Dilation and Evacuation in the setting of fetal demise

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Disclosures

- None
Objectives

- Detail indications for and alternatives to D&E
- Describe the procedure
- Review methods for reducing risks of the procedure
- Review some available medical evidence for D&E compared with induction
- Discuss the psychological aspects of fetal demise and D&E
Safety First

- Know the options: expectant, medical, and surgical management
- Know the procedure: only perform if you are proficient in the procedure or have a proctor
- Know the equipment: do not start the procedure until you are sure the suction equipment is correctly connected and functioning, and you have all the proper instruments
- Know the patient: consider possible complications prior to the procedure (fetal anomalies, inadequate cervical dilation, previous uterine surgery, risks for hemorrhage)
Considerations

- **Preoperative**
  - Underlying cause of fetal demise or need for procedure (chorio, molar pregnancy, blood clotting disorder)
  - Previous surgeries (consider risk for accreta or perforation)
  - Current medical condition (CBC, vital signs, physical exam)
  - Decide on cervical dilation technique
  - Consent for blood products (or be aware of objections)
  - Best location for procedure (surgery center vs hospital)
  - Experienced assistance
  - Communicate with anesthesia any special concerns prior to the procedure
Intraoperative
- If a new procedure, communicate with a proctor and ensure appropriate instruments and equipment are available
- Are uterine tamponades and uterotronics available?
- Are blood products available?
Considerations

- **Postoperative**
  - Due to high incidence of PP depression after demise or other reasons for the procedure consider counseling appointment before and a week after the procedure
  - If patient has no desire for immediate pregnancy or future fertility, discuss options
  - f/u weekly to monitor for complications (physical or psychological) for at least 2-3 weeks
Alternatives

- **Expectant management**
  - Appropriate as long as no evidence of infection, and no hemorrhage
  - Discuss daily temperature monitoring and signs and symptoms of infection
  - Follow weekly in the office until spontaneous resolution or until the patient no longer desires expectant management
Alternatives

- Medical management
  - Typically done in the hospital depending on gestational age
  - Reasonable expectations—may take days depending on cervical exam and parity
  - Always possible she will need subsequent surgical management (8% of medical inductions in the 2\textsuperscript{nd} trimester result in retained products, compared with 1% of D&E)
D&E-Risks

- Infection
- Bleeding
- Perforation
- Retained products leading to second surgery (less likely if ultrasound guidance is utilized)
Safety

- Provider
  - Adequate experience
  - Experienced assistance (ultrasonographer or another physician)
Safety

• Preparation
  ○ Be aware of patient factors that increase risks (diabetes→infection; molar pregnancy→bleeding)
  ○ Preoperative hemoglobin and type and screen, preparations for transfusion (0.1-0.6% of D&E result in hemorrhage)
  ○ Preoperative ultrasound evaluation for placentation and fetal size
  ○ Consider giving TXA just prior to the procedure and have uterotonics available
  ○ Give antibiotics (doxycycline 100mg 1 hour PO before 200mg following, or metronidazole, or other broad-spectrum coverage)
Instruments

- Weighted speculum
- Ring and single tooth tenaculum
- Dilators
- Sopher clamp - instrument about thirteen inches long, jaws about 2 1/2 inches long and about 3/4 an inch wide with rows of ridges or teeth
- Curettes, varying sizes
- Sponges
OBJECTIVE: To increase access to early second-trimester surgical abortion by determining noninferiority of same-day synthetic osmotic dilators compared with overnight Laminaria for cervical preparation before early second-trimester dilation and evacuation.

METHODS: We enrolled women between 14 and 18 weeks of gestation and randomized them to same-day synthetic osmotic dilators or overnight Laminaria. Study participants and clinicians were blinded to group assignment. The primary outcome was procedure duration. The trial was powered to assess noninferiority of synthetic osmotic dilators to exclude a mean difference of 5 minutes or longer.

RESULTS: We enrolled 72 patients: 36 were randomized to same-day synthetic osmotic dilators and 36 to overnight Laminaria. Mean procedure duration was 8.1 and 5.9 minutes, respectively, with a mean difference of 2.1 minutes (97.5% confidence interval −0.3 to 4.5). Same-day synthetic osmotic dilators resulted in less initial cervical dilation than overnight Laminaria (mean circumference 48 compared with 60 mm Pratt, \( P < .001 \)) and required more mechanical dilation (69% compared with 27%, \( P = .001 \)). There was no difference in complications, all of which were minor, or in the median procedural difficulty score rated by physicians. Most patients in both groups would choose a same-day procedure if necessary in the future.

CONCLUSION: Despite less initial cervical dilation and a greater need for mechanical dilation, same-day synthetic osmotic dilators are not inferior to overnight Laminaria with respect to procedure duration. Same-day osmotic dilation is preferred by patients and may be a reasonable alternative to overnight Laminaria for cervical preparation before early second-trimester dilation and evacuation.


LEVEL OF EVIDENCE: I
Procedure

- Remove laminaria or other cervical ripening device if needed (preferably placed 24 hours prior to the procedure)
- Pass dilators to ensure complete dilation through internal cervical os
- Under ultrasound guidance:
  - Insert large suction curette (typically a 14-16 french) and aspirate amniotic fluid
  - Utilize Sopher clamp to remove fetal parts, typically the calvarium is last
  - Perform sharp curettage followed by suction to ensure placenta is extracted
- Identify all fetal parts to ensure complete evacuation
Obstetrics & Gynecology: September 1996
Articles: PDF Only

Abortion at 18-22 Weeks by Laminaria Dilation and Evacuation
SCHNEIDER, D. MD; HALPERIN, R. MD; LANGER, R. MD; CASPI, E. MD; BUKOVSKY, I. MD

Abstract
Objective: To evaluate the complications of late second-trimester abortions (18-22 weeks) by laminaria dilation and evacuation, and the obstetric outcome of subsequent pregnancies.

Methods: Dilation of the cervix was achieved by repeated laminaria tent replacement. Evacuation was carried out in the outpatient clinic using general anesthesia. After the first menstrual period, all patients were invited for examination and thereafter were asked to report the outcome of subsequent pregnancies.

Results: One hundred seventy-one late second-trimester abortions were performed. Cervical dilation was satisfactory in 158 women (92%). Operative sonography was required in nine (5%) women. One had uterine atony. Follow-up from 150 (88%) women indicated no infection, but one woman required repeat curettage for retained products of conception. There was no indication of cervical injury on cervical internal os measurements remote from abortion. Of the 50 patients who conceived and elected to continue the subsequent pregnancies, two had premature deliveries unrelated to cervical incompetence, and all others reached term.

Conclusion: Late second-trimester termination by laminaria dilation and evacuation is safe and probably not associated with future adverse pregnancy outcome.

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A case for ultrasound guidance

- Significantly reduces the risk of perforation
- Reduces the risk of retained products
- Potentially reduced operative times
- Improved educational opportunity
Obstetrics & Gynecology:

March 1990

Original Article: PDF Only

Uterine Perforation During Second-Trimester Abortion by Cervical Dilation and Instrumental Extraction: A Review of 15 Cases

DARNEY, PHILIP D. MD, MSc; ATKINSON, ELIZABETH BS; HIRABAYASHI, KIMI MD

Abstract

Review of the records of 15 women who had uterine perforations at the time of second-trimester abortion by dilation and evacuation showed that unexpected pain (but not excessive bleeding) was the most prominent sign. All patients required laparotomy, but in no case was laparotomy necessary as an emergency procedure. Laparoscopy was not helpful. Two-thirds had bowel injuries and two required hysterectomy. Errors in estimating gestational duration, inadequate cervical dilation, and failure to use sonography characterized these complicated cases.
Placenta Accreta Encountered During Dilation and Evacuation in the Second Trimester

RASHBAUM, WILLIAM K. MD; GATES, E. JASON MD; JONES, JOAN MD; GOLDMAN, BENJAMIN MD; MORRIS, ALLAN MD; LYMAN, WILLIAM D. PhD

Abstract

Objective: To assess the frequency of placenta accreta encountered during dilation and evacuation (D&E) in the second trimester.

Methods: Among 16,827 second-trimester D&E procedures performed at our hospitals and clinics, seven cases of placenta accreta, either suspected clinically or proven histologically, were encountered. These cases were analyzed for history of prior cesarean delivery, placenta localization, and histology of hysterectomy specimens.

Results: Six of the seven cases suspected clinically were confirmed histologically. All placenta accreta patients had at least one cesarean delivery (mean 1.7), and five had a preoperative sonogram demonstrating some form of placenta previa. The prevalence of clinical placenta accreta encountered during D&Es in the second trimester was 0.04%, the same as that reported for placenta accreta diagnosed clinically in the third trimester.

Conclusion: Placenta can be a potential complicating factor in the patient undergoing D&E in the second trimester.

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Abstract

OBJECTIVE: To compare the safety and effectiveness of dilation and evacuation (D&E) and labor-induction abortion performed for fetal anomalies or fetal death in the second trimester.

METHODS: We performed a retrospective cohort study of second-trimester abortions performed for fetal indications. We compared the frequency of complications and effectiveness of abortions performed at 13–24 weeks for these indications. We calculated proportions of patients with complications for these two methods and controlled for confounding using a log binomial model.

RESULTS: Labor-induction abortions had higher complication rates and lower effectiveness than did D&E. Thirty-two of 136 women undergoing labor induction (24%) experienced one or more complications, in contrast to 9 of 263 women (3%) undergoing D&E (unadjusted relative risk 6.9 [95% confidence interval 3.4–14.0]). When controlled for confounding, the adjusted risk ratio for labor induction was 8.5 (95% confidence interval 3.7–19.8) compared with D&E.

CONCLUSION: Dilation and evacuation is significantly safer and more effective than labor induction for second-trimester abortion for fetal indications. Bias and chance are unlikely explanations for these large discrepancies. Women facing this difficult decision should be offered a choice of methods and be provided information about their comparative safety and effectiveness.
Uterine Evacuation for Second-Trimester Fetal Death and Maternal Morbidity

Edlow, Andrea G. MD, MSc; Hou, Melody Y. MD, MPH; Maurer, Rie MA; Benson, Carol MD; Delli-Bovi, Laurent MD; Goldberg, Alisa B. MD, MPH

Abstract

OBJECTIVE: To estimate maternal morbidity associated with uterine evacuation for second-trimester fetal demise compared with that associated with induced second-trimester abortion.

METHODS: This retrospective cohort study compared the maternal outcomes of two cohorts: 1) women diagnosed with fetal demise between 14 and 24 weeks who subsequently underwent dilation and evacuation or induction of labor; and 2) women undergoing induced abortion between 14 and 24 weeks by either dilation and evacuation or induction of labor. The primary outcome was major maternal morbidity. Assuming morbidity rates of 11% for fetal demise and 1% for induced second-trimester abortion, 94 patients were needed per group to detect significant difference in maternal morbidity (80% power, 5% alpha).

RESULTS: We identified 121 women with fetal demise and 121 women who underwent induced abortion for inclusion. There were no maternal deaths. In crude and adjusted analyses, treatment for fetal demise was not associated with increased maternal morbidity (25 of 121) compared with induced abortion (27 of 121) (adjusted odds ratio [OR], 1.15; 95% confidence interval [CI], 0.57–2.32). There were more blood transfusions in the fetal demise group (N=7) compared with the induced-abortion group (N=1) (P=.07). Induction of labor was more morbid than dilation and evacuation after adjusting for confounders (OR 5.36; 95% CI 2.46–11.69), primarily as a result of increased odds of infection requiring intravenous antibiotics. Gestational age of 20 weeks or greater was significantly associated with maternal morbidity (OR 2.59; 95% CI 1.39–4.84).

CONCLUSION: In the second trimester, uterine evacuation for fetal demise was not significantly associated with maternal morbidity compared with induced abortion. Induction of labor was more morbid than dilation and evacuation as a result of an increased risk of presumed infection.

LEVEL OF EVIDENCE: II
Table 5. Maternal Morbidity and Mortality: Induction of Labor Compared With Dilation and Evacuation in the Second Trimester

<table>
<thead>
<tr>
<th></th>
<th>IOL (n=78)</th>
<th>D&amp;E (n=164)</th>
<th>P*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transfusion</td>
<td>3 (3.9)</td>
<td>5 (3.1)</td>
<td>.72</td>
</tr>
<tr>
<td>IV antibiotic use</td>
<td>26 (33.3)</td>
<td>6 (3.7)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>ICU stay</td>
<td>0 (0)</td>
<td>2 (1.2)</td>
<td>1.0</td>
</tr>
<tr>
<td>Sepsis, shock, SIRS</td>
<td>1 (1.3)</td>
<td>2 (1.2)</td>
<td>1.0</td>
</tr>
<tr>
<td>Uterine perforation</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>NA</td>
</tr>
<tr>
<td>Unplanned procedure</td>
<td>9 (11.5)</td>
<td>9 (5.5)</td>
<td>.09</td>
</tr>
<tr>
<td>Peri or postoperative</td>
<td>0 (0)</td>
<td>3 (1.8)</td>
<td>.55</td>
</tr>
<tr>
<td>thrombotic event</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Death</td>
<td>0 (0)</td>
<td>0 (0)</td>
<td>NA</td>
</tr>
<tr>
<td>Any of above</td>
<td>34 (43.6)</td>
<td>18 (11.0)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

IOL, induction of labor; D&E, dilation and evacuation; IV, intravenous; ICU, intensive care unit; SIRS, systemic inflammatory response syndrome; NA, not applicable.
Categorical variables are presented with frequency counts (%).
* P values were obtained by excluding missing data.
Postoperative follow up

- See in one week for physical exam to monitor for signs of endometritis, consider a second visit two weeks following the procedure
- Screen for depression and offer counseling
- Discuss contraception if desired
- Pap/exam as needed 6 weeks post procedure
References

- Journals as listed on slides
- [www.acog.org](http://www.acog.org), Practice Bulletin for Second Trimester Abortion