABOUR IMPROVE OUTCOMES

- G2 P1 at term with uneventful first stage and complete/0 station/OA
- EFW 8.5 lbs, vertex,
- no epidural and starts pushing at midnight
  - Is there anything you can recommend to improve patients outcome at this point?
Women without epidural anesthesia -

- Slight reduction in 2nd stage -3.71 min CI -8.78 to 1.37;
- Significant reduction in assisted deliveries RR .78 CI .68 to .90;
- Reduction in episiotomies RR .79 CI .7 to .90;
- Fewer abnormal heart rate tracings RR .46 CI .22 to .95
- Increased second degree tears RR 1.35 CI 1.2- 1.51
- Increased EBL >500 cc RR 1.65 CI 1.32- 2.6


UPRIGHT PUSHING IN UNBLOCKED PATIENTS REDUCES TIME (MINIMAL), OPERATIVE INTERVENTION RR, ABNORMAL FHR TRACINGS, EPISIOTOMIES BUT INCREASES PPH, 2ND DEGREE LAC.
G2 P1 at term with uneventful first stage, Received her epidural 2 hours ago at 8 cm;
Examed at midnight and found to be 0 station/complete/OA
EFW 8.5 lbs, vertex,

DO YOU RECOMMEND SHE PUSH UPRIGHT OR NOT?
Does laboring upright in the second stage of labour improve outcomes?

- **Women with epidural anesthesia**
- **No difference** between upright and recumbent positions on primary outcomes of:
  - **Operative birth** (Cesarean or OPV RR 0.97 CI 0.97 to 1.29)
  - Or **duration of the second stage** - 22.98 CI -99 to 53 minutes
  - Nor in important neonatal outcomes NICU admits, low PH
  - Overall authors felt insufficient data to say anything conclusive about the effect of position for the second stage of labor with epidural - Encourage further large trials

Kep E, Kingswood CJ, Kibuka M, Thomton JG
Position in the second stage of Labour for women with epidural anaeesthesia. Cochrane Database of Systematic Reviews 2013, Issue 1 Art. No: CD008070. DOI:10.1002/14651858.CD008070.pub2

**DOES LABORING UPRIGHT IN THE SECOND STAGE OF LABOUR IMPROVE OUTCOMES?**
G2 P0 at term with uneventful first stage and complete/0 station/ OA

EFW 8.5 lbs, vertex,

no epidural and starts pushing at midnight

She is pushing upright, then on her side, briefly on her back and at 0100 she is found to be +1 station with caput to +2? FHR tracing 140 with good variability - –

HOW LONG SHOULD YOU EXPECT IT TO TAKE TO GO FROM +1 TO +2
FROM ZHANG ET ALL. REASSESSING LABOR CURVE IN NULLIPAROUS WOMEN. AM J OBST & GYN 2002

- From Station +1 to +2 -
  - Median 16 min
  - 95% 176 min (3 hours)

- From Station +2 to +3
  - Median 7 min
  - 95% 38 min
G2 P0 at term with uneventful first stage and complete/0 station/OA

- EFW 8.5 lbs, vertex,
- no epidural/0station and starts pushing at midnight

She is pushing upright, then on her side, briefly on her back and at 0045 she is found to be +1 station with caput to +2? FHR tracing 140 with good variability --

and she labors another 2 hours and is found to be +2 station with caput to +3. **Stop or allow labor to go on?**

Safe Prevention of Primary C-section. Are the hour limits minimums or maximums?
- 4 hours for Nulliparous with epidural
- 3 hours for Nulliparous without epidural
- 3 hours for Multiparous with epidural
- 2 hours for Multiparous without epidural
- Do you think of these as minimums or maximums?

- **5 ½ hours** for nulliparous with epidural to reach the 95% of successful vaginal deliveries
- **3 ¼ hours** for nulliparous without epidural to reach the 95% of successful vaginal deliveries
- **4 ¼ hours** for multiparous with epidural to reach the 95% of successful vaginal deliveries
- **1 1/3 hours** for multiparous without epidural to reach the 95% of successful vaginal deliveries
WHAT ARE THE NEONATAL OUTCOMES ASSOCIATED WITH PROLONGED SECOND STAGE OF LABOR?
No differences in neonatal outcomes except for birth trauma *(adjusted odds ratio of 2.08; 95% CI 1.38 -3.15)

Birth trauma was a composite of cephalohematoma, head laceration, clavicular fracture, skull fracture, facial nerve palsy and Erb’s Palsy

( looked at 5 min apgar, umbilical ph <7, meconium aspiration syndrome, sepsis, NICU admission, Birth trauma )
WHAT ARE THE MATERNAL OUTCOMES ASSOCIATED WITH PROLONGED SECOND STAGE OF LABOR?

- Eight times odds of C-section vs patient delivered without prolonged second stage
- 2-3 times odds of operative vaginal delivery
- 2-3 times the risk of 3rd or 4th degree lacerations
- 2-3 times the risk of chorio/PPH/endometritis
G2 P0 at 38 weeks ega presents 6 cm/-1 station dilated in active labor and 1/2 hour later is found to be 8 cm/+1 station/95% effaced

EFW 6.5 lbs, vertex,

Patient requests epidural anesthesia.

What should you have discussed about epidurals during those prenatal visits re: risks/benefits.
Epidural vs Opiates (not vs Nitrous or one on one midwifery care)

Better pain relief (but not maternal satisfaction) with pain relief / Reduced risk of naloxone administration

Reduced risk of acidosis

Increased risk of operative vaginal birth in nullips (1.42 95% 1.28 - 1.57)

Increased risk of motor blockade / maternal hypotension / urinary retention / maternal fever / oxytocin administration / (not addressed rare severe adverse events from epidurals)

Longer second stage of labour (13.66 min CI 6.67 to 20.66)

Increased risk of C-section for fetal distress (RR 1.43 95% 1.03 – 1.97) but not overall risk of C-section (RR 1.10 95% 0.97 - 1.23)
DO YOU RECOMMEND SHE LABOUR DOWN OR NOT? LET'S LOOK AT THE LITERATURE.

- G2 P1 at term with uneventful first stage, Received her epidural 2 hours ago at 8 cm;
- At midnight examined and found to be 0 station/complete/OP EFW 8.5 lbs, vertex,
- ?
**Conclusion:**

- Significant increase in woman’s chance of having a spontaneous vaginal birth (decreased rate of operative vaginal delivery) $RR = 1.08$, $95\% CI: 1.01-1.15$, $p = 0.25$ (No decreased rate of C-section)
- Decrease in instrumented assisted vaginal deliveries
- Decreased pushing time (0.19 hours, $95\% CI: 0.27\text{ to }0.12\text{ hours}$, $p < 0.001$)
Delayed pushing (waiting for urge to push) vs immediate pushing:

**Maternal Outcomes:**
- *increased duration of labor by 54 min*
- no difference in perineal laceration
- **20 min decrease in duration of pushing**
- **increase in SVD** (RR 1.07; 95% 1.03 to 1.11)

**Neonatal Outcomes:**
- No difference in NICU admissions or 5 min Apgar <7
- **increase in low umbilical cord blood PH** (2.24 95% 1.37 to 3.68)
Conclusion: in this large birth cohort, delayed pushing was associated with longer second stage duration and increased odds of cesarean delivery and increased odds of PPH, but not neonatal morbidity.

Critique: This study does not address the clinical question we face. This was a retrospective look at outcomes for nulliparous women who reached 10 cm dilation and compared those who began pushing after 60 minutes with those who began pushing under 30 minutes. Not randomized.

Delayed pushing group had 89% epidural rate and the early pushing group had 79% epidural use. Avg Birthweight in delayed pushing 3.4 kg vs 3.31 in early pushing group....

Who of you encourages or is successful in having your unblocked patients not push for 30 minutes once complete?

What is the difference in patients likelihood of a vaginal delivery if their labor progresses fast enough to avoid an epidural?

MATERNAL AND NEONATAL OUTCOMES WITH EARLY COMPARED WITH DELAYED PUSHING AMONG NULLIPAROUS WOMEN (LYN ET ALL. OBSTETRICS AND GYNECOLOGY VOL.128, NO.5, NOVEMBER 2016)
G2 P1 at term with uneventful first stage, Received her epidural 4 hours ago at 8 cm;
Examined at midnight and found to be 0 station/complete/OP
2 hours later exam notes +2 station/0P/Caput to +3 station
EFW 8.5 lbs, vertex,
Cochrane’s 2010 review noted Insufficient evidence of reduction of operative vaginal delivery 23 % vs 28 % RR.84 95 % CI .61-1.15

Only statistically significant result was an increase in pain relief when epidural was stopped. 22 % vs 6 % 95% CI 1.99 to 6.80

Further studies recommended.
G2 P1 at term with uneventful first stage, Received her epidural 3 hours ago at 8 cm;

Examined at midnight and found to be 0 station/complete/OP

1 hours later exam notes 0 station/0P/ Caput to +3

EFW 8.5 lbs, vertex,
One small pilot trial involving 30 women assessed the feasibility of manual rotation versus routine care (no manual rotation).

Ultrasound used to document position of occiput at start of second stage and to document success of maneuver (successful in 9/15 attempts).

In manual rotation group 13/15 went on to have an operative delivery or C-section vs 12/15 in the sham control group.

No reported cases of prolapse, one case of non reassuring FHR tracing.

**DOES MANUAL ROTATION OF OP OR OT POSITIONS IMPROVE OUTCOMES?**

PHIPPS H, DE VRIES B, HYETT, J, OSBORN DA. PROPHYLACTIC MANUAL ROTATION FOR FETAL MALPOSITION TO REDUCE OPERATIVE DELIVERY. COCHRANE DATABASE OF SYSTEMATIC REVIEWS 2014, ISSUE 12. ART. NO: CD009298 DOI: 10.1002/14651858.CD009298
Back to our first patient.

G2 P0 at term with uneventful first stage and complete/0 station/OA

EW 8.5 lbs, vertex,

no epidural and starts pushing at midnight

She is pushing upright, then on her side, briefly on her back and at 0200 she is found to be +1 station with caput to +2 FHR tracing 140 with good variability periodic variables/early decels.

Patient labors another 3 hours and is found to be +4 station with skin tightly stretched over the scalp.

ANYTHING WE CAN DO TO REDUCE IMPENDING LACERATION?
Warm compresses associated with a significant reduction in 3 and 4\textsuperscript{th} degree tears (RR.48 CI 0.28 - .84) (two studies 1525 women)

Perineal massage vs hands off to reduce 3\textsuperscript{rd} and 4\textsuperscript{th} degree lacerations (RR .52 CI .29 - .94) (two studies 2147 women)

AssheimV, Nisen ABF, Lukasse M, Reinar LM

Perineal techniques during the second stage of labour for reducing perineal trauma

Cochrane Database of Systematic Reviews 2011, Issue 12. Art No. CD006672
DOI:10.1002/14651858.CD006672.pub2
Push upright with no epidural,

You can be patient in the second stage with blocked patients whose FHR tracing remains reassuring - Use the 4332 guidelines as the minimum before considering intervention

Delayed pushing – The jury remains out – Your choice

Turning the epidural down seems like a good idea but not yet shown to help

OP manual versions may not help the way we would hope.

Use warm packs on the perineum! It can’t hurt.

Thanks for participating!