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Dilatation and Evacuation

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Terminology

- Medical abortion
- Surgical abortion

➔

- Medication abortion
- Procedural abortion

- D+E

- Hysterotomy / hysterectomy rarely used

- The technique used for 2nd trimester procedural abortion

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Objectives

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- Appreciate the need for D+E in comprehensive abortion care
- Understand the techniques of surgical abortion used between 14 and 24 weeks of gestation
- Understand who is suitable for surgical abortion at these gestations
- Appreciate the importance of cervical preparation, ultrasound and role of feticide
- Understand post-operative care needs.

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Safe abortion saves lives

Deaths from abortion England and Wales

No. of deaths per triennium

180
160
140
120
100
80
60
40
20
0

1952-4
1955-7
1958-60
1961-3
1964-6
1967-9
1970-2
1973-5
1976-8
1979-81
1982-4
1985-7
1988-90
1991-3
1994-6
1997-9

therap.
spont.
illegal

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Transferrable life-saving skills

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- D+E is an essential skill in management of pregnancy complications
- Medical management may not be sufficiently quick or safe in emergency situations
- Being able to offer D+E can prevent severe maternal morbidity and prevent avoidable maternal deaths

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Women at risk of sepsis can and do die if left undelivered

Ireland November 2012: death of Savita Halappanavar
17 weeks gestation

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Valentina Milluzzo (2016)

12 doctors on trial after woman who was denied abortion dies

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Reeta Saidha

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15 weeks: ruptured membranes, died of sepsis after 4 days in hospital

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Inquest 2018

- Coroner ruled that there had been multiple missed opportunities to prevent death
- **Failure to consider surgical evacuation**

Coroner:

“why was surgical evacuation of the uterus not considered?”

Gynaecology registrar:

“because we aren’t trained to do that”

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Current guidance promotes choice

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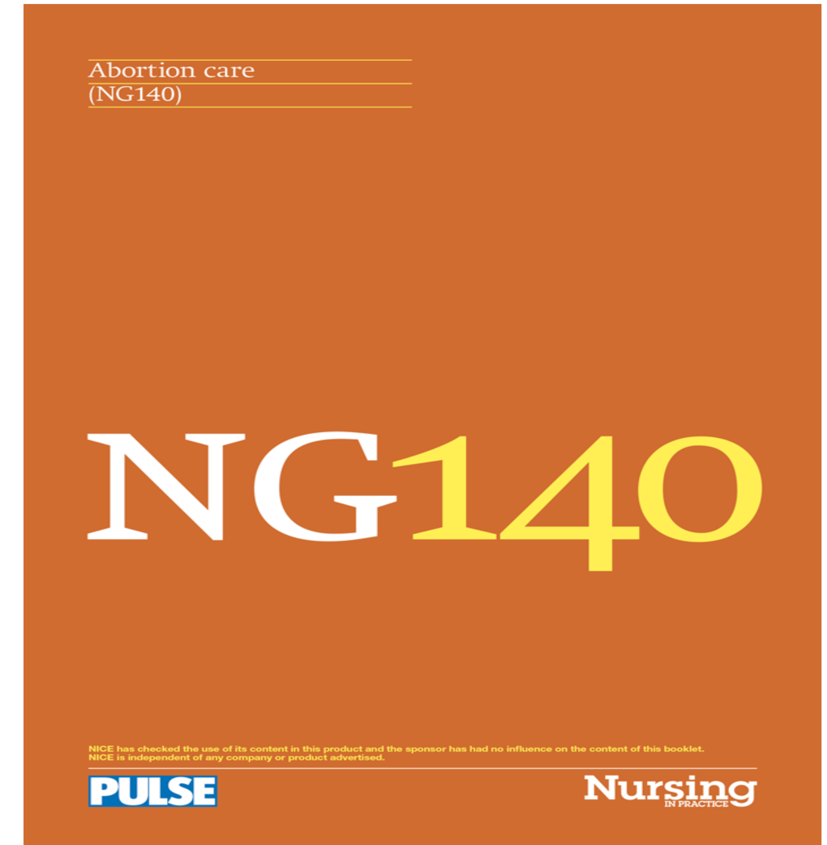
Guidance for abortion and abortion for **fetal anomaly** is the same

Women should be offered **a choice** between medical and surgical abortion at any gestation up to 24 weeks

Services should be able to offer both; if they can only offer one – a referral mechanism is needed



NICE guideline
Published: 25 September 2019
www.nice.org.uk/guidance/ng140

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Surgical methods

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- Dilatation and evacuation (D+E):
  - o recommended surgical method in the second trimester
  - o where available, far more common than medical induction abortion.

- D+E offered in very few hospitals but preferred by most patients if available
- D+E provided in abortion clinics up to 24 weeks

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Abortion method weeks gestation

% Abortion Method by Gestational Age in Weeks

Department of Health and Social Care. *Guide to Abortion Statistics, England and Wales: 2021.* London: DHSC; 2022.

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Surgical abortion 14-24 weeks

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- Evidence that surgical abortion has lower complication rate than medical (DH 2013; Lohr et al. 2008; Lyus et al. 2013).
- Neither method associated with adverse psychological sequelae (Burgoine 2005; Korenromp et al. 2005; Statham et al. 2001)
- Nor adverse outcomes in subsequent pregnancy (Chasen et al. 2005; Jackson et al. 2007; Kalish et al. 2002; Virk et al. 2007)
- Psychologically beneficial for women to have procedure that best fits their individual emotional needs (J Kerns et al. 2012)

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Prerequisites for safe D+E

An open cervix

An open mind

(Prof. David Grimes)

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Evidence – 2nd trimester methods

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- Medical and surgical abortion methods are very different patient experiences
  - Different duration and setting
  - Length of hospital stay
  - Pain and bleeding
  - Labour versus short operation under sedation / anaesthesia etc

- Women's responses to abortion are very varied. Do not presume which will be preferable for each patient, regardless of the indication

- Having a choice of method is valued by women undergoing TOPFA

  (J Kerns, IJOG 2012)

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Abortion for fetal anomaly (TOPFA)

- Vast majority of women undergoing TOPFA have medical induction because it is only method normally offered or available in maternity care setting
- Very small number of hospitals provide D+E, hence directive counselling towards medical
- RCOG audit found 79% of NHS hospitals providing abortion care for women over 13 weeks of gestation <u>only offered medical abortion</u>
- Second trimester miscarriage management generally medical due to lack of surgical skills

RCOG. National Audit of Induced Abortion 2000. Audit. London: Royal College of Obstetricians and Gynaecologists, 2001.

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Clinician bias – barrier to choice?

- Many clinicians find surgical abortion distasteful or emotionally challenging, and those who do provide it may be stigmatised
- D&E is a destructive procedure. Understandably, for many clinicians it represents too great an emotional, psychological, or moral burden

  [Martin, Soc Sci Med 2017]
- D&E shifts much of the burden of the termination onto the doctor

  [Grimes, Repro Health Matters 2008]

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Clinician bias

- This is perhaps the primary barrier to improving access to choice of method in second trimester abortion
- How in the course of our training and practice can we best address such powerful - and entirely valid - personal responses?
- Crucially, it must also be recognised that **forcing a women to endure an induction of labour she would prefer to avoid is not emotionally, psychologically, or morally neutral**

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Variations of D&E

- Standard:
  - 1.5 – 3 cm dilation achieved with osmotic dilators and/or medications up to 24 hours pre-evacuation; rigid tapered dilators may also be used
  - serial removal of fetus and placenta with forceps.
- Intact:
  - also called dilatation and extraction (D&X)
  - 4+ cm achieved with 2+ days osmotic dilators
  - intact removal using assisted breech delivery, calvarium decompression if needed.

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Surgical versus medical

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	Surgical	Medical
Location of abortion	Clinic or hospital	Clinic or hospital
Pre-abortion care	Cervical preparation 3–24 hours pre-evacuation	Mifepristone 24–48 hours pre-induction
Procedure duration	10–20 minutes (day case)	6–12 hours (often overnight)
Pain during procedure	Minimal to none due to anaesthesia	Painful contractions and delivery
See pregnancy remains	Not unless chosen	Possibly
Intact fetus	No unless D&X	Yes
Bleeding post-procedure	About 7-10 days, less each day	About 2 weeks, less each day

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Indications

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- Need for controlled or rapid evacuation.
- Potential for deterioration during labour.
- Cases where predictable evacuation preferred/required.
- Desire not to undergo labour.
- Back-up for failed medical induction.

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Contraindications

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- Few absolute contraindications:
  - inability to access uterus transcervically
  - placenta percreta.

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Assessment

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Mainly focused on determining:

- whether the procedure can safely take place in a clinic setting or should be in hospital.
- what anaesthesia can be offered.
- Gestational age:
    - directs cervical preparation regimen
    - in relation to surgeon skills and legal restrictions.

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Risk factors to flag

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Uterine	Cervical	Placental/ haematological
• Fibroids • History of transmural myomectomy or endometrial ablation • 2+ caesarean sections	• Conisation /repeat LLETZ • Cervix flush with vault • Trachelectomy • Cerclage	• Placenta accreta spectrum diagnosis or concern • Coagulation disorder or fully anticoagulated • Severe anaemia

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Considerations for abortion in hospital

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- Co-morbidities and characteristics that may need peri-abortion management or stabilisation, or intensive/prolonged monitoring:
  - American Society of Anesthesiology Physical Status (ASA) ≥ 3
- Increased procedure risk such that an emergency could not be managed with staff available in a clinic or facility resources (e.g. multiple caesareans, invasive placenta, morbid obesity).
- Uncontrolled psychiatric disorder requiring restraint/sedation.

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The role of ultrasound in D&E

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- Gestational age determination:
  - single biometric sufficient
  - head circumference.
- Placental location and features of invasion in women with a history of caesarean deliveries.
- Presence of uterine anomalies or large fibroids.

- **Intra-operative guidance of instruments.**
- **Confirmation of complete evacuation**.

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The role of feticide

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- Not routinely recommended however, perception it softens fetus/cervix making D&E easier, faster, safer.
- Compassion/respond to preferences.
- Avoid consequences of live birth (medical, ethical, emotional, legal).

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Cervical preparation

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- Pharmacologic: mifepristone and/or misoprostol.
- Osmotic dilators over several hours.
- Mechanical dilation over several minutes.

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Pharmacologic preparation

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- Misoprostol 400 mcg vaginal for 3 hours.
- Mifepristone 200 mg 24–48 hours prior ± misoprostol 400 mcg sublingual or vaginal for 1–3 hours.
- Rigid dilation generally required but similar procedure times, ease, complications to 18 weeks' gestation.

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Osmotic dilators

- Swell after insertion and dilate the os.
- Stimulate release of endogenous prostaglandins.
- Number placed gestation and provider dependent.

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Laminaria

- Dried, sterilised stem of kelp plant.
- Range of sizes (2–10 mm diameter, 60–85 mm length).
- Expand 3–4 times dry diameter over 12–24 hours.

© Chambers et al.

Chambers et al. Comparison of Dilapan-S and laminaria for cervical priming before surgical pregnancy termination at 17–22 weeks' gestation. *Int J Women's Health* 2011;3:347–52.

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Dilapan–S

- Synthetic hygroscopic rod.
- 3 sizes (3 x 55 mm, 4 x 55 mm, 4 x 65 mm).
- Expands more rapidly, consistently, to greater degree than laminaria.

© Medicem

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Rigid (tapered) dilators

Pratt or Denniston:

- doubled-ended
- up to 79 Fr.

Hawkin-Ambler:

- single-ended
- up to 21 mm.

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Innovating Education in Reproductive Health. *Cervical Preparation with Osmotic Dilators* [Accessed July 2023].

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NICE cervical preparation by gestation (weeks)

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- 14+0-16+0
  - Osmotic dilators, or
  - Buccal, vaginal or sublingual misoprostol, or
  - Mifepristone 24-36 hours pre-procedure
- 16+1-19+6
  - Osmotic dilators, or
  - Buccal, vaginal or sublingual misoprostol
- 20+0-23+6
  - Osmotic dilators
  - In addition, consider:
    - 200 mg oral mifepristone the day before the abortion and
    - inserting osmotic dilators at the same time as the mifepristone.

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Side effects and risks of cervical preparation

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Pharmacologic:

- cramping
- bleeding
- nausea/vomiting
- diarrhoea
- fever
- extramural delivery.

Osmotic dilators:

- perforation/false passage
- cramping
- bleeding
- extramural delivery.

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Analgesia/anaesthesia

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- Osmotic dilator placement:
  - cervical anaesthesia
  - NSAIDs.
- During preparation/after procedure:
  - NSAIDs are mainstay.
- During procedure:
  - deep sedation or general anaesthesia without intubation
  - cervical anaesthesia with analgesia or moderate (conscious) sedation
  - general anaesthesia with intubation rarely needed.

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General anaesthesia or deep sedation for D&E

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- General anaesthesia or deep sedation is most often used for D&E, particularly cases beyond 16-18 weeks' gestation.
- Intravenous propofol and fentanyl.
- Volatile inhalational anaesthetic agents such as nitrous oxide or isoflurane are avoided due to:
    - relaxation of myometrium with higher risk of perforation
    - increased blood flow
    - increased blood loss.
    - Requirement for additional / multiple utero-tonic agents

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Consent for D&E

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- Verbal/written information on method and alternatives:
  - video/animation
  - decision-making tool (e.g. NICE tool).
- What to expect before, during and after.
- Risks and complications.
- Written consent is standard.

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Instruments used during a D&E

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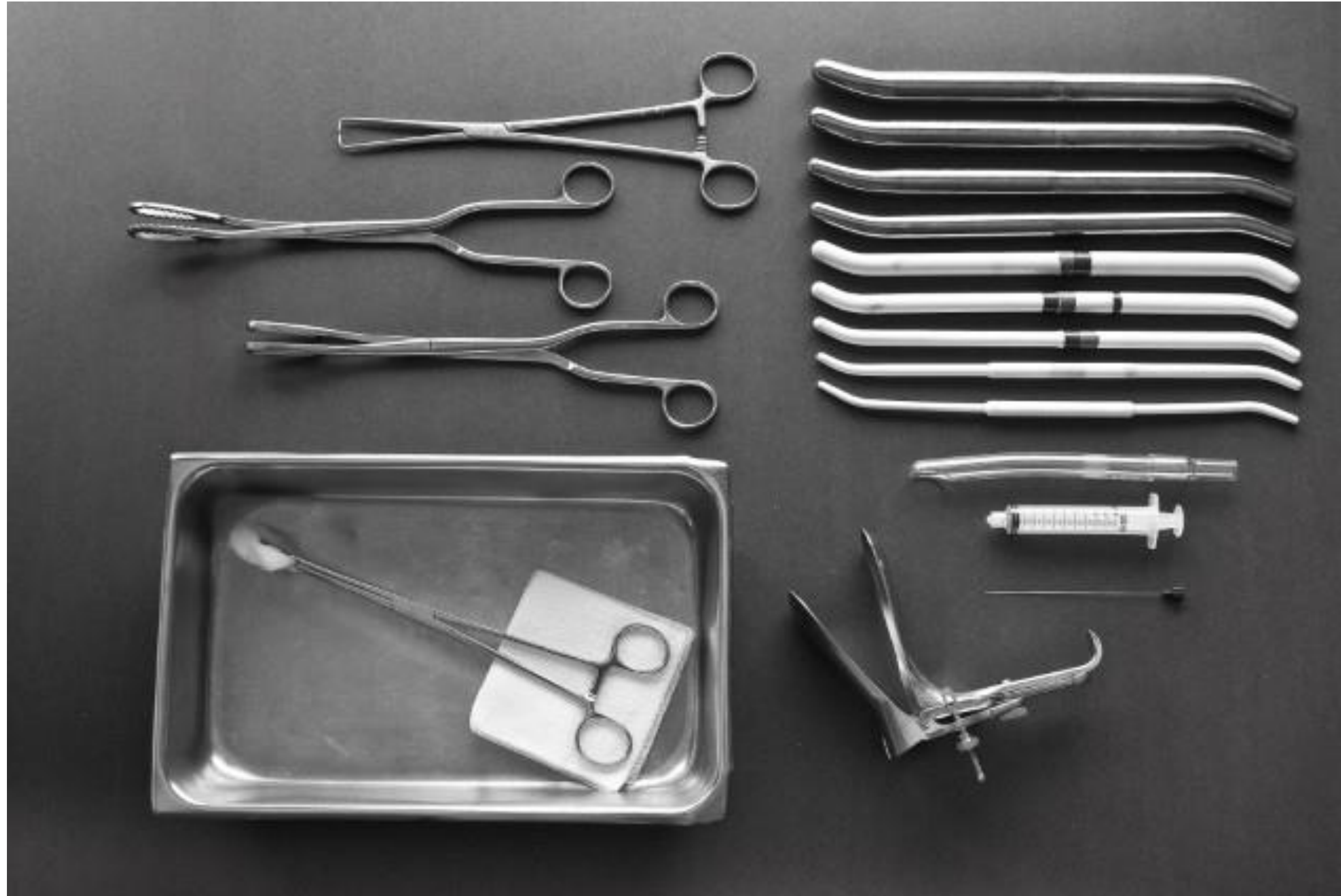

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Speculums

Klopfer

- Shorter.
- Wider.

Graves

Cusco

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Speculums

Sims

Weighted

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Stabilising the cervix

- An atraumatic vulsellum is recommended.
- Single-tooth vulsellum typically avoided due to risk of bleeding or tearing.
- A ring forcep can sometimes be used.

Vulsellum

Allis forcep

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Difficulties with stabilisation

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Causes

- A very rigid cervix resistant to dilatation.
- Very friable cervical tissue that tears readily.

Strategies

1. Ultrasound guidance to ensure the dilator pressure is being applied in the line of least resistance.
2. Apply a second atraumatic vulsellum to increase stabilisation.
3. Insert a lateral cervical suture on either side and use these to assist stabilisation.

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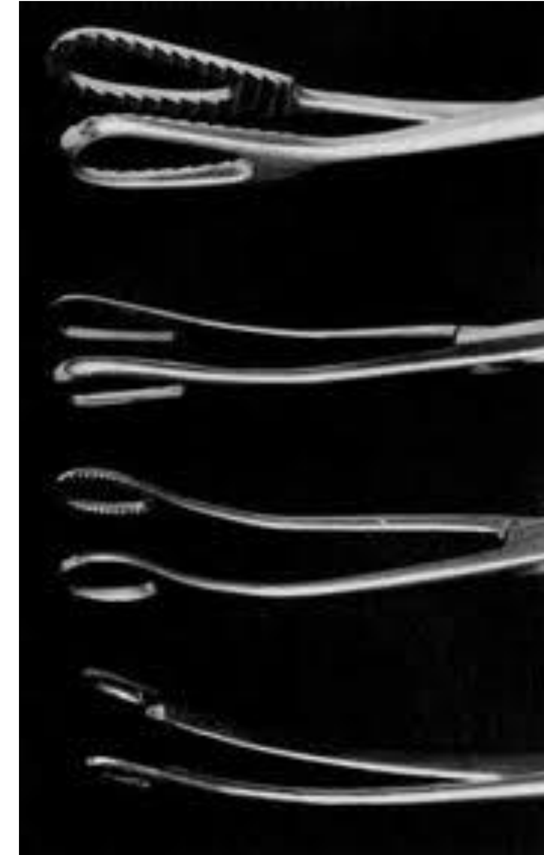
Evacuation forceps

- Allow for controlled extraction.
- Grasp and reduce size of tissue.
- With or without rachet.

Sopher forcep

Bierer forcep



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Bierers Forceps

>18 weeks: longer instruments, larger jaws, better teeth

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Bierers require more cervical prep!

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Ultrasound guidance

- Recommended to enhance safety.
- Trans-abdominal.
- Longitudinal plane.
- Teamwork:
  - the surgeon and scanning assistant work together, with the assistant showing the surgeon where to go rather than following the instruments as they are passed.

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Ultrasound guidance

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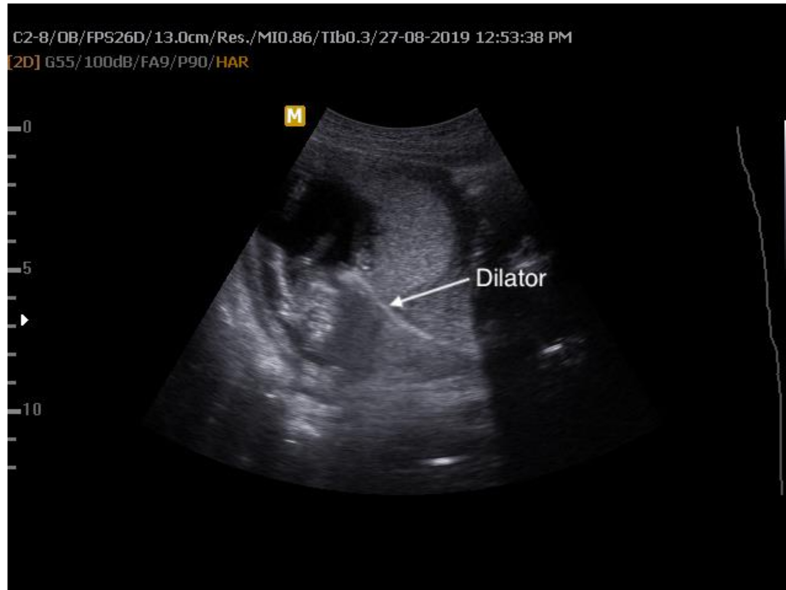

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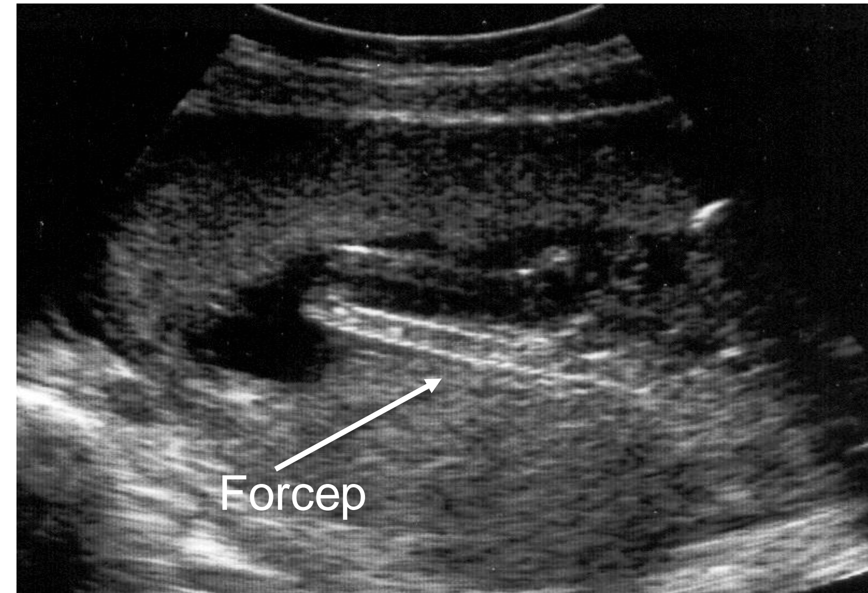

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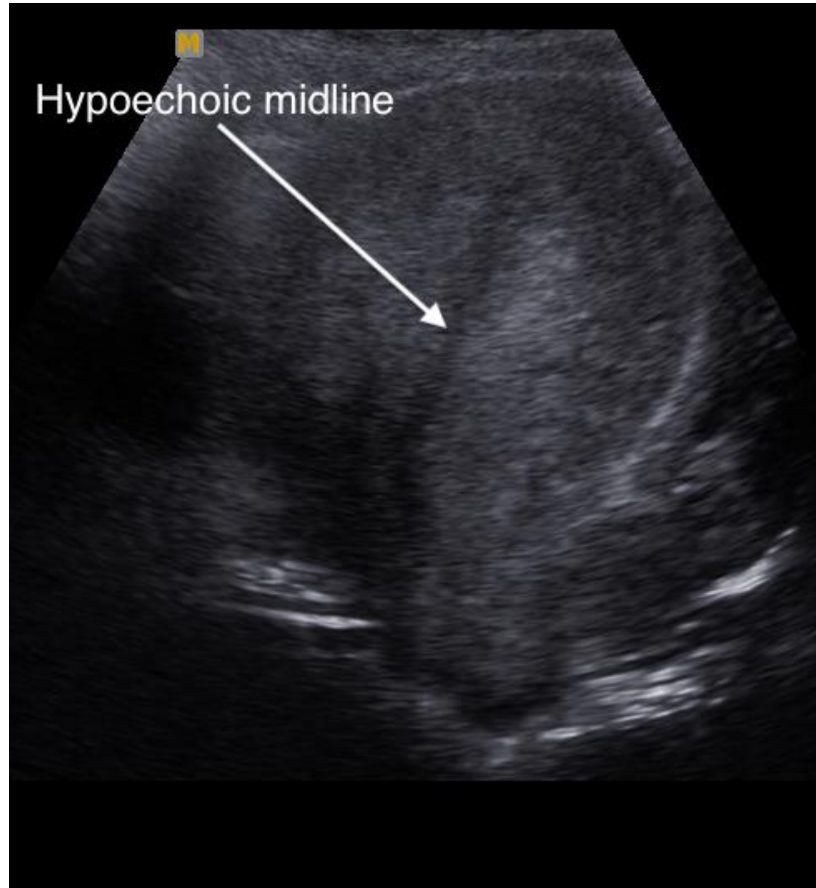
Ultrasound Guidance

a. Complete



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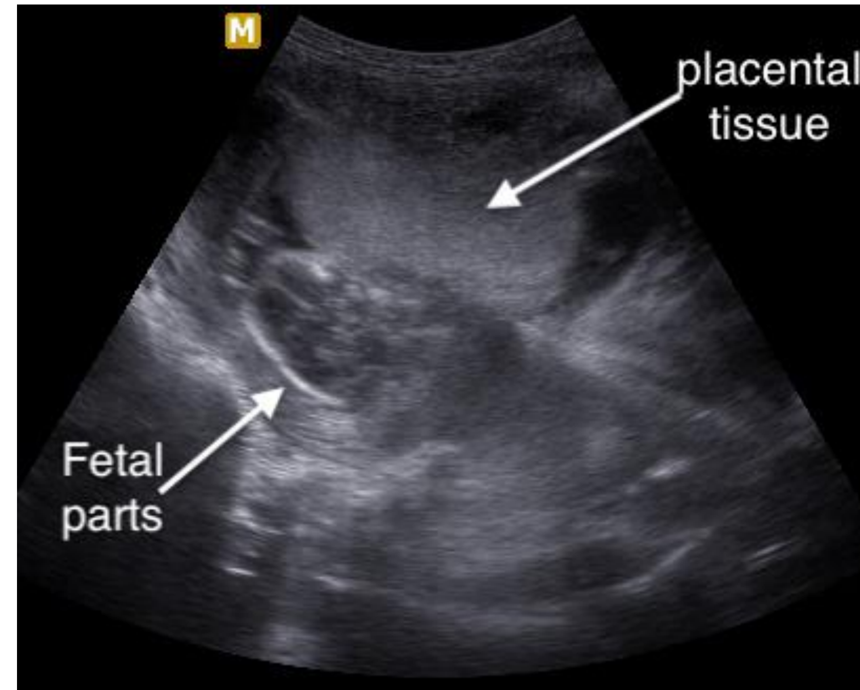
b. Incomplete



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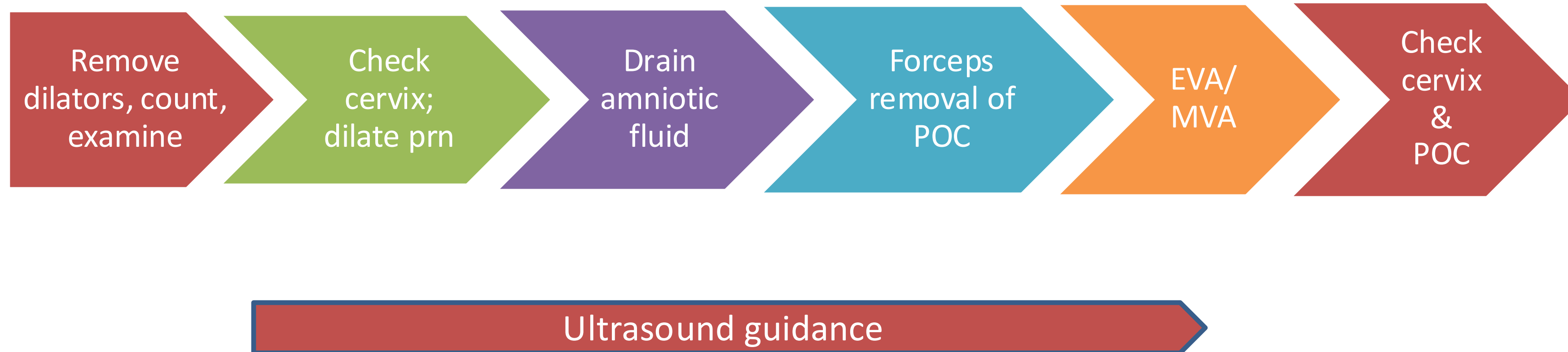
Steps for standard D&E



Strive to maintain a “no-touch” technique

POC = products of conception
MVA = manual vacuum aspiration
EVA = electric vacuum aspiration

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Safe use of forceps

- Ultrasound guidance.
- Insert slowly and intentionally.
- Open just beyond cervix.
- Stay as low as possible and in midline.
- “Drop hands”.
- Small pieces.
- Placental removal may be done at any time.

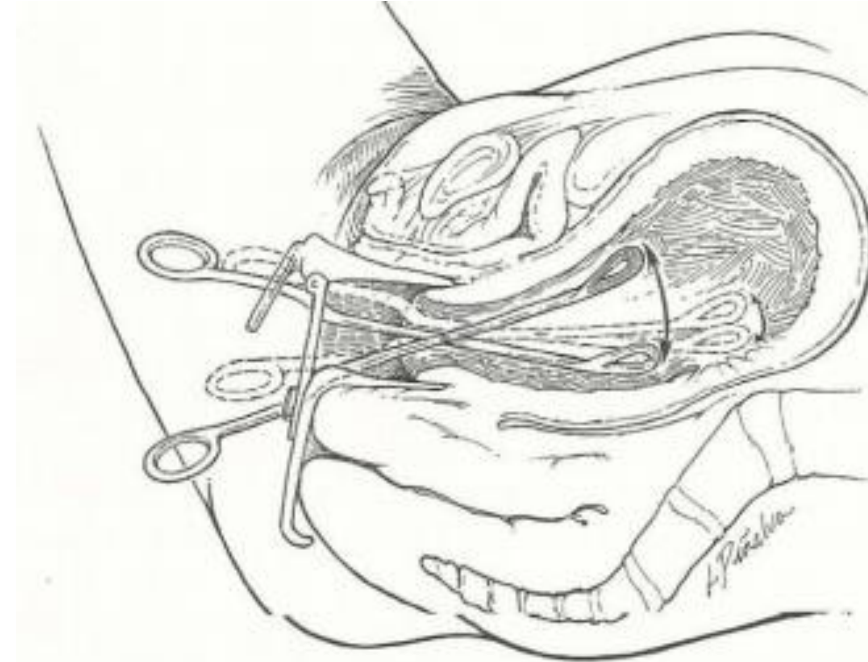

Figure 11.2 Placement of forceps in the lower uterine segment. Hinge remains at the level of the cervix, allowing maximum range of motion of the jaws to extract pregnancy elements from the lower uterine segment. When deeper insertion of the forceps is necessary to explore the fundus and cornua, care must be taken to apply cervical traction and follow the axis of the uterus to minimize the risk of trauma to the uterine wall.

© Image: Paul M, Lichtenberg E, Borgatta L, et al./Churchill Livingstone, 1999.

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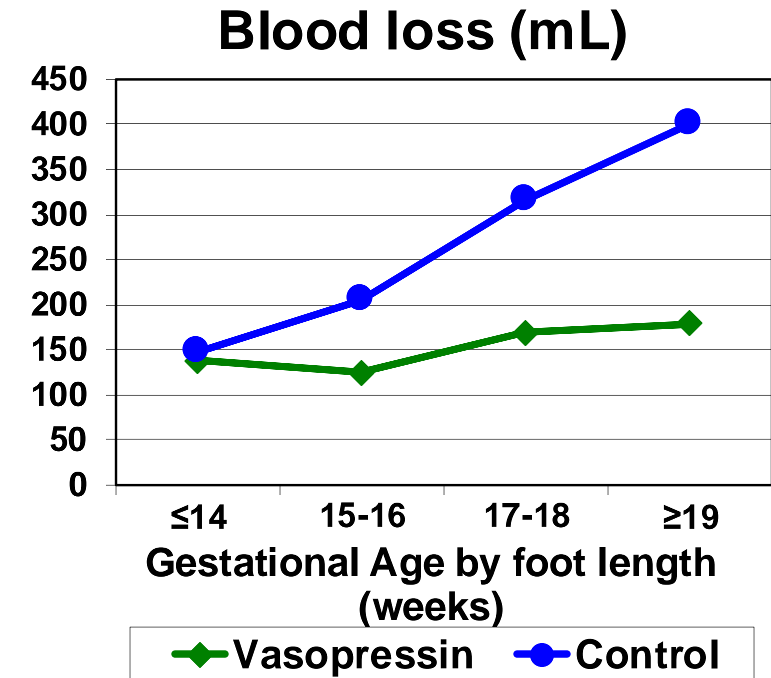
Vasopressin and blood loss

- Double-blinded RCT of blood loss at D&E from 14 to 18 weeks (n = 337 women).
- Intracervical injection of:
  - 20 mL 1% mepivacaine
  - 20 mL 1% mepivacaine with **4 units vasopressin.**
- Blood loss calculation:
  - all fluid and tissue collected
  - tissue weight subtracted
  - average amniotic fluid volume subtracted.
- Significant decrease in EBL > 250 mL.
- Blood pressure not increased compared to control.



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Utero-tonic agents

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"The well-contracted, empty uterus does not bleed" – an aphorism for all midwives and obstetricians.

- If cervical prep regime has not included misoprostol, consider routine use of Misoprostol 400mcg PR at start of D+E procedure
- Above 16 weeks give iv bolus of syntocinon / oxytocin near end of D+E
- Use other utero-tonics as required to ensure well-contracted uterus at end of procedure

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Infection prevention

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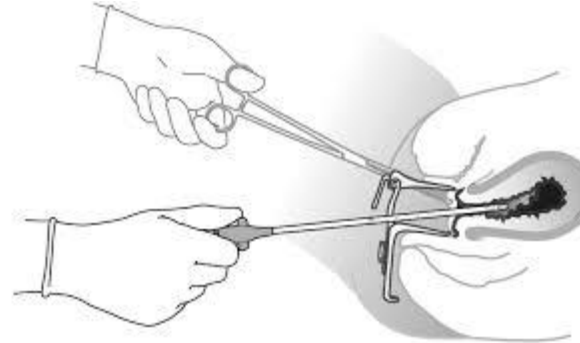

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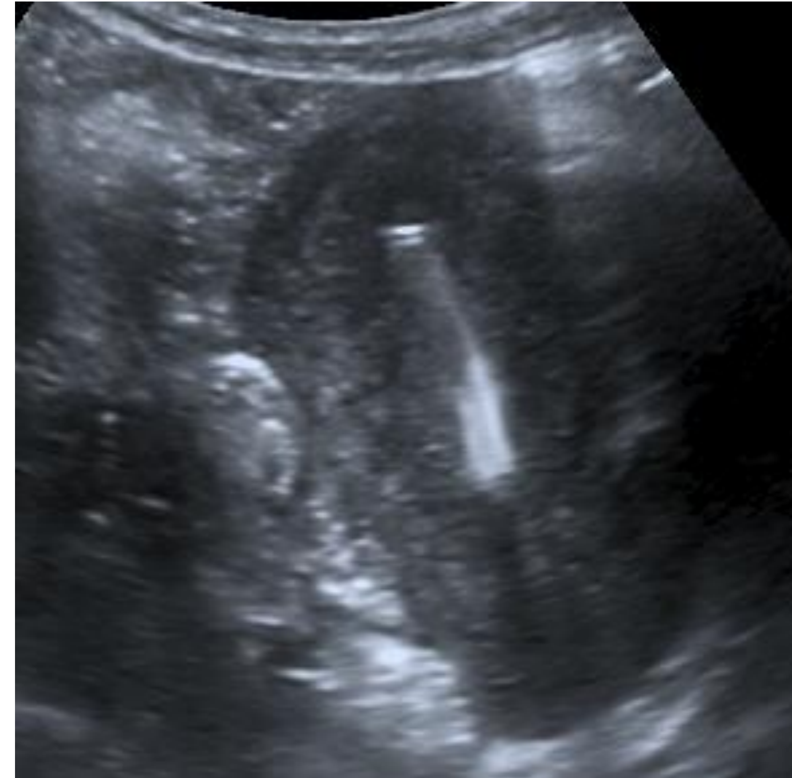
Contraception

- Intrauterine contraception can be inserted post-procedure at any gestation.
- Implants, injectables, pills, patches and rings can also be initiated on the day of surgery.

IUD inserted at completion of D&E



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Immediate post-procedure care

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- Duration:
  - local anaesthetic or conscious sedation: 30-60 minutes
  - general anaesthetic: 60-90 minutes.
- Monitoring and management:
  - observations
  - pain: NSAIDs, heating pad as needed
  - bleeding: should be scant to light
  - other side effects of anaesthetic or sedation (e.g., nausea/vomiting).
- Provide Anti D if Rhesus negative.
- Verbal and written discharge advice.

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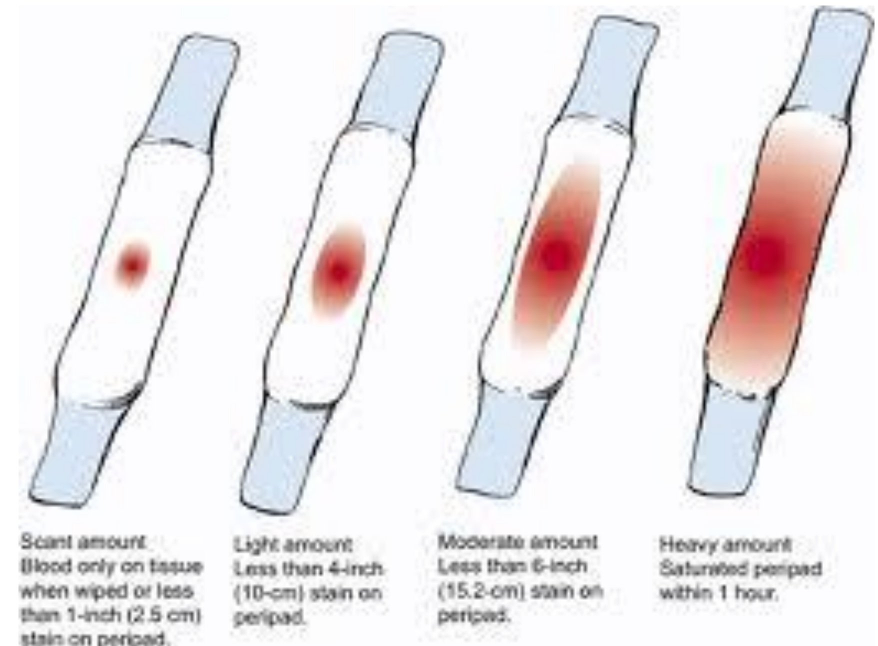

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Aftercare

- Routine follow-up is not required.
- Reasons to contact the service:
  - general feeling of being unwell or feeling pregnant
  - signs of infection: fever, vaginal discharge
  - heavy (> 2 pads per hour for 2 consecutive hours) or prolonged (> 2 weeks) bleeding or passage of clots
  - pain uncontrolled by over-the-counter analgesics.
- Emotional support.
- Post-abortion contraception support.

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