

Midtrimester Dilation and Evacuation (D&E) Versus Prostaglandin induction: A Comparison of Composite Outcomes (Poster)

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Midtrimester dilation and evacuation (D&E) versus prostaglandin induction: A comparison of composite outcomes

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Abstract:

Objective:

To determine the optimal procedure for midtrimester uterine evacuation.

Study Design:

We performed a retrospective cohort study of all women undergoing a planned midtrimester (13 0/7 weeks to 23 6/7 weeks) uterine evacuation procedure at our institution from 1/2005 - 6/2010. Women undergoing D&E by an experienced provider under continuous ultrasound guidance were compared with those undergoing a prostaglandin induction. Women in labor or with cervical insufficiency were excluded. Medical records were reviewed for maternal demographics, comorbidities, procedure indications and complications. The primary outcome was a composite complication rate, defined as any one of the following events: infection, transfusion, need for additional surgery, unexpected admission or readmission to the hospital or uterine/cervical injury. Student t test, chi square, Mann U Whitney, and Fisher's exact test were used as indicated.

Results:

221 women were identified: 94 D&E and 127 induction. Indications for uterine evacuation included termination for fetal abnormalities (58%), fetal demise (31%), and other (11%). Women undergoing D&E were older (32.8±7.0 v. 29.0±6.2 yrs, p<0.001), had an earlier gestational age (17.4±3.0 v. 19.7±2.3 wks, p<0.001), and were more likely to have cervical ripening prior to the procedure (86% v. 30%, p<0.001). There was no difference in parity, insurance class, BMI, and rate of previous uterine surgery. The composite complication rate was higher in the induction group (15% v. 28%, p=0.03), although serious complications were rare in both groups (7% v. 3%, p=0.15). Median length of stay was significantly shorter in the D&E group (5.7 hrs, range 2.6 - 241.7 hrs vs. 28.4 hrs, range 11.0 - 173.0 hrs, p<0.001).

Conclusion:

Our data suggest that midtrimester D&E is safer and more cost effective than prostaglandin induction. While there are many factors that influence provider and patient preference, from a systems perspective, D&E may be preferable to prostaglandin induction for midtrimester uterine evacuation.

Methods:

- Retrospective cohort study
- Inclusion criteria: all patients having a planned midtrimester (13 0/7 weeks - 23 6/7 weeks) uterine evacuation at Lehigh Valley Health Network via either ultrasound-guided D&E or prostaglandin induction of labor from 1/2005 - 6/2010
- Exclusion criteria: labor, chorioamnionitis, cervical insufficiency, advanced dilation, first or third trimester pregnancy
- Patients were identified by both ICD 9 and diagnosis codes. Data was collected by review of medical records.
- Composite complication rate:
 - Cervical, uterine, or intraabdominal injury
 - Fever
 - Hemorrhage (EBL>500)
 - Transfusion
 - Need for additional surgery (cervical repair, uterine curettage, hysterectomy, laparotomy)
 - Need for additional antibiotics
 - Unexpected admission or readmission
 - Maternal death
- Serious complications were defined as transfusion, uterine injury (cervical laceration, perforation), readmission and maternal death

Table 1. Baseline Maternal Characteristics

	D&E (n=94)	Induction (n=127)	P-value
Maternal age (years)	32.8 ± 7.0	29.0 ± 6.2	<0.001
Ethnicity			
Caucasian	80%	73%	0.25
Hispanic	11%	21%	
African American	1%	4%	
Other	9%	2%	
Private Insurance	68%	54%	0.03
Multiparous	59%	57%	0.79
BMI (kg/m²)	27.7±6.7	28.8±6.7	0.19
GA at procedure (weeks)	17.4±3.0	19.7±2.3	<0.001
Previous uterine surgery	15%	14%	0.90
Previous LEEP/cone	6%	9%	0.52
Cervical ripening prior to procedure	86%	30%	<0.001

Data in mean ± SD or %. D&E; dilation and evacuation. BMI; body mass index. GA; gestational age. LEEP; loop electrosurgical excision procedure.

Table 3. Procedure Outcome and Complications

	D&E (n=94)	Induction (n=127)	P-value
Composite Complication Rate*	14 (15%)	35 (28%)	0.03
Serious Complication Rate**	7 (7%)	4 (3%)	0.15
EBL>500	13 (14%)	8 (6%)	0.06
Transfusion	1 (1%)	2 (2%)	0.75
Chorioamnionitis	4 (4%)	10 (8%)	0.28
Additional surgery required			
Dilation and curettage	2 (2%)	28 (22%)	<0.001
Repair of cervical laceration	5 (5%)	0 (0%)	0.01
Repair of uterine perforation	1 (1%)	0 (0%)	0.25
Readmission	2 (2%)	2 (2%)	0.76
Length of Stay (median hours)	5.7 (2.6-241.7)	28.4 (11.0-173.0)	<0.001

Data is in n (%) or median (range), as indicated. EBL, estimated blood loss.
* Composite Complication Rate - hemorrhage (EBL>500), transfusion, chorioamnionitis, need for additional surgery, unexpected admission or readmission.
** Serious Complication rate - transfusion, repair of uterine injury, readmission.

Table 2. Primary Indication for Uterine Evacuation

	D&E (n=94)	Induction (n=127)	P-value
Fetal Demise	23%	37%	0.03
Chromosomal or Genetic Abnormality	46%	11%	<0.001
Structural Abnormality	27%	44%	0.13
Maternal Medical Condition	3%	1%	0.19
Other*	1%	15%	<0.001

Data in %. *PPROM (preterm premature rupture of membranes), oligohydramnios, growth restriction, or viral infection.

Conclusions:

- Although both induction and D&E are safe methods for midtrimester uterine evacuation, D&E is associated with a lower composite complication rate, primarily due to a high rate of unplanned dilation and evacuation in the induction group.
- D&E may be more cost effective than prostaglandin induction of labor for midtrimester uterine evacuation due to significantly shorter length of stay.