Pain with Office Gyn Procedures: Tips, Tricks and Evidence

Karen R. Meckstroth, MD, MPH
Director, UCSF Women's Options Center
Clinical Professor, UCSF
Dept. of Obstetrics, Gynecology & Reproductive Sciences
Zuckerberg San Francisco General

UCSF
University of California San Francisco
advancing health worldwide

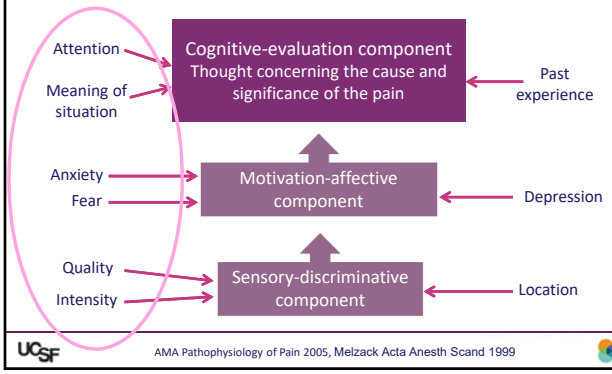
Disclosures

Dr. Meckstroth receives an honorarium from Danco, Inc. to serve as an expert for an FDA-mandated hotline for clinicians with questions regarding medical abortion.

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



AMA Pathophysiology of Pain 2005, Melzack Acta Anesth Scand 1999

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

UCSF Fredrickson and Kahneman 1993 and many after

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

UCSF Anderson et al. Racial and Ethnic Disparities in Pain: Causes and Consequences of Unequal Care. J. Pain 2009

Clinician characteristics and acute pain

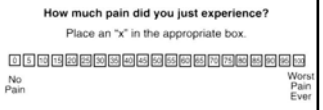
- Physician non-white race associated with significantly better pain treatment in ED[1]
- Provider gender as opposed to patient gender was a factor:
  - Female physicians more likely to administer analgesics than male physicians (66% vs 57%, P = 0.009)[2]

UCSF 1. Heins J. Pain 2010; 2. Safdar Pain Medicine 2009

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



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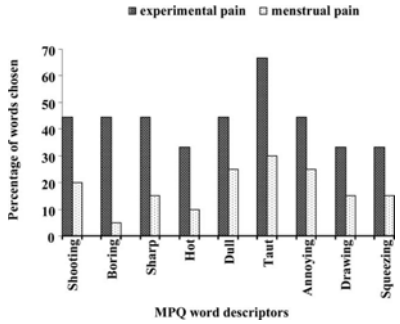
Pain Descriptors and Experimental Cervical Dilation



UCSF Bajaj. Pain 2002, Arendt Eu J Pain 2004

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)**

UCSF Adjusted odds ratios, Hilden et al., Acta Ob G Scand. 2003

Creating rapport is pain control.

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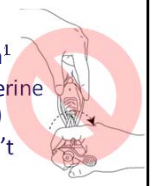
Minimizing Pain with a Speculum: 201



- Ask if they are ready!
- Gel lubrication significantly decreases pain[1]
- 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

UCSF Gungorduk K et al. Eur J ObG and Repro Bio 2015

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

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Language considerations…

Instead of:	**Try:**
• "Relax"	"try taking a deep breath"
	"It's a natural reaction to lift up. See if you can let your hips be heavy on the table."
• You might feel "a pinch" or "a stick and a burn"	"You might feel a sensation" "a twinge"
• "You're doing great"	"I can see you've had practice with relaxation."

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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

UCSF Good resource: https://hiveonline.org/wp-content/uploads/2016/06/Landau-Breakout-Beyond-Compassion.pdf

Strategies for Acute Pain

Multimodal pain management	**Preemptive analgesia**
More than 1 class of meds or analgesic technique	Intervention more effective PRIOR to tissue injury
local anesthetic + NSAID + narcotic + benzodiazepine + **nonpharmacologic strategies**	Increased pain response to subsequent stimulation ("wind-up" or "hyperanalgesia")

UCSF Crews. JAMA 2002

Levels of Sedation

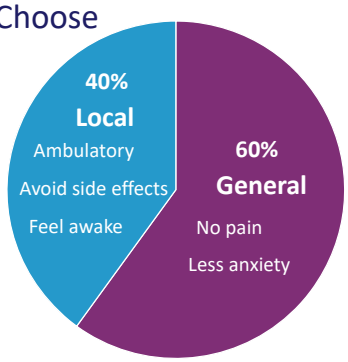
	Minimal Sedation (anxiolysis)	Moderate Sedation	Deep Sedation
Example →	Oral lorazepam and/or hydrocodone	Fentanyl 50-100 mg + midazolam 1-3 mg IV	Add propofol
Responsiveness	Normal response to verbal stimulation	Purposeful response to verbal or tactile stimulation	Purposeful response after repeated 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

UCSF Patient reaction defines level of sedation, not medication dose

Abortion Anesthesia: What Women Choose

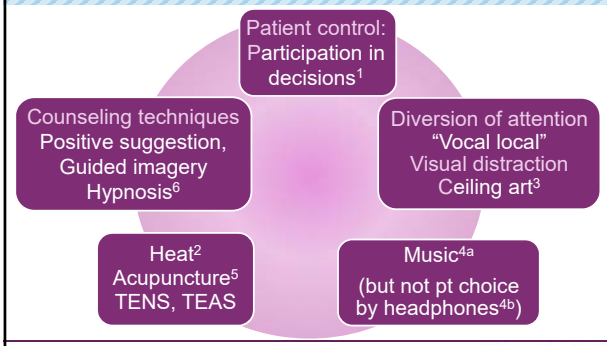
Given the choice of general vs. local ONLY

Nearly all women would prefer no pain (whether awake or asleep) though other preferences vary[2]



UCSF 1.Clark et al. Contraception 2002 2.Allen et al. Contraception 2012

Nonpharmacologic pain management



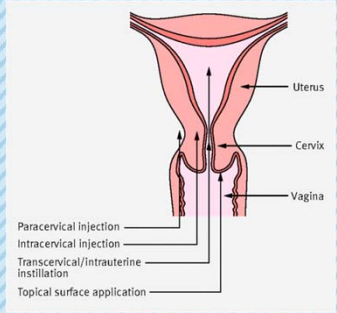
UCSF 2. Atkin ObGyn 2001; 3. Carwile, JLGTD 2014; 4.Cepeda.Cochrane Review 2006 4b. Guerrero Contrac 2012; 5.Kotani Anesth 2001; 6. Famonville. Pain 1997

LOCAL ANESTHESIA

Other specialties 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



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Cervical & Uterine Nerves

Uterine fundus

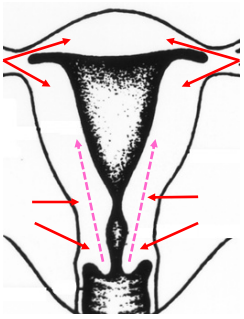
Sympathetic nerves via:

- 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!



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Tingaker. Repro bio & endoc 2006

Variables in LA effect

Bottom Line:

TEST for analgesia before beginning procedure and add more if safe to do

- 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

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Maximum Dosing

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

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

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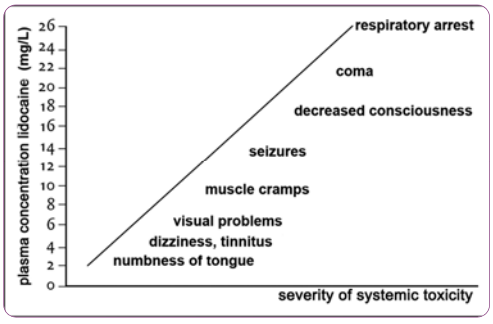
Lidocaine Toxicity & Side Effects



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Carin MA et al. Neoreviews, 2008

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

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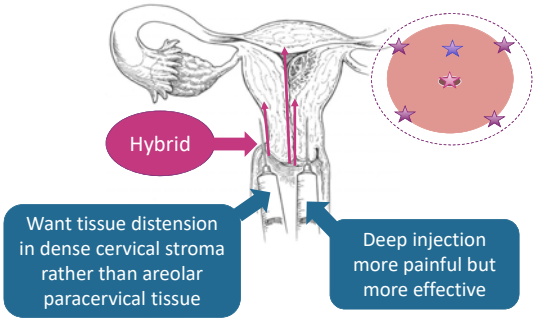
"Paracervical Block"



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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)

UCSF 1 Wiebe Am J Ob Gyn, 1992, 2. Stubblefielf. Int J Gynecol Obstet 1989, 3. Wiebe Int J Gyn Obstet 1995, 4. Wiebe Am J Ob Gyn, 1992, 5. Phair Am J Ob Gyn, 2002, 6. Wiebe Contraception. 2003

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

Larger dose	Add MORE if pt feels *any* pain with dilation. Consider after uterine involution.
Minimize block pain	Buffer. Inject ahead of the needle. Small gauge. Topical gel or spray.
Aim for all nerves	Inject at internal os, uterosacral, fundus if possible
Wait for it to work	RCT's without difference. Obs studies, pharmacokinetics & neurobiology say WAIT

UCSF 1. Cochrane review 2010; 2. Saxena Contracep 2003, Guney Int J Ob Gyn 2007; 3.Waddell J Min Inv Gyn 2008; 4. Cochrane review 2015, 5. Ireland Ob Gyn Surv 2016

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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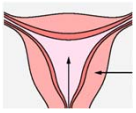
1. Rabin ObGyn 1989 2. Karasahin Contracep 2011 3. Aksoy J Ob Gyn 2015; 4. Aksoy. FP & Repro HC 2014; 5.Maguire Contrac 2012; 6.Allen Contrac 2015

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 Lost IUD Removal Saline Sono	Significant improvement[1,3] 5mL of 2% lidocaine
MUA	Significant improvement 5mL of 4% lidocaine[2]
HSC	Mixed evidence.[4-6++]

UCSF Sys Rev Mercier ObGyn 2012; 1. Guney 2006; 2. Edelman 2006; 3. Guney J Min Inv gyn 2007; 4. Frishman ObGyn 2004, Costello Fert Steril 2002. Isley Contr 2012

INTRAUTERINE PROCEDURES WHICH DO YOU DO?

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

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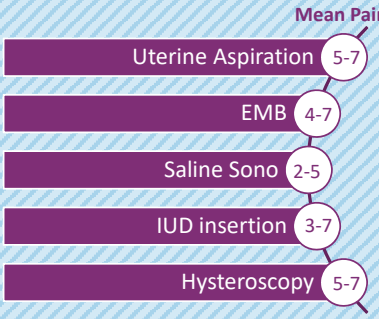
PAIN WITH **INTRAUTERINE** PROCEDURES



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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]

UCSF 1. Cochrane review 2010; 2. Saxena Contracep 2003, Guney Int J Ob Gyn 2007; 3.Waddell J Min Inv Gyn 2008; 4. Cochrane review 2015, 5. Ireland Ob Gyn Surv 2016

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

UCSF Ireland, Allen. Ob & Gyn Sur 2016; AMA Pathophys of Pain 2005

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

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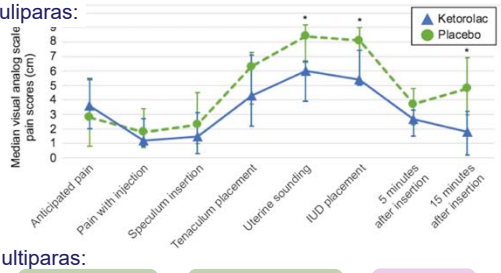
NSAID for IUD insertion

In Nuliparas:



In Multiparas:

Tramadol 50mg 2.3/10 > Naproxen 550mg 2.9/10 > Placebo 4.9/10

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Ngo et al. ObGyn 2015

IUD Types

	Copper	Liletta	Mirena	Kyleena	Skyla
Hormone	none	LNG	LNG	LNG	LNG
Dose	-	52 mg	52 mg	19.5 mg	13.5 mg
Release mcg/d	-	20 10 at 5 yrs	20 10 at 5 yrs	17.5 7.4 at 5 yrs	14 5 at 3 yrs
Years of use	10-12 (FDA 10)	5-7 (FDA 5)	5-7 (FDA 5)	5	3
Special issues	Non-hormonal, heavier bleeding	Generic Mirena, non-profit company	Low systemic, 90% less bleeding	Smaller, little lower dose, less amenorrhea	Smaller, v. low dose, no ovarian change

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IUD Insertion Steps

Preparation
Bimanual
Speculum
Aneseptic
Tenaculum
Sounding
Insertion
Cut strings
Remove inst.
Post-procedure

PAIN

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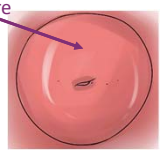
Tenaculum Placement

Inject here

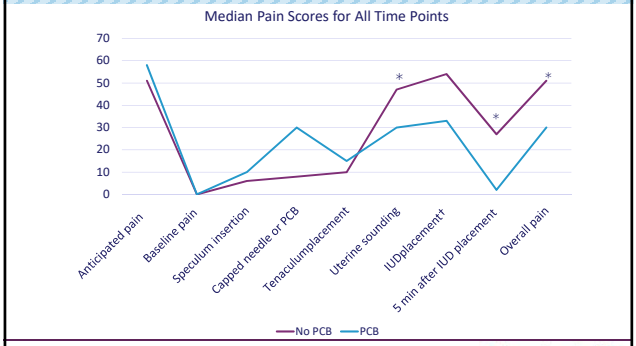


- If you place it, you'll likely USE it
- More stretch receptors than pinpoint
- **Most effective: Intracervical injection**[1]
- Also helpful: Forced cough[2] Spray or gel[3]
- I use **3-5 mL** with **25G needle** and think no one should EVER feel a tenaculum placed.
- 1-2 mm deep (superficial!) and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

UCSF

1. Naki Ob Gyn Invest 2011 & Allen 2013; 2. Bogani Eur J Ob G 2014; 2. Gooldhwaite Contrac 2014; 3. Rabin 1989; Davies 1997; Costello 2005

Block vs. No Block (20 mL 1% lido)
Pain with IUD insertion, nulliparas



UCSF Mody et al. ObGyn 2018

Block vs. No Block (20 mL 1% lido)
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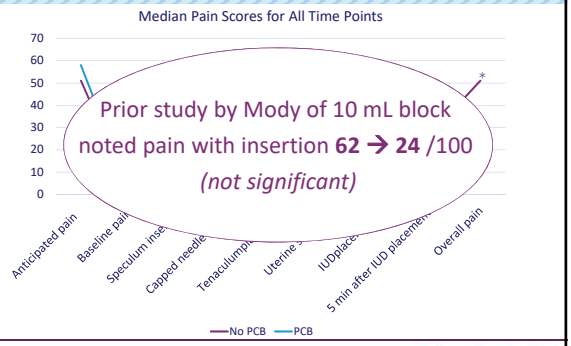


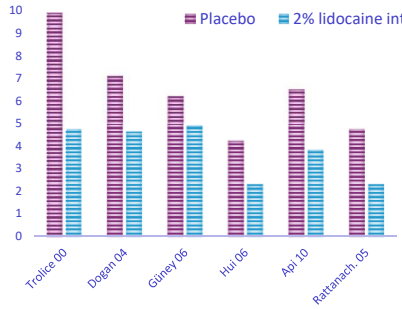
UCSF Mody et al. ObGyn 2018; Mody. Contrac 2012

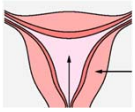
Endometrial Biopsy

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

Dogan et al ObGyn 2004; Somchit et al. J Med Assoc Thai 2015

Intrauterine Lidocaine for EMB
2% 5mL for 3 mins



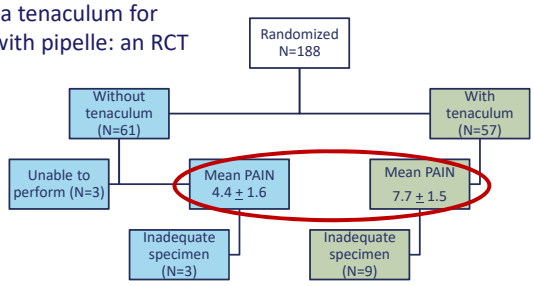


- ❖ No effect on pathology
- ❖ = Paracervical block for EMB

UCSF Kosus M et al. Pain Res Manag, 2014; Mercier RJ et al. Obstet Gynecol, 2012, Ireland et al Obs Gyn Surv 2016

EMB *Without a tenaculum*

Using a tenaculum for EMB with pipelle: an RCT



UCSF Kucukgoz Gulec U et al. Arch Gynecol Obstet, 2014

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

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RCT Oral Meds vs. Moderate Sedation

All:	**PO**		**IV**
Ibuprofen Cervical block 20 mL 1% lido	10 mg oxycodone + 1 mg SL lorazepam	vs.	100 mcg fentanyl + 2 mg midazolam
Intraoperative pain:	**61** /100	vs.	**36** /100
Severe pain (70+):	**46%**	vs.	**15%**

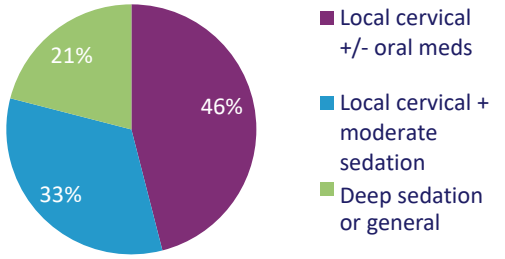
UCSF Allen ObGyn 2009

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

UCSF Allen ObGyn 2009

What U.S. Abortion Providers Use



UCSF O' Connell 2008

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

UCSF Wiebe Contracep 2003; Allen Contracep 2006; Lowenstein Contracep 2006; Bayer ObG 2017

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)

Pain /100	BLOCK early/late	SHAM early/late	
With block	55 49/58	30 24/35	p=.001
Dilation	42 34/51	79 75/83	p<.001
Aspiration	63 58/67	89 88/89	p<.001

- And that it *works* for dilator placement: 54 → 13/100[2]

UCSF Renner. Ob Gyn May 2012; 2. Soon. ObG 2017

Vasopressin in Cervical Block For Uterine Aspiration

- Increases safe amount of local anesthetic
- Prolongs effect of block
- Decreases blood loss (2nd trimester)[1]
- May decrease re-aspiration
- Shown to decrease force for dilation with HSC[2]

UCSF 1. Schulz et al. Lancet 1885; 2. Phillips ObGyn 1997

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

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

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

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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

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IUD Removal with Strings

- No training necessary!
- Most important: offer other form of contraception or preconception discussion

Equipment:
Ring forceps

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

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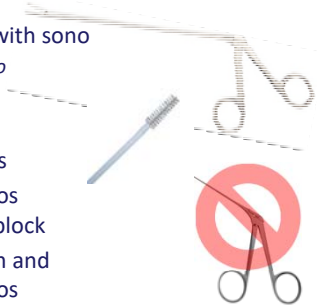
IUD Removal WITHOUT Strings

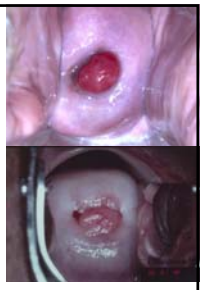
1. Confirm IUD in uterus with sono *(Remember KUB required to confirm IUD is gone)*
2. Try cytobrush in cervix
3. Consent if using forceps
4. Can try below internal os without tenaculum or block
5. Recommend tenaculum and block if above internal os
6. Consider ultrasound



Too thin

UCSF

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

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Colpo and Cervical Biopsy

- Mean pain scores 3.0 and 3.5[1]
- Training necessary (except for gross lesion)

Most effective:

- Superficial 0.5 mL 1% lidocaine with 27G needle[2]
  - Significant pain reduction 4 →1.2/10
  - Pain for injection 1.5/10
- Forced cough also helpful[5]

Likely NOT effective:

- NSAIDs
- Topical anesthetic [3,4,5]

UCSF 1. Church ObGyn 2001, 2. Oyama Am J ObG 2003; 3. Shaughnessy J Fam Pract 1998; 4. Wong BJOG 2008; 5. Ireland Ob Gyn Sur 2016

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

UCSF Carwile, *JLGTD 2014*

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.