Three Unique Cases of TOLAC: How do you respond??

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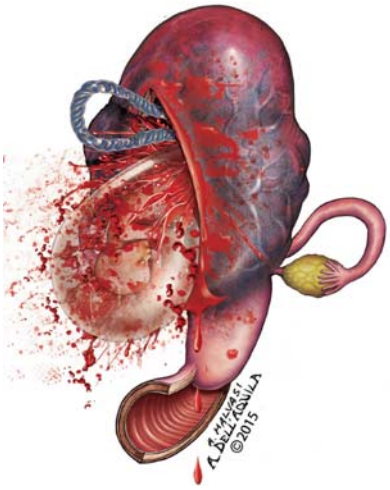
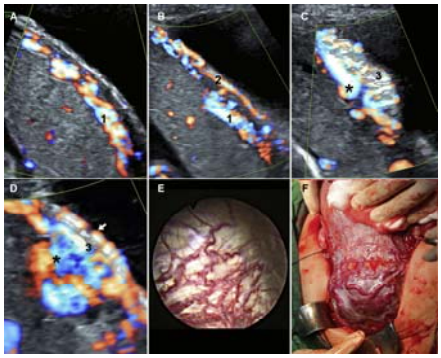
Objectives

1. Review 3 clinical scenarios involving TOLAC, evidence and guidelines
2. Discuss risks vs benefits in unique TOLAC scenarios
3. Explore factors that may impact patient decision making and counselling

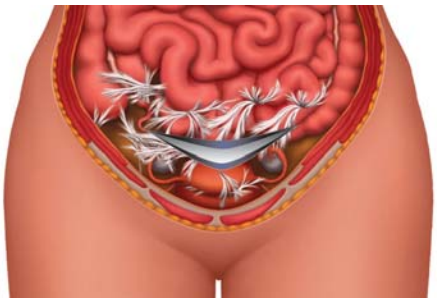
I have no conflicts of interest to declare

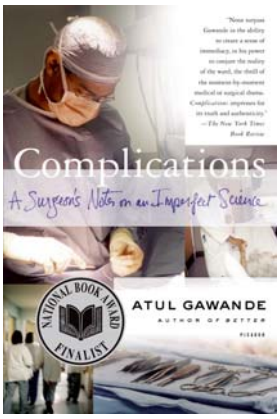


What is it that we are really worried about??



Shih JC, Kang J, Tsai SJ, et al. Am J Obstet Gynecol 2021;225:292.e1-17


https://clearpassage.com/blog/how-to-tell-if-you-suffer-from-c-section-adhesions/



What else should we be worried about??

A Balance of Risks

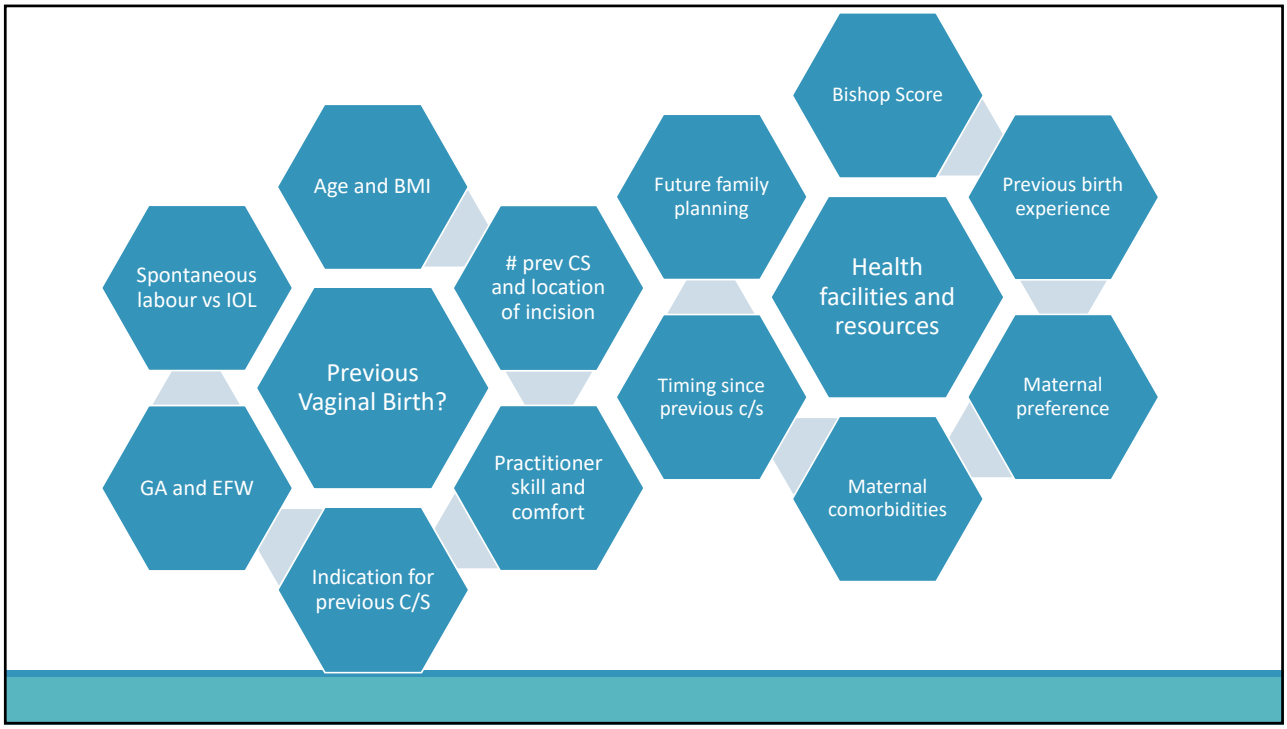
TOLAC

- Uterine rupture
  - Maternal consequences
  - Fetal consequences
- Failed TOLAC/Emergency cesarean section
- Limited ability to plan ahead

ERCS

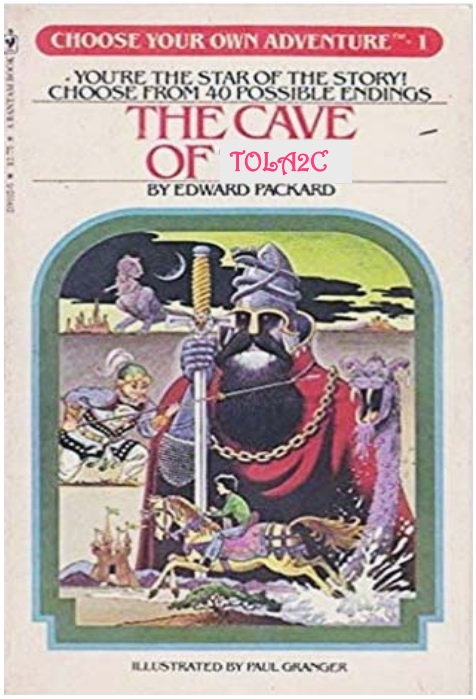
- Known surgical risks
  - Maternal consequences
  - Fetal consequences
- Increased risk of VTE
- Increased risk of future placenta previa
- Increased risk of future invasive placentation

"There is no risk-free scenario." – Me, every time I counsel a patient for TOLAC



TOLAC: Choose your own adventure!!

TOLAC after 2 Previous Cesarean Sections



TOLA2C

- Baseline risk of uterine rupture with 1 previous cesarean section = 0.47%
  - Risk in patients undergoing ERCS = 0.026%
- Risk of uterine rupture with 2 previous cesarean sections = 0.6-3.7%
- Maternal risks variable
  - Risk of blood transfusion and hysterectomy rates either similar or HIGHER in patients attempting TOLAC with 2 previous cesarean sections compared to one.
- Neonatal outcomes appear to be similar in both groups.
- Limited data on >2 previous c/s

TOLA2C - Guidelines

SOGC – "Women with 2 prior Caesarean sections appear to have similar vaginal birth after Caesarean rates as those with 1 prior Caesarean section. Women should be informed of a higher risk of uterine rupture in trial of labour after Caesarean with more than 1 Caesarean section." (II-2B)

ACOG – "Given the overall data, it is reasonable to consider women with two previous low-transverse cesarean deliveries to be candidates for TOLAC and to counsel them based on the combination of other factors that affect their probability of achieving a successful VBAC." (Level B)

RCOG – "Women who have had two or more prior lower segment caesarean deliveries may be offered VBAC after counselling by a senior obstetrician. This should include the risk of uterine rupture and maternal morbidity, and the individual likelihood of successful VBAC (e.g. given a history of prior vaginal delivery). Labour should be conducted in a centre with suitable expertise and recourse to immediate surgical delivery."

TOLA2C – Patient 1

36yo G3P2 with 2 previous c/s at term

- G1 – 2017, C/S for breech presentation
- G2 – 2020, C/S for breech presentation
- Both lower segment incisions, both 2 layer closures
- >18 months since last C/S
- Requesting TOLA2C

TOLA2C – Patient 2

36yo G3P2 with 2 previous c/s at term

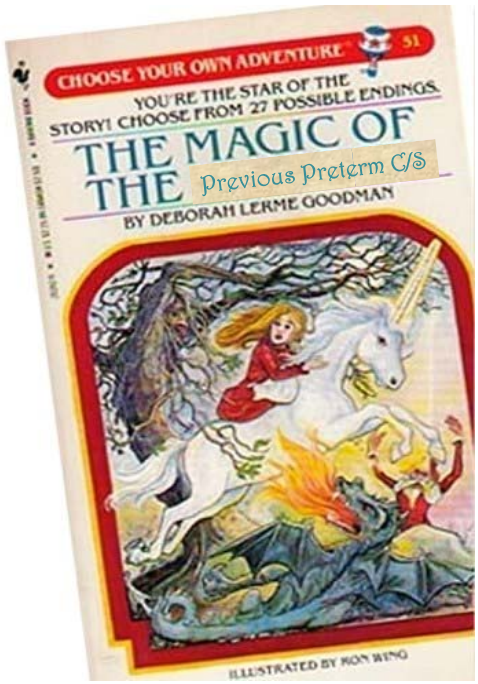
- G1 – 2017, C/S in home country due to breech presentation
  - No documentation of uterine incision or closure available, pt has Pfannensteil skin incision
- G2 – 2020, repeat C/S in labour
  - Presented in active labour at 8cm dilated to small community hospital, requested TOLAC but told they did not have resources to support TOLAC
  - Lower segment incision, 2 layer closure
- >18 months since last C/S
- Requesting TOLA2C

TOLA2C - How would you respond?

After thorough counselling of risks vs benefits…

A. I would offer TOLA2C to both Pt 1 and 2
B. I would offer TOLA2C to Pt 1 but not Pt 2
C. I would offer TOLA2C to Pt 2 but not Pt 1
D. I support TOLA2C in the right patient but can't offer it d/t the local policies in my hospital
E. I would not offer TOLA2C to either patient
F. Undecided

Patient with a Previous Preterm C/S



Previous Preterm C/S - It's all about the incision

- Classical incision risk of uterine rupture = 4-9%
  - TOLAC CONTRAINDICATED
- Although an incision might not be classical, there is a higher chance that an incision in the poorly developed lower portion of the preterm uterus might extend upwards or be at higher risk of rupture
- Rochelson et al 2005 – higher rate of uterine rupture in patients with a previous preterm cesarean section
- Kwee et al 2007 – no difference in uterine rupture or VBAC rates in patients with a previous preterm cesarean section compared to a previous term c/s
- Mantel et al 2020 – population based cohort study of >66,000 patients showed no difference in rate of uterine rupture in patients with a previous preterm cesarean section compared to those with a previous term cesarean

Preterm TOLAC

Durnwald et al 2006 – large prospective observational study of patients undergoing a PRETERM TOLAC

- Likelihood of VBAC success is comparable to term and risk of complications including uterine rupture is lower in preterm TOLAC

- Lower risk of rupture possibly d/t the thickness of the lower uterine segment preterm

Previous Preterm C/S - Guidelines

SOGC – "Women with a classical Caesarean section or T-incision should not have a trial of labour after Caesarean" (II-2A).

Comment "Compared with women with prior low transverse Caesarean delivery, women with prior low vertical Caesarean delivery or with an unknown scar are not at a significantly increased risk of uterine dehiscence or rupture." but no specific recommendations regarding this group made.

ACOG – "Women with one previous cesarean delivery with an unknown uterine scar type may be candidates for TOLAC, unless there is a high clinical suspicion of a previous classical uterine incision such as cesarean delivery performed at an extremely preterm gestation age."

RCOG – "Based on limited observational data, there is insufficient evidence to support the safety of VBAC in women with previous inverted T or J incisions, low vertical uterine incisions or significant inadvertent uterine extension at the time of primary caesarean; hence caution should be exercised in these women and decisions should be made by a senior obstetrician on a case-by-case basis. VBAC is contraindicated in women with previous classical caesearean delivery due to the high risk of uterine rupture."

Previous Preterm C/S – Patient 1

36yo G2P1 with previous c/s

- G1 – 2020, C/S at 25 weeks d/t breech presentation, PPROM and chorio
  - Incision documented as "horizontal", does not specifically note that it is "classical"
- G2 – 2022 (current) – Uncomplicated pregnancy, nil acute throughout
- Requesting TOLAC at term

Previous Preterm C/S – Patient 2

36yo G2P1 with previous c/s

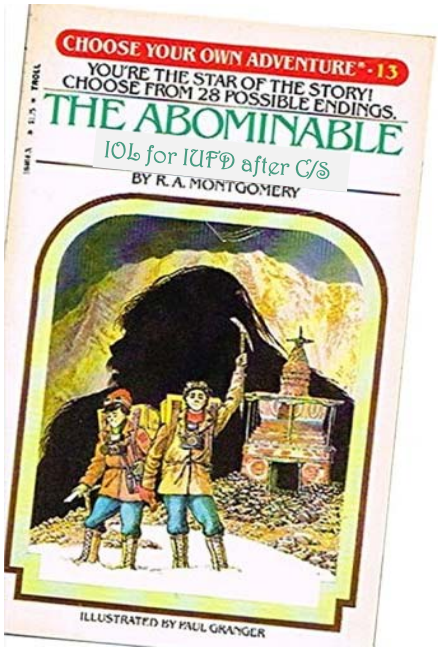
- G1 – 2020, C/S at 25 weeks d/t breech presentation, PPROM and chorio
  - Incision documented as "horizontal", does not specifically note that it is "classical"
- G2 – 2022 (current) – Uncomplicated pregnancy until presents in active labour at 25 weeks
- Requesting TOLAC at preterm GA

Preterm C/S - How would you respond?

After thorough counselling of risks vs benefits…

A. I would offer TOLAC to both Pt 1 and 2
B. I would offer TOLAC to Pt 1 (term) but not Pt 2 (preterm)
C. I would offer TOLAC to Pt 2 (preterm) but not Pt 1 (term)
D. I support TOLAC in the right patient but can't offer it d/t the local policies in my hospital
E. I would not offer TOLAC to either patient
F. Undecided

IOL for intrauterine fetal demise after previous c/s



IOL for IUFD – A Case for Mife and Miso

- Misoprostol has been well studied in second trimester IOLs for TOP and IUFD
  - A systematic review in 2009 (Goyal) showed a low rate of uterine rupture in pts induced with misoprostol with a previous cesarean section (16 studies total)

- Mifepristone – competitively blocks progesterone receptors in the endometrium and sensitizes prostaglandin receptors in the uterus and cervix to respond more effectively to misoprostol (Vlad et al 2022)

- Mifepristone used in advance of misoprostol acts to decrease time to delivery, decrease the number of doses of misoprostol required and decrease adverse effects (Vlad et al 2022)

- Alternative is foley catheter with oxytocin

IOL for IUFD - Guidelines

SOGC – No comment on IOL for IUFD. IOL in general is not contraindicated in TOLAC
- IOL is associated with increased risk of uterine rupture
- Misoprostol is associated with rupture rates of up to 18% - not recommended in viable pregnancies

ACOG – in cases of IUFD>28 weeks, ripening with a Foley catheter is reasonable and TOLAC should be encouraged and explored even in patients with higher risks of scar complications (ie. Classical incision)

RCOG – "Women with an antepartum stillbirth and a previous caesarean delivery undergo labour with a high VBAC success rate (87%). The care of these women should be in line with national guidelines. However, because a proportion of cases required induction and/or augmentation, one study reported a uterine rupture rate of 2.4%."

IOL for IUFD with previous C/S – Patient 1

36yo G2P1 with previous c/s

- G1 – 2020, post-dates IOL, C/S for arrest of dilatation at 6 cm
  - BW 3810g
- G2 – 2022 (current) – Uncomplicated pregnancy until unexplained IUFD at 37 weeks
  - EFW 3900g, vertex presentation
- Cervix unripe
- Requesting IOL as soon as possible

IOL for IUFD with previous C/S – Patient 2

36yo G2P1 with previous c/s

- G1 – 2020, C/S at 27 weeks d/t preterm labour and abnormal FHR tracing
  - Horizontal incision in “upper portion of lower segment” as per OR note
- G2 – 2022 (current) – Uncomplicated pregnancy until unexplained IUFD at 35 weeks
  - Floating vertex presentation
- Cervix unripe
- Requesting IOL as soon as possible

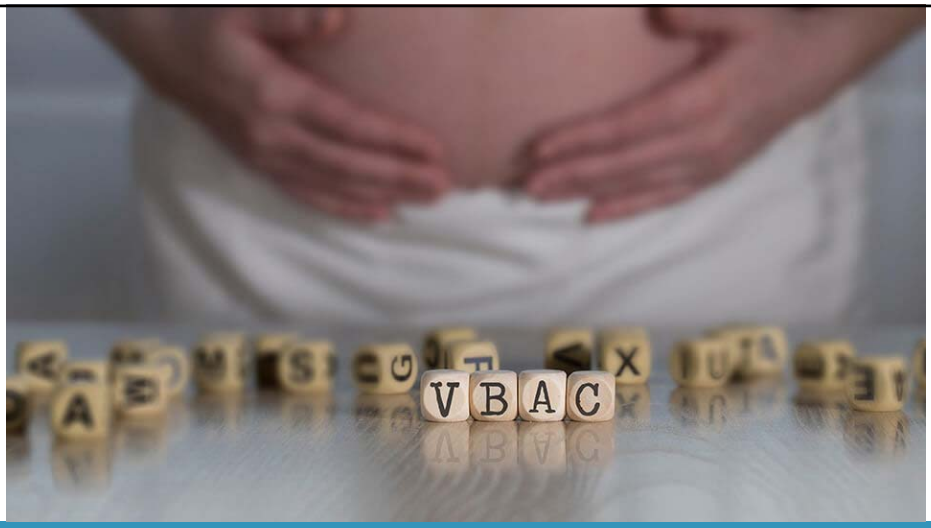
IOL for IUFD - How would you respond?

After thorough counselling of risks vs benefits…

A. I would offer TOLAC to both Pt 1 and 2
B. I would offer TOLAC to Pt 1 (term c/s) but not Pt 2 (preterm c/s)
C. I would offer TOLAC to Pt 2 (preterm c/s) but not Pt 1 (term c/s)
D. I support TOLAC in the right patient but can't offer it d/t the local policies in my hospital
E. I would not offer TOLAC to either patient
F. Undecided

In summary:

- It is reasonable to offer TOLA2C to patients with factors that favour vaginal birth
- In large population cohort there is no difference in the rate of uterine rupture in patients with a preterm cesarean section compared to those with a term cesarean
- The risk of uterine rupture is low in patients labouring preterm with a previous term c/s
- Misoprostol IOL (with mifepristone) is a reasonable option for IOL in patients with an IUFD
- Each case requires thorough individualized counselling based on patient history, personal factors that contribute to success vs failure and the patient's personal preferences and experiences



Thank you!

Olsthoorn et al 2021

vs

Table 2. Neonatal outcomes for uterine rupture versus invasive placentation

Neonatal outcome	No. (%) of patients: Uterine ruptures, 1988–2019; n = 8	Invasive placentas, 2015–2019; n = 67	*P* value
Stillbirth	0	1 (1.5)	1.000
Neonatal death	1 (12.5)	1 (1.5)	0.206
Hypoxic-ischemic encephalopathy	1 (12.5)	0 (0)	0.110
NICU admission	1 (12.5)	29 (43.9)[a]	0.132
Respiratory morbidity	0 (0)	28 (42.4)[a]	0.021
5-min Apgar score <7	1 (12.5)	6 (9.2)[b]	0.573
Any neonatal complication	1 (12.5)	30 (44.8)	0.130

Table 3. Maternal outcomes for uterine rupture versus invasive placentation

Maternal outcome	No. (%) of patients[a]: Uterine ruptures, 1988–2019; n = 8	Invasive placentas, 2015–2019; n = 67	*P* value
Infectious morbidity	1 (12.5)	8 (11.9)	1.000
Surgical injury	2 (25.0)	8 (11.9)	0.288
Blood transfusion	1 (25.0)	26 (38.8)	0.245
Hysterectomy	0	60 (89.6)	<0.001
Maternal death	0	0	—
Maternal ICU stay	0	4 (6.0)	1.00
Other complication	1 (1)	17 (25.4)	0.671
Any complication	4 (50)	61 (91.0)	0.009
Average length of hospital stay, d	3.5	7.6	0.008

Invasive placentation compared to uterine rupture demonstrated:

- Higher rates of respiratory morbidity
- Higher rates of hysterectomy
- Higher rates of any maternal complication
- Longer hospital stay

Olsthoorn et al J Obstet Gynaecol Can 2021;43(3):306–3