REALLY RURAL SURGERY

EPISODE 15

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To pop or not to pop: AROM

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The 5 questions

The 5 questions

With or without epinephrine?

The 5 questions

1st layer locked or unlocked?

The 5 questions

Cephalad-caudad or lateral traction?

The 5 questions

Vicryl rapide or Chromic?

The 5 questions

Digital dissection or 2 snaps and a scissor?

The sixth question

- Who does AROM?

Background

What do we really want to know?

What did we really want to know?

- In regards to AROM for labour dystocia:
  - Does it shorten the first stage of labour?
  - Does it increase the likelihood of successful vaginal delivery?
  - Does it harm the baby?

Cochrane review

- **Amniotomy for shortening spontaneous labour.** Smyth RM, Alldred SK, Markham C. Cochrane Database Syst Rev. 2013 Jan 31;1:CD006167.
- Split into routine amniotomy and amniotomy for prolonged labours.

Questions (They asked a lot, 28 to be exact)

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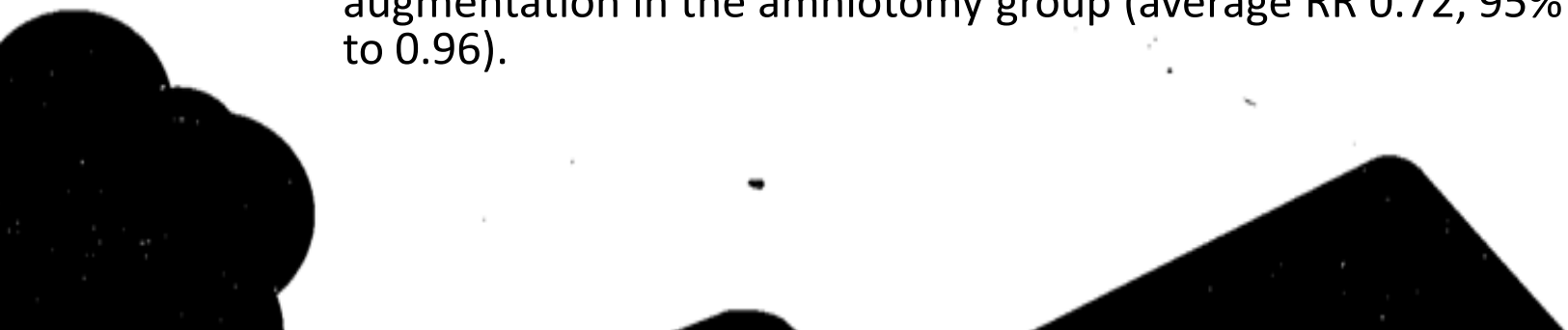
The most common beginning of sentences in the Results section

- There was no statistically significant difference…

Let’s cut it short

- Found very few (and random) things that were statistically significant differences:
  - Routine amniotomy:
    - In the primiparous subgroup, babies born to women who were randomised to the control (no amniotomy) group showed a statistically significant increase in the chance of an Apgar score of less than seven at five minutes (RR 0.42, 95% CI 0.20 to 0.88).
    - Subgroup analysis of primiparous women only showed a statistically significant reduction in the length of the second stage of labour in the amniotomy group (MD -5.43, 95% CI -9.98 to - 0.89).
    - Women in the amniotomy group had a significantly reduced risk of dysfunctional labour (average RR 0.60, 95% CI 0.44 to 0.82)
    - There was a statistically significant reduction in the use of oxytocin augmentation in the amniotomy group (average RR 0.72, 95% CI 0.54 to 0.96).



Let's cut it short

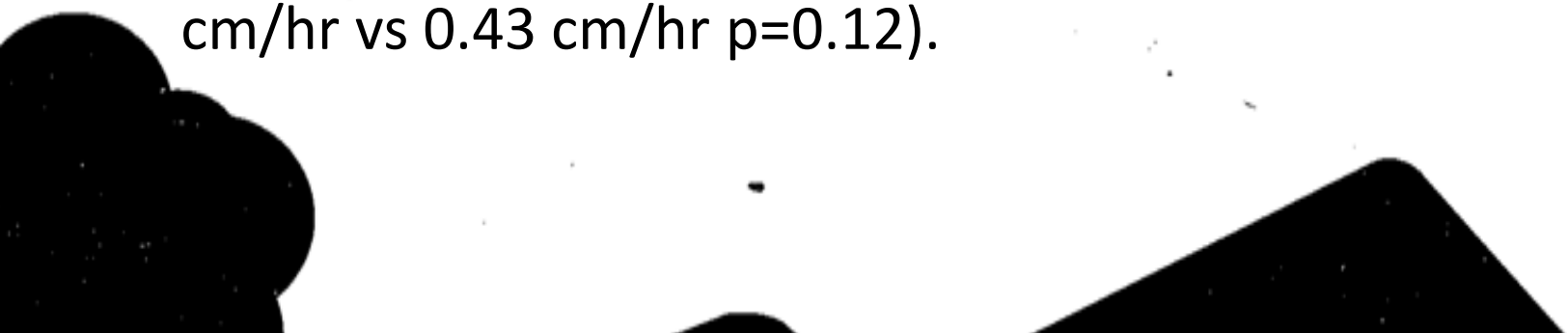
- Found very few (and random) things that were statistically significant differences:
  - Amniotomy for prolonged labor
    - Women in the amniotomy group were more satisfied with their childbirth experience (MD 22.00, 95% CI 2.74 to 41.26).

Can we hang our hat on it?

- Given the lack of significant difference of so many of their questions, it just made us confused, like all meta-analyses do.

So, let's look for a RCT that answers our questions

- Unfortunately, could find only one RCT (Blanch 1998)[1] that the Cochrane group included that asked the question of whether AROM decreases time to delivery in patients who had had a failure to progress in the first stage of labour.
- It only had 20 patients in each arm of the trial, and therefore power was quite low (stopped recruitment half way).
- It did show that oxytocin + AROM did increase cervical dilation rate vs. AROM alone and expectant mgmnt.
- It did not show a statistically significant difference of cervical dilation rate in AROM vs. expectant mgmnt (1.09 cm/hr vs 0.43 cm/hr p=0.12).



So, we had to throw out that question.

- But, an even more interesting question came out of preparing for this presentation:
  - Is routine amniotomy useful?

RCT's after the Cochrane review

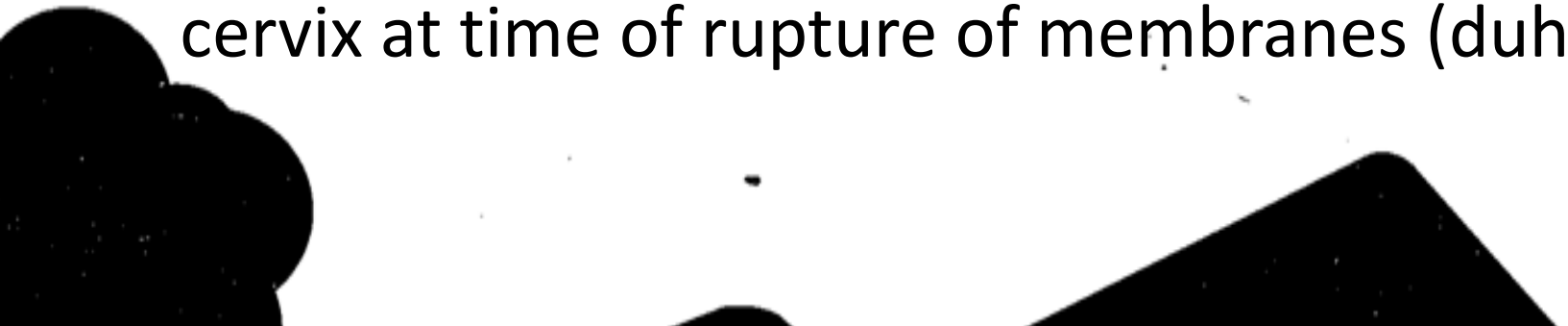
- **The efficacy of early amniotomy in nulliparous labor induction: a randomized controlled trial.** Macones GA, Cahill A, Stamilio DM, Odibo AO. Am J Obstet Gynecol. 2012 ov;207(5):403.e1-5.
- **Effect of early amniotomy on dystocia risk and cesarean delivery in nulliparous women: a randomized clinical trial.** Ghafarzadeh M, Moeininasab S, Namdari M. Arch Gynecol Obstet. 2015 Aug;292(2):321-5.

We chose the 2012 article

- It looked prettier.
- It was more clear as to how the study was done.
- It very much was clear on how the patients were matched in regard to variables that could affect time to delivery and successful vaginal delivery.

Population

- Dual center, unblinded, randomized controlled trial.
- Inclusion criteria: >37 wks, nulliparous, singleton pregnancies requiring induction.
- Exlusion criteria: HIV infection or cervical dilation >4cm at time of admission.
- 585 patients. Matched on most variables, including reason for induction, except dilation of cervix at time of rupture of membranes (duh).



Intervention

- Amniotomy done as early as could be done safely.
- Afterward, induction agents used at physician's discretion.

Control

- Standard induction with amniotomy done at the discretion of the attending physician.
- Induction agents used at discretion of attending physician.

Before we go on, were patients matched in terms of induction agents used?

TABLE 1
Baseline characteristics

Variable	Early amniotomy (n = 292)	Standard therapy (n = 293)	*P* value
Maternal age, y[a]	22.7 ± 5.8	23.3 ± 6.2	.17
African American race, %	72	68	.30
Diabetes mellitus, %	3.9	3.5	.81
Chronic hypertension, %	7.2	5.2	.32
Body mass index, kg/m^2[a]	28 ± 4.2	28 ± 3.9	.90
GBS+, %	29	30	.66
Pitocin, %	93	93	.87
Misoprostol, %	67	69	.70
Cervidil, %	6.8	8.4	.45
Foley bulb, %	27	30	.43
More than 1 agent, %	73	73	.80
Epidural anesthesia, %	92	94	.88
Admission dilation, cm[a]	1.1 ± 1.03	1.1 ± 0.97	.54
Dilation at rupture of membranes, cm	3.2	7.4	.001
Station at rupture of membranes[a]	−1 ± 1.2	−1 ± 1.5	.50
Cervical examinations, n[a]	6.2 ± 3.0	5.9 ± 3.4	.67
Birthweight, g[a]	3323 ± 516	3311 ± 566	.78
Gestational age, wk[a]	39.7 ± 1.4	39.5 ± 1.4	.16

GBS, Group B streptococcus.

[a] Data are given as mean ± SD.

Macones. Early amniotomy in nulliparous labor induction. Am J Obstet Gynecol 2012.

Outcomes

- Primary:
  - Time of delivery from time of initiation of induction.
  - Proportion of women delivered within 24 hours.
- Reported secondary outcomes (they asked more, but only reported on these).
  - Cesarean section
  - Amnioinfusion
  - Chorioamnionitis
  - Cord prolapse
  - Abruption
  - Postpartum hemorrhage.

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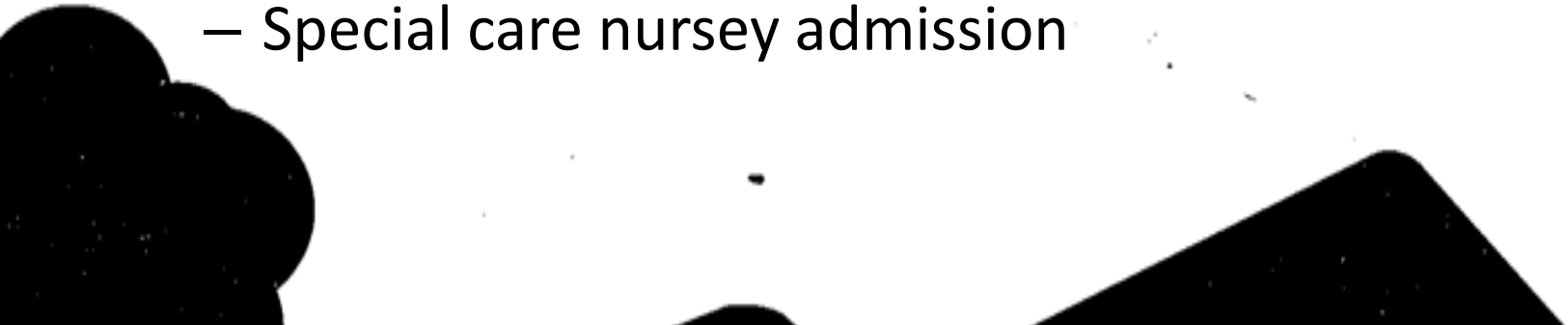
  - 5-minute Apgar scores
  - Suspected neonatal sepsis
  - Special care nursey admission



Results

- Primary:
  - Time of delivery from time of initiation of induction.
    - Routine amniotomy led to an average decrease in time to delivery of 2.3 hours (19 hrs vs 21.3h, P=0.04).
  - Proportion of women delivered within 24 hours.
    - Routine amniotomy led to a RR of 0.72 (CI 0.59-0.89, p=0.002).

Results

- Secondary outcomes (reported)
  - Cesarean section → No SSD
  - Amnioinfusion → No SSD
  - Chorioamnionitis → No SSD
  - Cord prolapse → No SSD
  - Abruption → No SSD
  - Postpartum hemorrhage. → No SSD
  - 5-minute Apgar scores → No SSD
  - Suspected neonatal sepsis → No SSD
  - Special care nursey admission → No SSD

Quality study?

- High quality study type (i.e. double blind randomly controlled multi-center trial)? Not really, but getting close.
- Sufficient number of patients? Yes
- Randomized as much as possible? Yes
- Blinded as much as possible? Not at all (though hard to do).
- Population demographics can be generalized to rural population? Yup, nothing specific to urban.
- Procedure specifically outlined and same in all cases? Not procedure, but timing thereof.
- Perioperative parameters the same for all patients? Yes, very well matched.
- POOs or DOOs? POOs as outcomes, results as DOOs?
- Reasonable amount of follow-up and reasonable time frame for follow-up? Did not specify follow-up period.

So did we learn anything?

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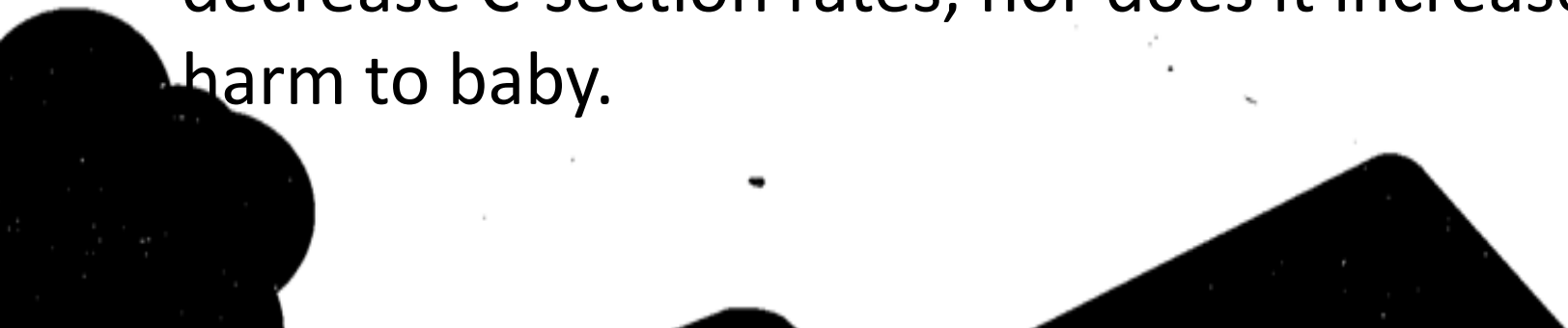
- Routine amniotomy apparently decreases time to delivery, as well as increases the proportion of patients delivered in 24 hours in those patients undergoing routine amniotomy for induction, who are matched in terms of other induction agents, used without increased harm to baby, .
- However, according to this study, it does not decrease C-section rates, nor does it increase harm to baby.



Does this apply to RRS?

So, does it work?

- Depends on the specific question you are asking and the specific study that addresses that question.

The 7th question

- Who is going to do AROM?

Goodnight.

References

1. **Dysfunctional labour: a randomised trial.** Blanch G, Lavender T, Walkinshaw S, Alfirevic Z. Br J Obstet Gynaecol. 1998 Jan;105(1):117-20.