VBAC and MAWS Midwives

Recent Evidence, Data, Outcomes and Clinical Practice Guidelines.

On the Agenda

- Update on recent evidence
  - Australian study
  - German Birth Center Study 2009
  - NIH Consensus Paper EQRH 2010
  - Jastrow 2010 Lower Uterine Segment Thinning
- The data we have versus the data we need
- MAWS Guidelines
  - History and Process
  - Recommendations
- Case Studies (the good, the bad, the ugly)
- Forum
  - Have your say

A new perspective on VBAC: A retrospective cohort study (Rozen et al, 2011)

- n=21,389 women between 2000 and 2005
- Outcomes measured: Uterine rupture, PPH, 3rd/4th degree tears and neonatal morbidity
- Stratified classification:

"A different approach to comparing women undergoing VBAC to an equivalent group of women who have not previously undergone vaginal delivery: …nulliparous women, as well as comparing them to all women presenting with term, singleton and cephalic presentations"

Robson's Classification System

Table 1 Robson's Ten Group Classification System.[26].

Group	Description
1	Nullipara, >37 weeks, single, cephalic presentation, spontaneous labour
2	Nullipara, >37 weeks, single, cephalic presentation, induced labour or caesarean delivery before labour
3	Multipara, NO previous caesarean, >37 weeks, single, cephalic presentation, spontaneous labour
4	Multipara, NO previous caesarean, >37 weeks, single, cephalic presentation, induced labour or caesarean delivery
5	Multipara, previous caesarean, >37 weeks, single, cephalic presentation
6	Nullipara, single breech presentation
7	Multipara, single breech presentation
8	Multiple gestation (with or without previous caesarean)
9	Singleton pregnancy, oblique or transverse lie (excluding breech, with or without previous caesarean)
10	Single cephalic pregnancy, <37 weeks (including previous caesarean)

A new perspective on VBAC: A retrospective cohort study (Rozen et al, 2011)

Findings:

Hemorrhage:

No significant increase in PPH with VBAC compared to nulliparous women in either spontaneous or induced labor

Shoulder dystocia:

No difference in risk of SD between groups following NVD

Uterine rupture: 5 ruptures/dehiscenses. **0.02% of cases – insufficient to achieve statistical significance.**

Fetal outcomes: **No significant differences in fetal outcomes between comparison groups**

Case Study

- Healthy, normal 32 y/o
- Normal BMI
- P1 primary section for FTP
- Returning clients
- Spontaneous labor @ 40w
- Straightforward labor curve
- Transfer at 2hrs second stage for failure to descend
- 3hr push in hospital .
- C/S and normal recovery

Prior C/S – An acceptable risk for vaginal delivery at free-standing midwife-led birth centers? Results of the analysis of VBAC in German birth centers (David et al, 2009)

- Most applicable to our practice setting
- Study conducted 2000-2004 in a German birth center
- Intention to treat analysis
- N=364 women with a history of primary C/S, control group 6448 P2s with no prior C/S

European J. of OB/GYN and Reprod. Biol. 142 (2009) 106-110

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German BC Study

- Parameters analyzed:
  - Age of mother
  - Number of women transferred IP or PP
  - Reason for transfer
  - Time lapsed between admission to hosp and delivery
  - Method of delivery
  - Indications for C/S
  - Uterine ruptures
  - Weight/size of NB
  - APGAR Scores
  - NICU admissions
    - Reasons for transfer
    - Infant and maternal mortality

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German BC Study

- Parameters without significant difference:
  - Maternal Age (median 32-33)
  - Parity
  - Neonatal size and weight
  - **Maternal and neonatal mortality**
  - **NICU transfer (1.7%)**
  - **Maternal transfer PP**
  - **APGARS<7 at 5 and 10 min**
  - Gestation at birth

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German BC Study

- Transfer rate w/ VBAC's 6 times higher than controls
- Most common reasons for Txfr in both groups:
  - Labor arrest in first or second stage
  - High fetal station
  - Abnormal FHT's by CTG and/or IA
- C/S rate among women transferred to hosp: 53% versus 29.0%
- VBAC rate of 73.5%
- No uterine ruptures
- Higher rates of txfer for repair of significant tears for VBAC group (2.5% vs 0.5%)

German BC Study

Conclusions:

- *The attempt at a spontaneous birth even with a previous cesarean is worthwhile and safe*
- *VBAC is possible at a birth center if good cooperation exists with an emergency birth clinic near the birth center, allowing for responsible and timely transfer to this hospital*

ERQH 2010

- Commissioned by the NIH to inform their Consensus Summit.
- 203 Studies included in review.
- Quality of evidence was rated.

ERQH '10 Key Findings

- **Maternal mortality** significantly increased for ERCD versus TOL (13.4 in 100K versus 3.8 in 100K
- Rate of **uterine rupture** for all women with prior C/S is 3 per 1000 (0.3%)
- 6% of UR result in perinatal death
- Statistically significant increased risk of **placenta previa** (rate of 12 per 1000, risk increasing with # of C/S)
- **Perinatal mortality** significantly increased for TOL compared with ERCD (1.3 per 1000/0.5 per 1000)
- Rates of **hysterectomy, hemorrhage and transfusion** did not differ significantly between TOL and ERCD

Sonographic Lower Uterine Segment Thickness and Risk of Uterine Scar Defect: A Systematic Review (Jastrow et al, 2010)

- 12 studies included. n=1834.
- Review found that sonographic LUS thickness is a strong predictor for uterine scar defect in women with prior C/S.
- Measurements performed between 35 and 40wks
- Outcomes measured:
  - Uterine rupture during TOL
  - Uterine scar defect (dehiscence or window)
- Measurements of LUS, myometrial layer, or both

Sonographic Lower Uterine Segment Thickness and Risk of Uterine Scar Defect: A Systematic Review (Jastrow et al, 2010)

- 121 (6.6%) cases of uterine scar defect were reported
- Each study demonstrated a significant association between degree of LUS thinning and uterine scar defect
- Both mean LUS and myometrial layer measurements were approximately 1mm thinner in patients with a uterine scar defect, than in patients without.

Sonographic Lower Uterine Segment Thickness and Risk of Uterine Scar Defect: A Systematic Review (Jastrow et al, 2010)

- When the LUS was thin the OR for uterine rupture was 11.2(95% CI 6.5-19.4)
- When the myometrial thickness was thin the OR for uterine rupture was 5.2 (95% CI 2.5-10.8)
- No ideal cut-off value was established
  - Full Lower Uterine Segment thickness varied from 2.0-3.5mm
  - Myometrial layer thickness varied from 1.4 to 2.0mm
- *Bujold et al (2009) suggested that **2.3mm for full LUS measurement** may be a good cut off for prediction of complete uterine rupture during a TOL.*

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Case Study

- 38y/o, G4 P3004
- BMI = 43.8
- Primary section for twins at term
- 2 prior VBACS (hosp, home)
- Labored @ 41 weeks after taking castor oil
- Rapid labor and NSVD 10lbs 2oz (biggest)
- PPH of 2000cc. EMS called, client refused transport. EMS left
- Client ambulatory 4hrs after birth, recovered well.
- MW declined to attend client as primary MW at next birth which was straightforward 4th VBAC at home 19 months later.

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The Data We Have

- MAWS Data
- OBCOAP
- Data is very limited, but compelling.

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MAWS MANA DATA

Downsides

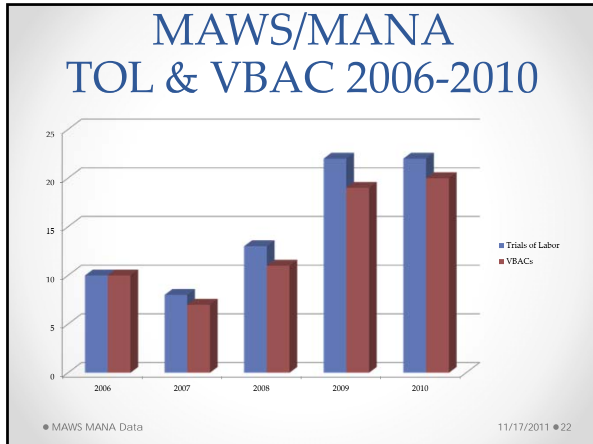
- MAWS MANA VBAC data limited by how few MW's are reporting to MANA.
- Hard to tell how many MW's from the cohort are taking VBAC clients

Upsides

- We have some DATA
- Data is prospective.

MAWS MANA Data Comparison w/WA Vital Statistics

MAWS MANA	WA Vital Statistics
2006-2010	2006-2009
3832 Births (Home and BC)	8113 Births (Home and BC)
1710 Homebirths (44.6%)	4379 Homebirths (54%)
75 Moms with previous C/S (4.3%)	Unknown VBAC/TOL numbers
67% VBACs (1.7% of all births)	



Case Study

- 24 y/o, P1
- Healthy, normal BMI
- Primary section for fetal distress after home-to-hosp txfr @42 wks for FTP in first stage
- Concurrent care with local hospital who offers VBAC
- Spontaneous labor at 40.4
- Rapid first stage (4hrs), rapid second stage (30min)
- NSVD, vigorous 8lb 3oz baby
- Swift PPH (~750cc's).

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OB COAP

- OB Clinical Outcomes Assessment Project 4/4/2010-12/29/2010
- Retrospective
- 41 Midwife Practices Reporting

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OB COAP and VBAC

- VBAC outcomes
- 6 MW's/Practices reporting VBACs
- 29 TOLAC's in the LM dataset
- 28 successful VBACs at home
  - No uterine ruptures
  - One antepartum transfer for RCS
  - One postpartum admission for Endometritis - Resolved
  - Two babies with 5 min APGAR's <7 (no NB admissions)
  - 63% of women were P1's.
- **96% VBAC rate!**

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MAWS VBAC GUIDELINES

- First version approved by MAWS board in 2008, accompanied by a position statement.
- This version is updated and has been modestly updated using new evidence.
- Not all midwives in WA chose to attend VBACs at home.
- For many MAWS midwives, the biggest contribution to the VBAC issue we can make is to continue to prevent primary sections.

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Guidelines

" When evaluating a clients suitability for a VBAC in an OOH setting, the midwife and client should examine closely those factors which may favorably impact the likelihood of success and minimize the risk of adverse perinatal outcomes."

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Guidelines

Predictors of VBAC Success	Factors associated with decreased likelihood of VBAC success
Prior vaginal birth	More than one prior C/S
Spontaneous labor	Maternal Age >40
One or more prior VBACs	Maternal Obesity
Non-recurrent reasons for prior C/S	Fetal macrosomia
	Pregnancy beyond 40 wks gestation

MAWS Guidelines

- VBAC at home not suitable for:
  - Multiples
  - Breech
  - Any other scar type than 1 LTCS
  - More than one cesarean section
  - Women whose scar was closed with a single, rather than double layer of suture.

Recommendations

- Shared decision making process
- Written statement of intent from client
- Clear documentation of plan for on-going risk assessment
- Obtain surgical records
- Third trimester ultrasound
- Nearest hospital with emerg. C/S capability <20mins
- Close monitoring of maternal and fetal vital signs in labor
- Midwife to accompany client and provide all records in the event of a transfer

Case Study

- 31y/o G3 P2
- Small, non- obese, healthy
- Primary CS for OP/Failure to progress
- Successful VBAC w/ CNM in hosp. 8lbs
- Transferred into care late w/3rd babe seeking MW care and OOH birth
- 42wks – spontaneous labor
- Rapid first stage, Began pushing 1hr after MW arrived
- *No decent in 2nd stage at 1hr*
- Decision to txfr at 1hr d/t *lack of decent, rising baseline and abnormal pain*

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Cont.

- In hosp. by 2hrs into 2nd stage
- 20 min drive to hosp.
- Mom on H&K in car (couldn't get FHT's)
- FHT's very ominous on admit. Tachy, then bradycardic.
- *Mom in acute pain*
- 50 mins. from admit to baby out
- Fetus extruded into the abdominal cavity
- Baby delivered w/ APGAR of 0
- Resuscitation efforts failed.

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Forum

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