Pain with Office Gyn Procedures: Tips, Tricks and Evidence

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Disclosures

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Overview

- Pain and comfort in general
- Local anesthetic
- Uterine procedures
  - IUD insertion (Now there are 5!)
  - Endometrial biopsy
  - Manual uterine aspiration
- Quick tips for simple procedures:
  - Cervical polyp removal, vulvar biopsy, IUD removal, colposcopy and biopsy
- Not today: hysteroscopy, saline sono, LEEP, cryo

Components of Pain

Cognitive-evaluation component
Thought concerning the cause and significance of the pain

Motivation-affective component

Sensory-discriminative component

Pressure
Location
Intensity
Quality
Anxiety
Fear
Meaning of situation
Attention
Past experience
Depression
Location

The Peak-End Rule

- People judge an experience largely based on how they felt at its peak (most intense point) and its end, not on the sum or average.
- “Duration neglect” - judgment of unpleasantness of painful experiences depends little on the duration.

Cultural Differences and Pain

- Cultural differences exist in the understanding and report of pain.
- Unfair and unhelpful to make assumptions.
- Multiple studies document inferior treatment of acute (ED) and postoperative pain in U.S. minorities.

Clinician characteristics and acute pain

- Physician non-white race associated with significantly better pain treatment in ED.¹
- Provider gender as opposed to patient gender was a factor:
  - Female physicians more likely to administer analgesics than male physicians (66% vs 57%, P = 0.009).²

Measuring Pain

- No objective pain indicator.
- Satisfaction
- Recommend to a friend
- Choose again
- % with severe pain (often 7-10/10)
- McGill pain questionnaire
- Pain scales
  - Verbal 0-10, 0-100; Visual Analog Scales
  - Clinically significant difference? 1.5 – 2 /10
Factors Associated with Discomfort with Routine Pelvic Exams

- Mean pain 3.2/10
- 17% had pain of 6-10/10 with pelvic exam
- 30% of those with a history of sexual abuse
- **Factors associated with high pain:**
  - Age < 26 (OR=2.75)
  - Presence of one or more mental health problems (OR=1.9)
  - History of sexual abuse (OR=1.85)
  - Dissatisfaction with present sexual life (OR=1.7)
  - Negative emotional contact with the examiner (OR=8.2)

Minimizing Pain with a Speculum: 201

- Ask if they are ready!
- Gel lubrication significantly decreases pain
- Use the right size (shortest possible for uterine procedures, open angle for large buttocks)
- Avoid scraping sensitive anterior wall (don’t start at 90 degrees then rotate)
- Don’t open more than needed.
- Avoid “popping” the cervix into view or snapping it at time of speculum removal
- Move slowly

Creating rapport is pain control.
**Language**

“Most patients are worried about pain, and they are often surprised when it is easier than they had expected. As we proceed, let us know how you are feeling so that we can make adjustments. We want this to go well for you.”

**Blending compassion, medical fact, and positive suggestion**

**Language considerations...**

**Instead of:**
- “Relax”
- “You’re doing great”

**Try:**
- “try taking a deep breath”
- “You might feel a sensation” “a twinge”
- “I can see you’ve had practice with relaxation.”

**Trauma-Informed Care for ALL**

- **Patient in Control**
  - Knock before entering
  - Ask before doing anything (esp. touching)
  - Discuss the signal to pause

- **Establish Trust**
  - Meet patient when clothed
  - Ask about preferences, concerns, interests
  - Partner/friend present

- **Calm, Respectful Atmosphere**
  - Keep patient’s body covered
  - Language, avoid interruptions, room temp

- **Low Stimulation**
  - Move & speak slowly, esp. during exam
  - Consider topical anesthetic, avoid noise

**Strategies for Acute Pain**

**Multimodal pain management**
- More than 1 class of meds or analgesic technique
- Local anesthetic + NSAID + narcotic + benzodiazepine + nonpharmacologic strategies

**Preemptive analgesia**
- Intervention more effective PRIOR to tissue injury
- Increased pain response to subsequent stimulation (“wind-up” or “hyperanalgesia”)
Levels of Sedation

<table>
<thead>
<tr>
<th>Example</th>
<th>Minimal Sedation (anxiolysis)</th>
<th>Moderate Sedation</th>
<th>Deep Sedation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral lorazepam and/or hydrocodone</td>
<td>Fentanyl 50-100 mg + midazolam 1-3 mg IV</td>
<td>Add propofol</td>
<td></td>
</tr>
</tbody>
</table>

Responsiveness:

- Normal response to verbal stimulation
  - Purposeful response to verbal or tactile stimulation
  - Purposeful response after repeated or painful stimulation

Airway:

- Unaffected
  - No intervention required
  - Intervention may be required

Spontaneous ventilation:

- Unaffected
  - Adequate
  - May be inadequate

Cardiovascular function:

- Unaffected
  - Usually maintained
  - Usually maintained

Patient reaction defines level of sedation, not medication dose.

Abortion Anesthesia: What Women Choose

Given the choice of general vs. local ONLY

Nearly all women would prefer no pain (whether awake or asleep) though other preferences vary²

- 40% Local
  - Ambulatory
  - Avoid side effects
  - Feel awake
  - No pain
  - Less anxiety

LOCAL ANESTHESIA

Other specialities expect it to work.

They aim to block all the nerves they will irritate and use as much as needed within safety range

"I would never do a block and not test it to be sure it worked."

-Dentist to me, 2003

Nonpharmacologic pain management

- Patient control: Participation in decisions¹
- Counseling techniques
  - Positive suggestion
  - Guided imagery
- Diversion of attention
  - "Vocal local"
  - Visual distraction
  - Ceiling art³
- Heat²
  - Acupuncture⁵
  - TENS, TEAS
  - (but not pt choice by headphones⁶)
- Music⁴
  - (but not pt choice by headphones⁶)

Cervical & Uterine Nerves

**Uterine fundus**
Sympathetic nerves via:
- infundibulopelvic pelvic ligament → utero-ovarian ligament
- inf hypogastric nerve through uterosacral ligaments T10 - L1

**Lower uterus/cervix**
- Parasympathetic Frankenhauser plexus lateral to cervix, S2 - S4

Sensory nerves!

Variables in LA effect

**Bottom Line:**
TEST for analgesia before beginning procedure and add more if safe to do

Variables in LA effect

- Agent
- Dose
- Volume and concentration
- Distance to nerves
- Size/type of nerves
- Tissue perfusion (vasodilation)
- Temperature of injection
- pH of injection
- Depth of injection
- Rate of injection

Maximum Dosing

<table>
<thead>
<tr>
<th>Local Anesthetic</th>
<th>Onset (mins)</th>
<th>Max Dose (mg/kg) without/with epi</th>
<th>Max Dose (mg) without/with epi</th>
<th>55kg pt dose without/with</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lidocaine</td>
<td>4-7</td>
<td>4.5/7 mg/kg</td>
<td>300/500 mg</td>
<td>25/38 mL</td>
</tr>
<tr>
<td>Bupivacaine</td>
<td>10-20</td>
<td>2.5 mg/kg</td>
<td>175 mg</td>
<td>55 mL</td>
</tr>
<tr>
<td>Chloroprocaine</td>
<td>fast</td>
<td>11/14 mg/kg</td>
<td>800/1000 mg</td>
<td>60/77 mL</td>
</tr>
</tbody>
</table>

- Rough estimates that are not evidence-based.
- Lower peak levels and slower absorption with vasoconstrictor
- Bupivacaine with less difference since med is vasoconstrictive

Lidocaine Toxicity & Side Effects

![Graph showing lidocaine toxicity and side effects](image)
Prevent Local Anesthetic Systemic Toxicity (LAST)

- Aspirate for blood prior to injection
- Monitor total dose
- Monitor patient symptoms; Stop after partial dose to check symptoms
- Use larger volume of more dilute solution
- Inject multiple sites/depths
- Prepare for toxic and allergic reactions

Treatment: 100 mL 20% intralipid IV

“Paracervical Block”

Want tissue distension in dense cervical stroma rather than areolar paracervical tissue

Deep injection more painful but more effective

Local Anesthetic can HURT

- Most painful part of procedure sometimes
- Deep blocks hurt more
- Minimize pain with block:
  - ✅ Topical anesthetic first or if pain with injection
  - ✅ Buffered lidocaine (2mL in 200 mg lidocaine)
  - ✅ Small gauge needle (25G)
  - ✅ Slow injection
  - ✅ Next injection in anesthetized area
  - ✅ Inject ahead of needle
  - ✅ Distraction (tap leg)

Standard 20 mL block is not enough. Can we do better?

- Larger dose
- Minimize block pain
- Aim for all nerves
- Wait for it to work

Add MORE if pt feels any pain with dilation. Consider after uterine involution.

Buffer. Inject ahead of the needle. Small gauge. Topical gel or spray.

Inject at internal os, uterosacral, fundus if possible

RCT’s without difference. Obs studies, pharmacokinetics & neurobiology say WAIT
**Topical cervical anesthesia**

**Cervical procedures**  
- 20% gel improved pain with:
  - Cervical biopsy
  - Paracervical block
  - Tenaculum placement (NOT with ECC)

**Intrauterine procedures**  
- **Aspiration:** 2 sprays 10% lidocaine + 8 mL PCB improved pain 6.6 → 2.4/10.2
- **EMB:** 4 sprays reduced pain 5.1 → 3.5/10.3
- **IUD:** 4 sprays reduced pain 3.2 → 1.0/10 (parous women)4  
  Mostly negative evidence for gel 1.5,6

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**Intrauterine anesthesia**

- 5mL 2% lidocaine  
- 14 to 18 gauge angiocath  
- Advance through cervix, SLOW infusion into cavity  
- Hold syringe at cervix for 2 minutes  
- Can combine with paracervical block

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**Intrauterine Local Anesthesia**

- **EMB**  
  Significant improvement1,3  
  5mL of 2% lidocaine
- **Lost IUD Removal**  
- **Saline Sono**  
- **MUA**  
  Significant improvement  
  5mL of 4% lidocaine2
- **HSC**  
  Mixed evidence.4-6++

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**INTRAUTERINE PROCEDURES WHICH DO YOU DO?**

- Uterine aspiration  
- EMB  
- Saline sono  
- IUD insertion  
- Hysteroscopy

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1. Rabin ObGyn 1989  
2. Karasar Contracep 2011  
3. Aksoy Ob Gyn 2015  
4. Aksoy FP  
& Regro HC 2014  
5. Maguire Contracep 2012  
6. Allen Contracep 2015

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PAIN WITH INTRAUTERINE PROCEDURES

Mean Pain / 10

- Uterine Aspiration: 5-7
- EMB: 4-7
- Saline Sono: 3-5
- IUD insertion: 3-7
- Hysteroscopy: 5-7

Most studies show it does NOT help. Increases pre-procedure pain.4,5

Some with improvement, most with no difference and increased cramping.2,5

Improved pain but ONLY with scopes > 6mm.3,5 Proc pain may improve but significant side effects and pain before.1,5

NSAIDs for Uterine Procedures

- Clearly effective for dysmenorrhea and uterine aspiration
- Little difference in efficacy between NSAID types in population, but large inter-individual difference
- Mixed evidence, but biologically plausible + safe + validation of need for pain control
- Ibuprofen has min effect on platelet aggregation, but naproxen, tramadol or ketorolac may be better?
- Studies show modest reduction in intra- & post-uterine procedure pain

Misoprostol before intrauterine procedures

- MVA: Proc pain may improve but significant side effects and pain before.1,5
- HSC: Improved pain but ONLY with scopes > 6mm.3,5
- EMB: Some with improvement, most with no difference and increased cramping.2,5
- IUC: Most studies show it does NOT help. Increases pre-procedure pain.4,5

Do you give NSAIDs prior to uterine procedures?

- Usually
- Sometimes
- Rarely
- I don’t do uterine procedures, but would recommend
- I don’t do uterine procedures, wouldn’t recommend except where evidence is clear


Ireland, Allen. Ob & Gyn Surv 2016; AMA Pathophys of Pain 2005
NSAID for IUD insertion

In Nuliparas:
- Tramadol 50mg 2.3/10
- Naproxen 550mg 2.9/10
- Placebo 4.9/10

In Multiparas:
- Ketorolac
- Placebo

In Multiparas:
- Tramadol 50mg
- Naproxen 550mg
- Placebo

IUD Types

<table>
<thead>
<tr>
<th>Copper</th>
<th>Liletta</th>
<th>Mirena</th>
<th>Kyleena</th>
<th>Skyla</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hormone</td>
<td>none</td>
<td>LNG</td>
<td>LNG</td>
<td>LNG</td>
</tr>
<tr>
<td>Dose</td>
<td>52 mg</td>
<td>52 mg</td>
<td>19.5 mg</td>
<td>13.5 mg</td>
</tr>
<tr>
<td>Release mcg/d</td>
<td>-</td>
<td>20 10 at 5 yrs</td>
<td>20 10 at 5 yrs</td>
<td>17.5 7.4 at 5 yrs</td>
</tr>
<tr>
<td>Years of use</td>
<td>10-12 (FDA 10)</td>
<td>5-7 (FDA 5)</td>
<td>5-7 (FDA 5)</td>
<td>5 3</td>
</tr>
<tr>
<td>Special issues</td>
<td>Non-hormonal, heavier bleeding</td>
<td>Generic Mirena, non-profit company</td>
<td>Low systemic, 90% less bleeding</td>
<td>Smaller, little lower dose, less amenorrhea</td>
</tr>
</tbody>
</table>

IUD Insertion Steps

Preparation
- Bimanual
- Speculum
- Anesthetic
- Tenaculum
- Sounding
- Insertion

PAIN
- Cut strings
- Remove inst.
- Post-procedure

Tenaculum Placement

- If you place it, you’ll likely USE it
- More stretch receptors than pinpoint
- Most effective: Intracervical injection
- Also helpful: Forced cough Sprays or gel
- I use 3-5 mL with 25G needle and think no one should EVER feel a tenaculum placed.
- 1-2 mm deep (superficial!) and inject slowly

Endometrial Biopsy

- Half of patients describe it as “moderately” or “severely” painful
- Naproxen decreases pain


Intrauterine Lidocaine for EMB
2% 5mL for 3 mins

- No effect on pathology
- = Paracervical block for EMB

EMB Without a tenaculum

Using a tenaculum for EMB with pipelle: an RCT

Randomized N=188

- Without tenaculum (N=61)
  - Unable to perform (N=3)
  - Mean Pain 4.4 ± 1.6
  - Inadequate specimen (N=3)

- With tenaculum (N=117)
  - Mean Pain 7.7 ± 1.5
  - Inadequate specimen (N=9)

Kucukgoz Gulec U et al. Arch Gynecol Obstet, 2014

Mean Pain

Uterine Aspiration

- Mean pain 5-7 in most studies
- Same procedure for miscarriage and abortion
- Evidence doesn’t support oral relaxation or low dose IV, but patients have preferences

UCSF Gyn clinic & Women’s Options Center
- Ibuprofen 800 mg
- Lorazepam 1-3mg if desired
- Tylenol #3 or Norco if desired
- Block (details later)
- Non-pharmacological

RCT Oral Meds vs. Moderate Sedation

All:
- Ibuprofen
- Cervical block 20 mL 1% lido

PO
- 10 mg oxycodone
- 1 mg SL lorazepam

IV
- 100 mcg fentanyl
- 2 mg midazolam

Intraoperative pain:
- 61 /100 vs. 36 /100

Severe pain (70+):
- 46% vs. 15%

Considerations

- 10% enrollment (1302 eligible → 130 enrolled)
  - "Caucasian, interested in the research question"
- Blinded, but 85% guessed correctly
- All women in each arm got same meds
- Narcotic heavy oral meds
What U.S. Abortion Providers Use

- Local cervical +/- oral meds (46%)
- Local cervical + moderate sedation (33%)
- Deep sedation or general (21%)

Benzodiazepines for Aspiration

- Anxiety increases volume of pain signals and decreases ability to cope
- 1mg lorazepam: Anxiety scores drop instead of rise. Pain higher than those choosing nothing
- 10mg midazolam PO 30-60 min prior:
  - less anxiety pre-op
  - less nausea
  - more sleepy and amnesia after
  - No change in satisfaction

Finally...The RCT to Show Cervical Block Helps

- 20 mL 1% buffered lidocaine
- Slow, deep injection at tenaculum + 4 sites
- Stratified by <8 weeks (early), 8-10 weeks (late)

<table>
<thead>
<tr>
<th></th>
<th>Pain /100</th>
<th>Dilation</th>
<th>Aspiration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BLOCK early/late</td>
<td>SHAM early/late</td>
<td>p-value</td>
</tr>
<tr>
<td>With block</td>
<td>55/49/58</td>
<td>30/24/35</td>
<td>.001</td>
</tr>
<tr>
<td>Dilation</td>
<td>42/34/51</td>
<td>79/75/83</td>
<td>.001</td>
</tr>
<tr>
<td>Aspiration</td>
<td>63/58/67</td>
<td>89/88/89</td>
<td>.001</td>
</tr>
</tbody>
</table>

- And that it works for dilator placement: 54% → 13/100%

Vasopressin in Cervical Block For Uterine Aspiration

- Increases safe amount of local anesthetic
- Prolongs effect of block
- Decreases blood loss (2nd trimester)
- May decrease re-aspiration
- Shown to decrease force for dilation with HSC

Cervical block for uterine aspiration at UCSF WOC

1) Start with 25G needle
2) 3-4 mL for tenaculum
3) ~25 mL 4-point paracervical
4) Wait a bit to check for nausea/dizziness
5) ~17 mL with 22G spinal needle through os at internal os and above
6) Check for pain with small dilators
7) If any pain, wait longer and add more plain local

Recipe = 42mL:
- 20 mL 1% lidocaine
- 20 mL saline
- 2 mL bicarb 8.4%
- 3-4u vasopressin

Equipment:
- 25G 1.5in or spinal needle
- 22G spinal needle
- Control syringe

QUICK PAIN TIPS FOR SIMPLE GYN PROCEDURES

 WHICH PROCEDURES DO YOU DO?
- IUD removal
- Cervical polyp removal
- Vulvar biopsy
- Colpo and cervical biopsy
- All of the above

IUD Removal with Strings
- No training necessary!
- Most important: offer other form of contraception or preconception discussion
1) Discuss possible pain
2) Ask pt. to cough
3) Pull quickly on strings as she coughs (helps with the visceral feeling pt often has when you remove it)
4) Consider block on occasion

IUD Removal WITHOUT Strings
1. Confirm IUD in uterus with sono (Remember KUB required to confirm IUD is gone)
2. Try cytobrush in cervix
3. Consent if using forceps
4. Can try below internal os without tenaculum or block
5. Recommend tenaculum and block if above internal os
6. Consider ultrasound
Cervical Polyp Removal

- Can remove cervical polyps <2cm on a thinner stalk (mobile)

**Equipment:**
1. Ring forceps
2. Silver nitrate sticks

Typically well tolerated without analgesia. Occasionally, twisting is painful and procedure should be done with paracervical block.

Vulvar Biopsy (or HPV or skin tag removal)

- **Topical!**
  - eg. 2.5% lidocaine + 2% prilocaine
- Then usually inject local w 25-27G needle, 0.5-1mL

Colpo and Cervical Biopsy

- Mean pain scores 3.0 and 3.5
- Training necessary (except for gross lesion)

**Most effective:**
- Superficial 0.5 mL 1% lidocaine with 27G needle
  - Significant pain reduction 4 → 1.2/10
  - Pain for injection 1.5/10
- Forced cough also helpful

**Likely NOT effective:**
- NSAIDs
- Topical anesthetic


Colpo and Cervical Biopsy

Visual distraction reduces pain

- 321 women undergoing colpo
- 6 mos before and after renovation
- 54% reduction in pain

Music also shown to be helpful
In Summary...

- Cultivate empathy
- Demonstrate you care about patient comfort
- Talk to patients about reasonable pain control options (even if you recommend against them or can’t offer them)
- Individualize pre-medication (and other care!)
- Optimize local anesthesia
- Pain scales aren’t perfect, but are a good tool.