



2016 CDA Presents in Anaheim

Local Anesthesia: Tips and Tricks

Bart Johnson, DDS, MS

Friday, May 13, 2016

8–10:30 a.m.

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Local Anesthesia “Tips and Tricks”

Bart Johnson, DDS, MS



Obligatory Joke

- Why did the chicken cross the playground?
- To get to the other slide!



My Goals

- Review practical “tricks” that work
- Give suggestions (“tips”) on how to implement them
- Give rationale for the suggestions



Disclaimer!

- Has anyone here ever used local anesthesia before?
- Thought so...



Golden Rule:



Don't wave that nasty needle in front of your patients!!

...unless you can do this:



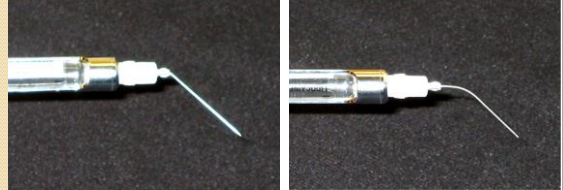
"And now, Dr. Johnson is going to juggle four syringes of Novocain while he simultaneously injects you with a fifth one!"

Needle Notes

Things ya need(le) to know!



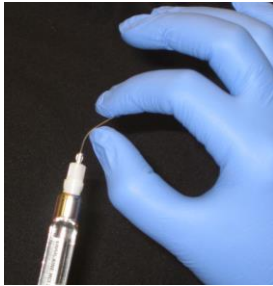
Needle Tips: Bending needles



Wrong

Right

Bend over your thumbnail



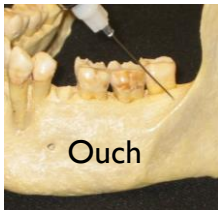
Great for reaching around corners

- IA may hide behind a ridge of bone
- More likely with widely-flared rami



Great to “Scoop” the long buccal

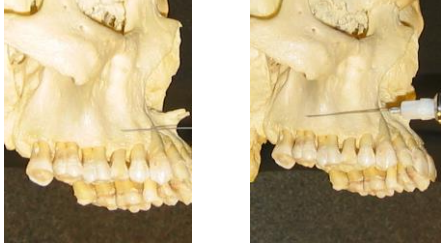
- Most folks go in directly – it hurts!
- Scooping avoids periosteum
- “Lift” the tissue for best results



Standard Infiltrations



Needle Tips: Horizontal Infiltrations



Horizontal Infiltrations

- Start generally around the cuspids
- Work your way back horizontally
- Work your way forward horizontally
- Move around the arch
- Theoretically they only feel the first injection IF you go slowly and give it time!



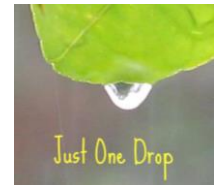
Maxillary Walkover

- Anesthetize the buccal vestibule and give it time
- Next, get the papillae from the buccal
- Then, get the papillae from the palatal
- Finally, give the Incisive or GP
- The secret is TIME!!

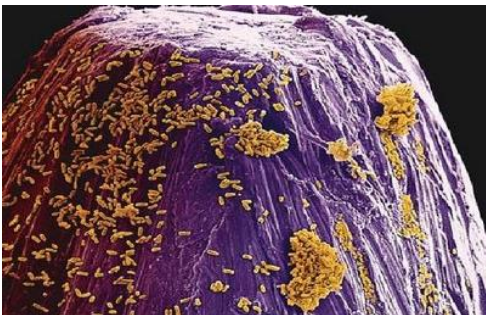


Needle Tips: Fast GP's

- Greater Palatines always hurt
- Pressure/topical helps a wee bit, but not usually enough
- Consider fast "in-drop-out" technique
- Once first drop numbs, give more



Needle Tips: Infected Zones

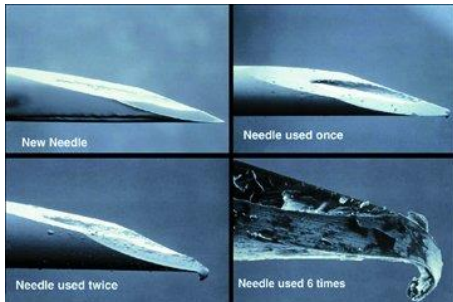


Needle Tips: Infected Zones

- **ALWAYS** assume bacteria / fungus in tissue
- Move from healthy to contaminated
- Once the needle goes into a contaminated area, **NEVER** go back to healthy tissue
 - You may move the
 - microorganisms



Needle Tips: Overuse



The Classic Debate: 27g vs. 25g Needles



Suggestion: Use 25g Needles for block injections



Rationale:

- 25g have more accurate placement
- Less likely to give a false-negative aspiration
- Due to lumen size and rigidity
- *No difference in pain!*

• **Let's look at data:**

Lumen Size:

- Cross sectional comparison:
 - 25g needle: 49.1 μM^2
 - 27g needle: 31.4 μM^2
 - This is a difference of **>50% more!!**
 - **But does it matter??**



Lumen Size:

- 25g, 27g, and 30g needles all aspirate equally in a vial of blood or an arm vessel

- Wittrick and Fischer, JADA 76(1): 79-81, 1968
- Trapp and Davies Anes Prog 27(2): 49-51, 1980

Lumen Size:

- False-negative aspirations appear to be due to vessel wall occlusion
 - More likely with smaller needles
 - More reverse pressure
 - Can enter smaller vessels
- Cooley and Robison, Oral Surg 48:401-4, 1979

Rigidity:

- To deflect the needle 5 degrees:
 - 25g require 24 gms of force
 - 27g require 10 gms of force



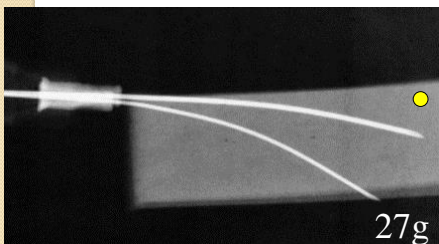
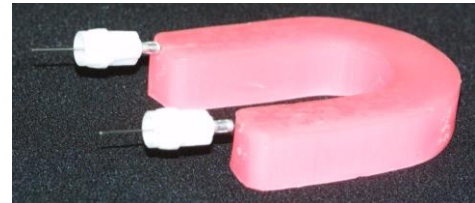
Rigidity:

- Depends on tissue density
- In frankfurters (soft density):
 - 25g deflect 3-5 mm average
 - 27g deflect 4-6 mm average
 - **Not a significant difference**

• Robison et al.: JADA 109(6):920-4, 1984

Demonstration

- Horseshoe baseplate wax (very dense)
- 27g long (yellow) vs. 25 g (red) needles
- Pushed both needles into the wax



Target
25g

27g

Rigidity: Key factors

- Tissue density
 - More fibrosis = more deflection
- Initial insertion speed and force
 - Faster/stronger = more deflection
- Repositioning
 - Lighter needles re-track the same path

“But 25g are **harpoons!**
My patients will hate me!”



Fact:

- They **all** hurt (sigh)
- Patients **CANNOT** tell the difference

- Fuller et al.: JADA 99:822-824, 1979
- Mollen et al.: Gen Dent 29(5) 417-18, 1981
- Brownbill et al.: Anes Prog 34:215-219, 1987



Summary:

- 25g needles are safer and more likely to have their tips where you expect them
- My suggestions:
 - **Insert gently and smoothly**
 - **Swap out those 27g yellows!**

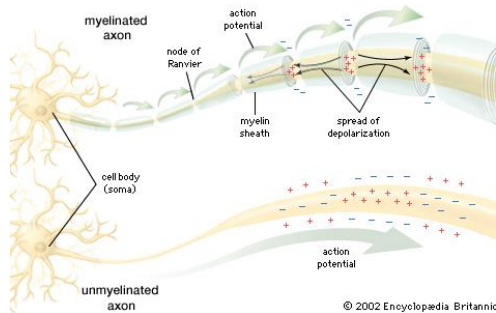


Neural Physiology

I have a lot of nerve to bring this up!



Review of Neural Physiology



The inside of a nerve?



My Kats

- Fudge
- Sundae



Fudge and Sundae

- “Fat Kat Fudge”
 - Totally indoor cat... hates being outside
 - If I throw her out on the porch, she shivers until she can run back in
- “Skinny Sundae”
 - Loves being outdoors, even if snowing
 - Comes in to feed... and use the cat box (sigh)

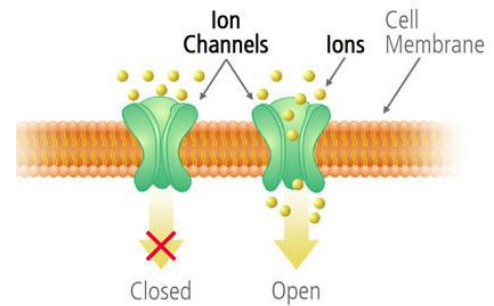


Fudge and Sundae

- The cats emulate neurons...
 - Potassium loves to be inside = Fudge
 - Sodium loves to be outside = Sundae
- Conduction occurs when they shift locations and then rapidly return back to their preferred place
- They need a cat door... an ion channel



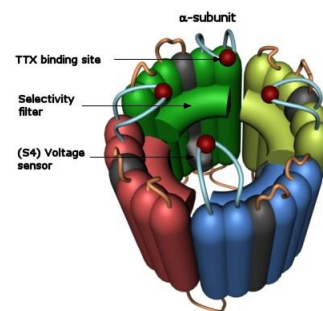
Review of Neural Physiology



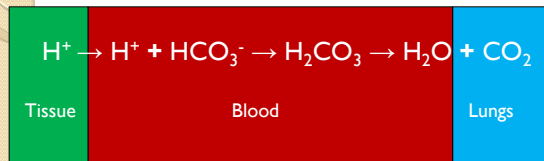
Review of Neural Physiology



Review of Neural Physiology



Systemic Acidosis



So why is acidosis so dangerous?

Systemic Acidosis

- If tissue H^+ builds up, at first it is buffered by the HCO_3^- from the kidneys
- If the buildup is too great, the H^+ finds its way all over the body... enter:

RICKY

Ricky

- Neighborhood male cat
- Beats up on Sundae
- She runs inside and stays inside when he is in the yard
- Disrupts her patterns
- This is like acidosis



Systemic Acidosis

- When you add H^+ , many functions involving Na^+ , Ca^{2+} , Mg^{2+} , etc., are disrupted
- Neural conduction
- Cardiac conduction
- Muscle contraction
- ... and more



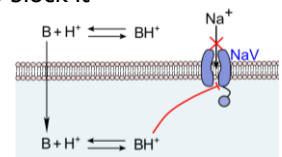
Really Dumb Punch Line

- That's why we call them CATIONS!!!



Why does Inflammation Inhibit LAs?

- Inflammation creates **localized** acid (H^+)
- H^+ ionizes the LA
- Ions do not cross lipid membranes well
- LA cannot enter the nerve to get to the sodium channel to block it



Why does Inflammation Inhibit LAs?

Summary:

- Small amounts of local acid environment inhibits LA movement and disrupts profound numbness
- Large drops in pH (e.g., a DKA) becomes life threatening due to global neural inhibition

Medication Selection



THE MINIMALIST SHOE WARDROBE (Barest of the bare for all possible events)



"Biking" shoes that double as casual shoes



Winter / Walking / Hiking Boots / Dress Shoes
(No really. Dress shoes. He says they're black and that's all he cares about)

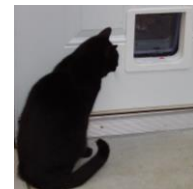


Canadian Winter Boots



Locals are all Na⁺ Channel Blockers

- Keeps Sundae outside... blocks her door
- Stops the cation exchange
- Stops nerve conduction

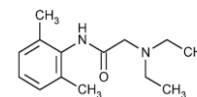


Good Ol' Lidocaine



Lidocaine review:

- Sodium channel blocker
- Good diffusion capacity
- 2% solution = 20 mg/mL
- Comes with 1:100,000 epinephrine
- 1.8 vs. 1.7 mL carpules
 - @ 20 mg/mL = 36 (34) mg lidocaine
 - Epi is 10 mcg/mL = 18 (17) mcg epi

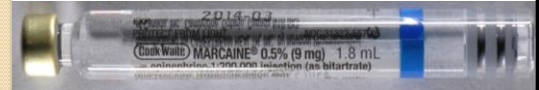


Lidocaine Summary:

- It is our workhorse
- Low risk for adverse reactions
- Can be used for almost all injections
- Keep doses down (discussed later)

we♥it

Long-acting anesthetics

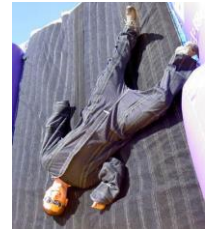


Tip:
Use Bupivacaine only for
block injections



Rationale:

- Bupivacaine is *lipophilic*
 - It absorbs into lipid membranes of the nearby cells, leaving little free drug to wash away



Important!

- *It stays where it is put = long-acting!*
 - This is good if you get it on the nerve
 - This is bad if you think it will diffuse from the injection point to the nerve



(Asterisk):

- This drug **will** eventually diffuse, but it takes a very long time.
 - (Usually longer than you want!!)

SLOWER THAN
MOLASSES...

Long-acting LA Summary:

- Only use long-acting drugs if you can get them to the site of action
- Blocks and intraosseous are best
- Avoid infiltration and Gow-Gates
 - These require diffusion

Short-acting anesthetics



Tip:
Use Mepivacaine plain
for quick procedures



Rationale:

- Many procedures need <20 mins of LA
- Lido/Epi can give several hours of numbness
- Today's patients are busy



Short-acting LA Summary:

- Select your LA for the procedure
- Tell your patients - they will appreciate you!



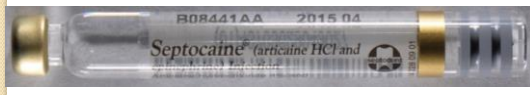
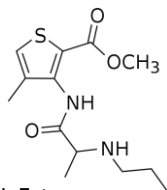
What's with Articaine?



Articaine:

- Facts:

- 4% solution
- Available with 1:100k or 1:200k Epi
- Market share in Canada and Europe
 - Gaining popularity in USA
- Metabolized in plasma



Articaine Legends:



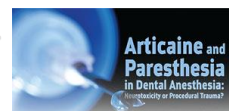
- Better diffusion than Lido
 - Not true; trajectory is the same
 - Articaine is more effective than Lido after mandibular buccal infiltration anesthesia (65% vs. 35%)
 - Kanaa et al., J Endod 2006; 32:296-8
- Likely due to 4% concentration

Articaine Legends:

- Reports of higher success getting numb:
 - No data supports this, all anecdotal
 - Again, likely due to 4% concentration and nothing more

Super Numb

The Dark Side...



Articaine and Nerve Damage:

- Articaine and Prilocaine: **91%** of nerve damage cases
 - Both 4% solutions
 - Haas et al., J Can Dent Assn 61:297-304 1995
- Articaine 20x higher incidence of nerve injuries than *all other local anesthetics combined*
 - Hillerup, Int J Oral Maxillofac Surg 35-437-43, 2006

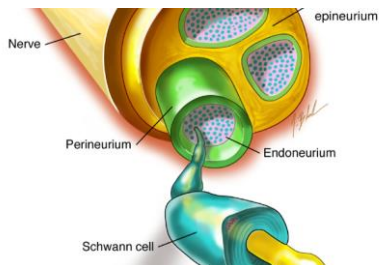
Articaine and Nerve Damage

- Neural injuries increased after it was introduced in Canada
- Proponents note that the absolute numbers are still small, and the vast majority heal without permanent change



Articaine and Nerve Damage

- Usually Lingual nerve
 - Why?



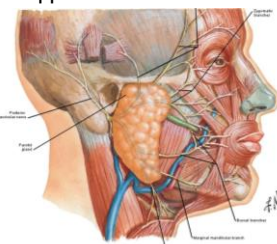
Nerve Damage

- Concentration dependent
 - Almost none at < 2.5%
- Epineurium injections = no injury
- Peri-/Endoneurium injections = severe injury
 - Hadzic et al., Reg Anesth Pain Med 29:417-23, 2004
 - Selander et al., Acta Anaesth Scand 23:127-136, 1979
- Lingual nerve is most vulnerable
 - Often only one fascicle



WA State Lawsuit

- Facial NN permanent paralysis after articaine injection
 - What might have happened?



So what does all this mean?

- Great drug, works nicely!
- 4% solution is a lot
 - Use half volumes: 1 carpule = 2 carpules of lidocaine
 - Inject slowly
- *Where you use it is important*

Articaine Summary:

- I suggest no block injections
 - Infiltrate only in places away from major nerves
 - Damage cannot happen
 - Legally more defensible if disaster does strike
 - Select alternates (e.g., Lido or Bupiv) instead



Cool Articaine Trick

- For mandibular anterior anesthesia:
 - Inject near mental foramen with 30 g needle
 - Do not go into foramen with Articaine!
 - Make a bubble of anesthetic under the tissues
 - Use your thumb or finger to gently press it into the mental foramen



Another Cool Articaine Trick

- Put a tiny amount just under the tissue where your IA insertion will be
- Wait 30 seconds then do your IA/Lingual
- Much happier patients!

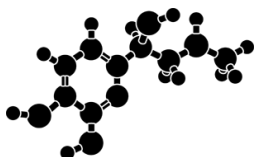


Still Another Cool Articaine Trick!

- Give up doing PSAs
- No longer necessary with its diffusion
- Infiltrate over the tooth of interest!



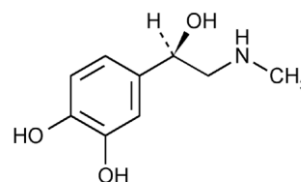
Let's talk about Epi



I'm excited.

Epinephrine

- Alpha and Beta agonist
- Fight/Flight/Fright sympathomimetic



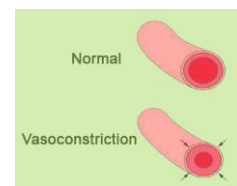
Alpha and Beta Receptors

- Alphas
 - Peripherally constrict
 - Brings blood to central circulation
 - Constricts nasal membranes
 - Better air flow
- Betas
 - Increase cardiac output
 - Stroke volume and rate
 - Increases skeletal muscle blood supply
 - Run and/or fight



Epi as a Vasoconstrictor

- Locally placed
- Vasoconstricts around the nerve
- Slows washout and vascular uptake of the drug
- Increases duration



Epinephrine

- How much is in a carpule?
- When is it okay to use in Cardiac patients?
- What about preservatives?
 - Methylparabens
 - Sulfites



Diphenhydramine

As an Anesthetic Agent



Diphenhydramine:

- Weak local anesthetic
- Good only for block injections
- Works “so-so”
- Consider for LA “allergic” patients
 - (but low on list)



EMLA/Oraqix



Eutectic Mixture of Local Anesthetic
2.5% Lidocaine / 2.5% Prilocaine

Oraqix

- Intended for periodontal scaling
 - Also good for retraction cords
- Solution at RT, gel at body temperature
- **DO NOT INJECT!** Will embolize



Oraqix

- How to use (easy!):
 - Place around gingival margin first
 - Wait 30 seconds
 - Inject deeply into sulcus
 - Wait another 30 seconds
- May have to re-inject in 10-15 minutes, so pace your placement with your progress



Oraqix

- Rather expensive (\$5/use)
- Onset 30 seconds, lasts 10-20 minutes
- Great for hygienists and needle phobics



Phentolamine

A new Reversal Agent?



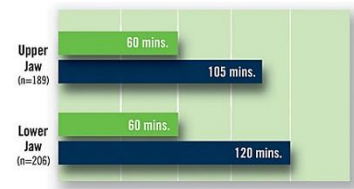
Reversal Agent

- Phentolamine Mesylate
- Alpha antagonist = vasodilation
 - “Washes away the drug”



Reversal Agent

- Cuts recovery time by about half
 - Mandible: median 70 vs. 155 mins
 - Maxilla: median 50 vs. 132 mins



Reversal Agent

- Suggested to inject after prepping and while filling/ impressions
 - Adults: 0.4-0.8 mg (1-2 carpules)
 - Children: 0.2-0.4 mg (0.5-1 carpule)
- “Boutique drug”

Reversal Agent

- Best **not** to use in cardiovascular disease patients
 - Orthostatic hypotension / dizziness (6%)
 - Bradycardia (4%)
 - Tachycardia (6%)

A Reversal Agent for Naturalists:

- Exercise!



Ideas for all of your local anesthesia patients:

Dosage selection

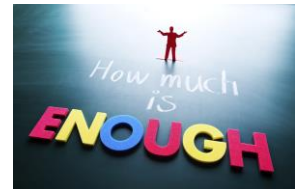


Tip:
Use less,
Question early



Rationale:

- Maxillary infiltrative anesthesia is usually profound with $\frac{1}{3}$ - $\frac{1}{2}$ carpule
 - I take wisdom teeth out with this much
- Greater palatine injections require a few drops only ($<\frac{1}{4}$ carpule)



Rationale:

- Mandibular anesthesia generally will need 1 full carpule - **but no more** - to get:
 - IA
 - Lingual
 - LB
 - and (if needed) myelohyoid



Rationale:

- Less anesthetic = less likelihood of toxic reactions, quicker recoveries
- (NOTE: It is **okay** to use full carpules when you need to, just think about it!!)

Local Anesthesia Overdose

- Typically seizures or other central brain differences
- Hyperactive phase
 - Agitation, confusion, flushing, tremors, increased cardiac output, respiration and B/P
- Hypoactive phase
 - Disorientation, drowsiness, seizures

Maximum Doses

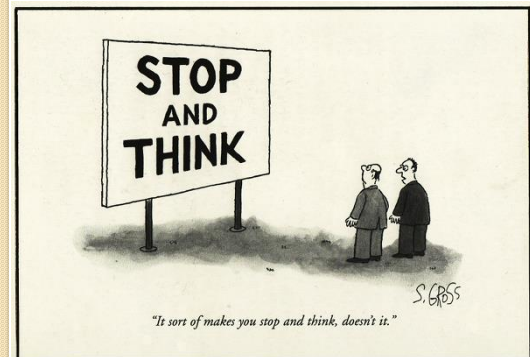
- Note: No solid consensus in the literature! These are my best guidelines.

Drug	mg/Kg	Total Dose (mg)	Carpules
2% Lidocaine plain	4.4	300	8
2% Lidocaine with Epi 1:100K	7.0	500	14
3% Mepivacaine plain	6.6	400	7
0.5% Bupivacaine with Epi 1:200K	1.3	90	10
4% Articaine with Epi 1:100K	7.0	500	7

Use mg/Kg until total dose reached

Bart's Suggestions:

- Full mouth anesthesia: 4-5 carpules **MAXIMUM** is the fun goal
- *Think* if you are getting over 6 carpules
- Two attempts at IA, then stop
- Not numb? Ask questions!



Pregnancy Risk Categories

A	B	C
(None)	Lidocaine	Articaine
	Prilocaine	Bupivacaine
	Diphenhydramine	Mepivacaine



(Diagnosing anesthesia failures will be discussed soon)

- Ideas for all of your local anesthesia patients:

Administration techniques

Expert

Tip:
Pierce quickly,
Inject slowly,
Hurt less!

Rationale:

- Carpules have 1.7 - 1.8 mL of fluid
- This is a lot of medication
 - Flu shots are 0.5 mL
 - Most shots in your arm are <1.0 mL

150%

Rationale:

- It **HURTS** to have that much fluid put in quickly!!
 - (i.e., No slammin'!)
- And... it is more dangerous if your needle tip is in a vessel or nerve



Summary:

- Pierce quickly, inject slowly, be safe, be NICE!
- Tell your patients what you are doing and why (need to score your points!)

**IT'S
NICE
TO
BE
NICE**

*The Exception

- Greater palatines... They hurt!!
- My trick (wink wink nudge nudge)



Tip:
Remember the
“3D” nature of
Topical Anesthetics



**Desiccate
Dab
Duration**

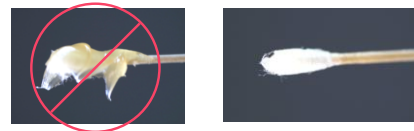
Rationale:

- Desiccate: Applying drug to wet tissue dilutes the amount contacting cells.
- Reduce amount necessary by drying the tissue first.



Rationale:

- Dab: Benzocaine can be toxic to children: Methemoglobinemia
- In molecular terms, a thin coat is plenty



Rationale:

- Duration:
 - Any topical medication requires time to enter the cells.
 - Give it at least 1-3 minutes to work, or do not bother



“3D” Summary:

- Use a very thin coat, and no more.
- Place topical as soon as possible, so that by the time you are ready to inject, several minutes have passed.
- **You need time, not amount, to achieve effect.**

Ideas for all of your local anesthesia patients:

Medical history
“Red Flags”

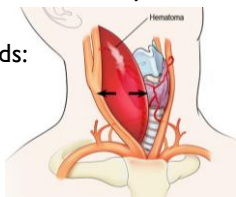
Hemorrhagic risk

- Hemophilics (A, B, others)
- Von Willibrands' disease
- Heavily anticoagulated
 - $PT_{INR} > 3.0-3.5$
- Platelet dysfunction
 - Low numbers
 - Poorly functional



Avoid block injections

- Risk inadvertent arterial **and/or** muscle bleed
- May give dissecting hematoma
- Rarely can compromise the airway
- Use alternate methods:
 - Infiltration
 - Intraosseous
 - PDL
 - Sedation/GA



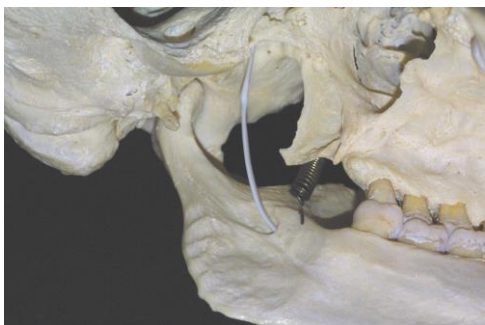
Dissecting Hematoma

- Where will it go?
 - Superior?
 - Inferior?
 - Lateral?
 - Medial?
 - Anterior?
 - Posterior?



(Let's look at Numbskull)

Numbskull



“My Patient isn't numb”



“WHY?!”

Don't just inject a zillion more carpules!!)

why?
why?
why?
why?

Questions:

- Physiologic differences?
 - Anatomic variation
 - Landmarks hard to find
 - Location of usual nerves
 - Innervation by unusual nerves
- Rapid metabolism or uptake



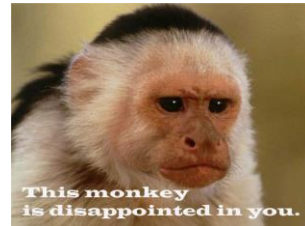
Questions:

- Psychologic influences?
 - Fear
 - Hypochondria



Questions:

- Operator error
 - Am I a bumbling, ten-thumbed idiot today?



Physiologic differences:

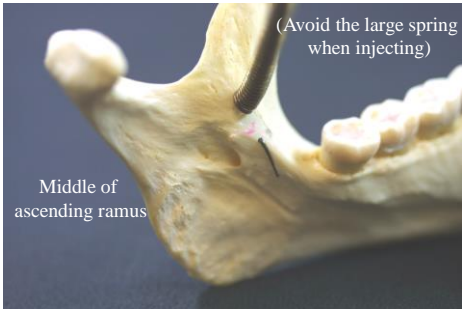
Anatomic variation

Where is the nerve?

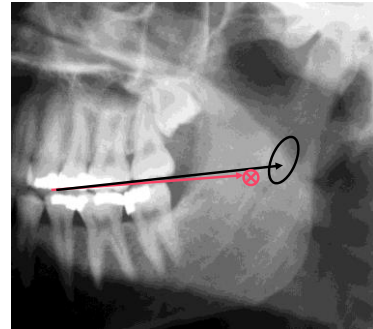
- Occurs most commonly with IA
- Typically, nerve will be more posterior and/or more superior
- Panoramic radiographs can help you determine this



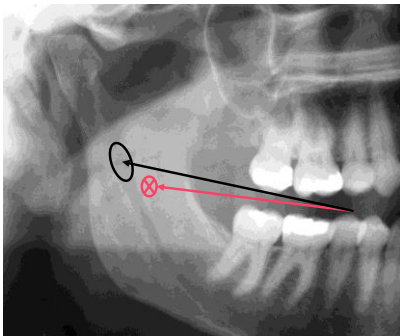
Typical location



Posterior nerve

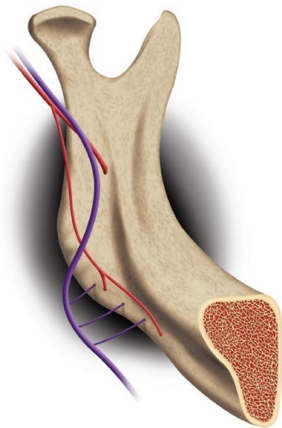


Superior-Posterior nerve

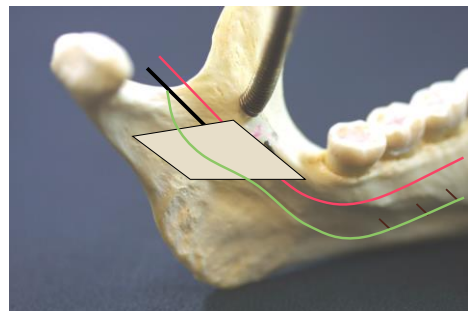


Myelohyoid Nerve

- Branch of V3
- Sometimes responsible for accessory innervation in mandibular molars
- *Think of this if your patient normally gets numb in all areas except the lower molars*



Myelohyoid nerve



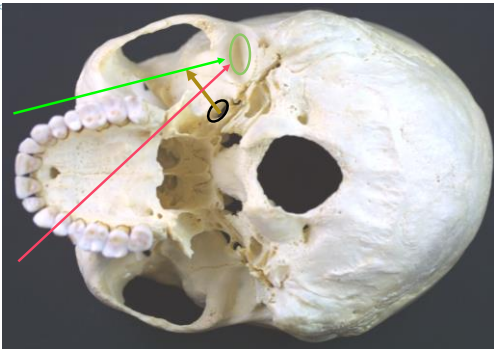
LA of the Myelohyoid

- Gow Gates/Akinosi
- Floor of mouth injection
- Intraosseous anesthesia



Review of the Gow-Gates and Akinosi approaches

Base of Skull anatomy



Gow Gates Approach



Gow Gates



Gow Gates



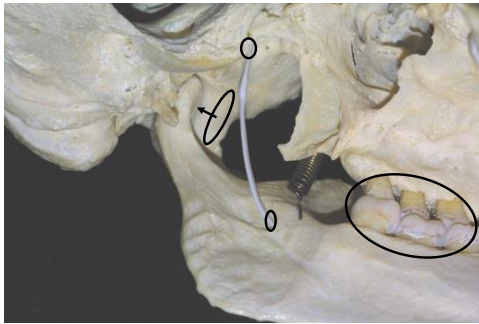
Gow Gates



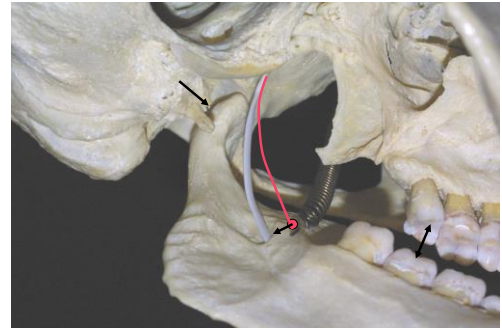
Akinosi Approach



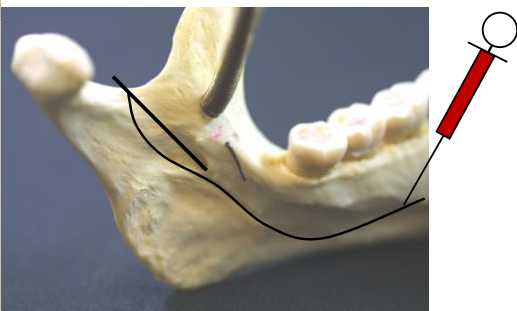
Gow Gates/Akinosi-Closed



GG/Akinosi-Wide Open



Myelohyoid via Floor of mouth



Physiologic differences:

Rapid Uptake/
Rapid metabolism

Rapid uptake/metabolism

- The patient *does* become numb
- However, it does not last
- Causes:
 - Fear
 - Hyperdynamic state
 - Idiopathic

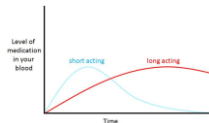


Rapid uptake/metabolism

- If fear, address underlying concerns
- Hyperdynamic states require medical consultation
- Idiopathic reasons: accept and work around it

Rapid uptake/metabolism

- Suggestions:
 - Long acting anesthetics(!)
 - Deposit as blocks
 - Consider benzodiazepines
 - Involve your patient in the decision process
 - Tremendous in assisting success



Physiologic differences:

Hot spots
Hot teeth



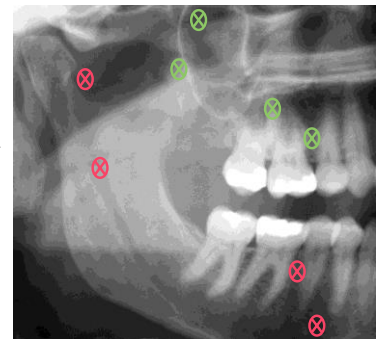
Hot spots/Hot teeth

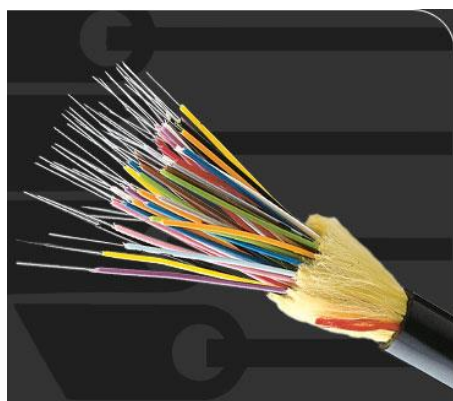
- Generally due to inflammation
- Clinical numbness is evident, yet the tooth (all or part) remains alive



Hot spots/Hot teeth

- Best trick is multiple areas of anesthesia on same nerve





Hot spots/Hot teeth

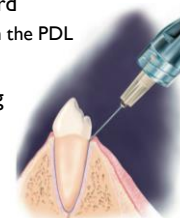
- Consider sedation
- PO/SL may work; may need IV
- Benzodiazepines +/- narcotics
- Choose benzo's with good amnestic effect
 - Midazolam/Triazolam



Advanced Techniques

PDL Injections

- Excellent to augment blocks
- Method:
 - Start with papilla injection
 - Wedge needle and push hard
 - If it flows easily, you are not in the PDL
 - Inject for several seconds
 - May have trouble dislodging the needle!



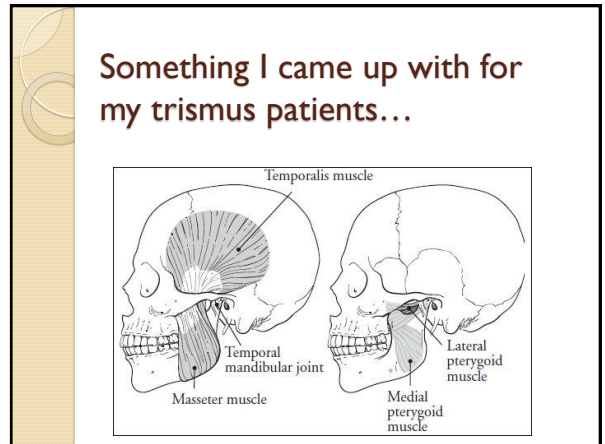
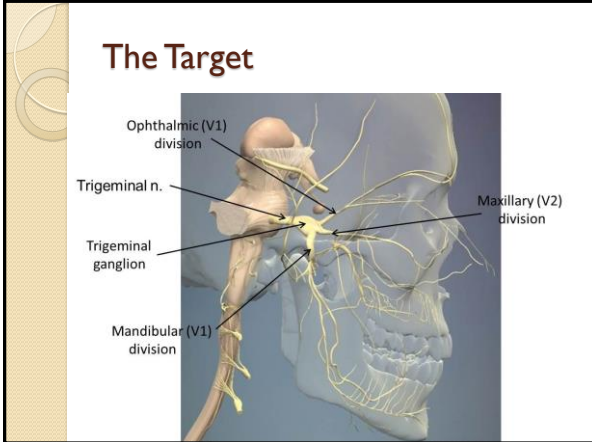
PDL Injections

- Equipment
- Normal syringe and 30G needle
- Ligajet
- The Wand



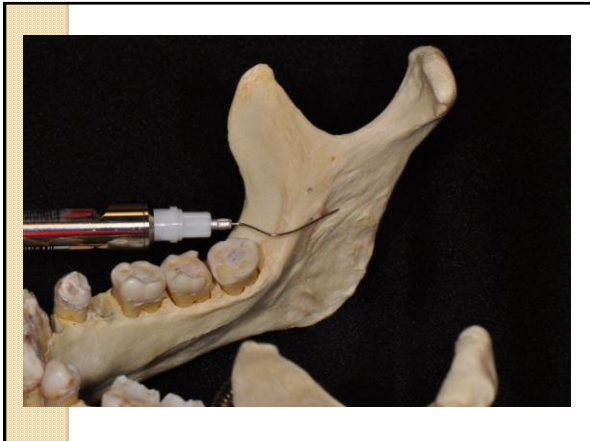
V2 Division Block

- Technique sensitive
- Best for infections
- High PSA or GP canal approaches
- Use short needle to avoid anesthetizing the eye
- Suggest SMALL amounts of bupivacaine!



“Bartkinosi” approach

- Works well for limited-opening/trismus cases
- Place an “S” curve in the 25 G long and aim for the usual IAN site... but from the buccal!



And now, for something completely different....



Nasal Mist Maxillary Anesthesia

- St. Renatus, LLC passed FDA Phase 3 studies in late 2013
 - Named from the patron saint of anesthesia
- Designed to anesthetize “most upper teeth” for routine restorative dental needs



What is it?

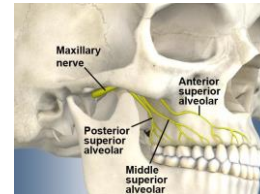
- Intranasal 3% Tetracaine plus 0.05% Oxymetazoline
 - Tetracaine is an ester topical local anesthetic
 - Oxymetazoline is a nasal vasoconstrictor
 - In the studies each dose is 0.1 mL per nostril x3 (total 6 sprays)

Ingredient	Formulation (% w/v)
Tetracaine hydrochloride, USP	3.00
Oxymetazoline hydrochloride, USP	0.05
Citric acid anhydrous, USP	1.00
Sodium hydroxide, NF	q.s.
Benzyl alcohol, NF	0.90
Hydrochloric acid, NF	q.s.
Hydroxyethylcellulose, NF (5000 cps)	0.05
Purified water, USP	q.s. to 100%



Preliminary Data Shows:

- Profound local anesthesia of ASA and MSA
- Effective to the second premolars
- First molars were less predictable due to dual innervation from the PSA



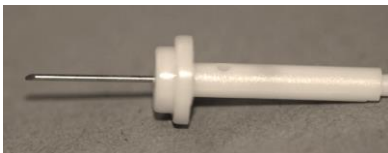
Considerations

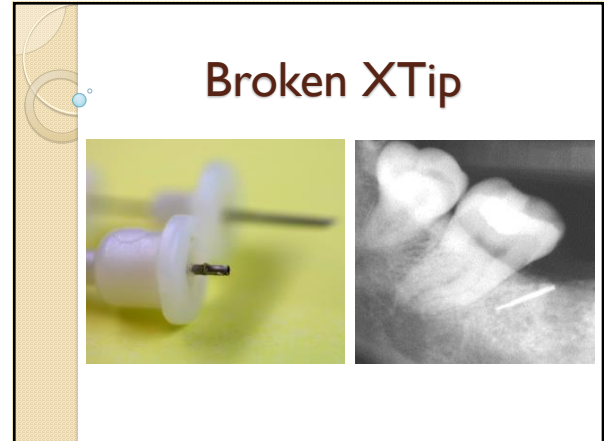
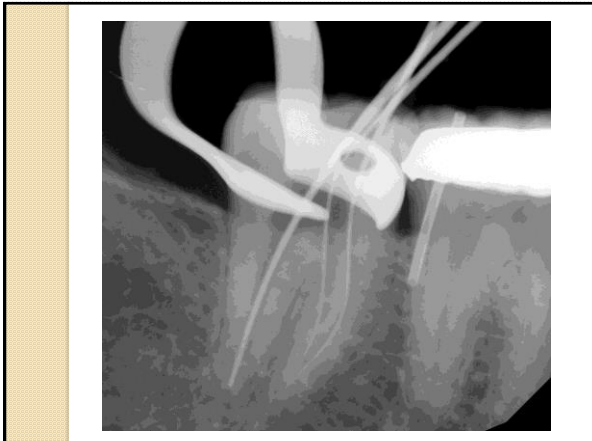
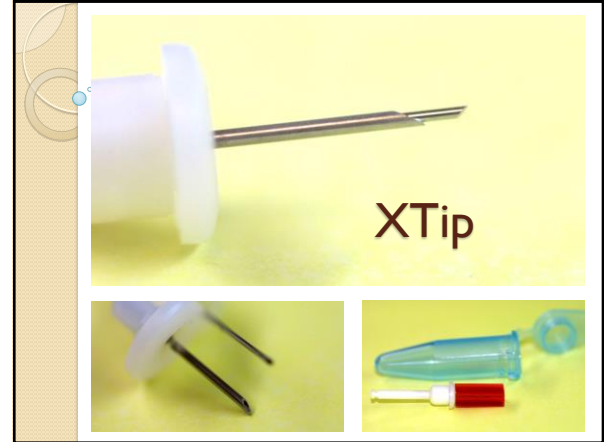
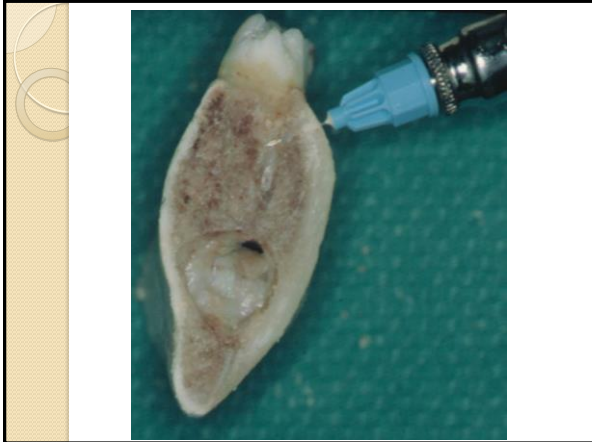
- Tetracaine is very short acting
 - Overzealous use can lead to classic LA overdose reactions
- Contraindicated in patients with hyperthyroidism
 - Severe hypertension
 - B/P rises 70-80 mins after administration
- Proposed max recommended doses:
 - 18 mg Tetracaine
 - 0.3 mg Oxymetazoline

Toys



Stabident





CompuDent® "Wand®"

- Introduced in 1997
- Computer-controlled local anesthetic delivery (C-CLAD™)
 - Steady speed of injection



CompuDent® "Wand®"

- Uses tiny needle
- Works well
- Expensive



NumBee®

- PDL Injection system
- “Needleless”
- Targeted tooth anesthesia
- Onset 60 seconds, lasts 30-45 minutes
- Delivers an “infiltration” of anesthetic, not an “injection”



Soooo... what if...?



The anatomy looks good,
I'm not an idiot today,
I've tried different things,
My patient is still
not numb!



Stop! Give up!
(It's okay!!)
They are **phobic**
-or-
“**OFOTHI**”



Phobics



Talk to them!

- Some appreciate frank discussion
- Others are in denial
- Use your best judgment how to approach the discussion



Tricks n' tips

- I try not to tell them “You are numb”
 - Physiologically yes
 - Psychologically no
 - They won't believe me
- What works for me?

- “I've given you sufficient medication that should have numbed you.
- Obviously, that has not worked, and I'm sorry you are still feeling something.
- You are not alone... some patients simply have this happen.



- Some people feel deep pressure as pain (which won't go away with my anesthetics), or you have a twig coming in from somewhere unusual, or your worries are successfully overriding my medications.
- The best way to handle this is to numb up your brain... let's discuss sedation or GA.
- Don't worry... we always win sooner or later, and I will get you comfortable”

OFOTHI'S



“Good Luck”

- Some just want you to listen to their woes
 - Build trust, then work with them
 - Stay neutral; don't play into their troubles
- Others are “obstacle builders”



“Good Luck”

- Ultimately, I use BLUNT honesty
 - “I can do this”
 - “I cannot do that”
 - “Whaddaya think?”
- (Reminds me of parenting!)

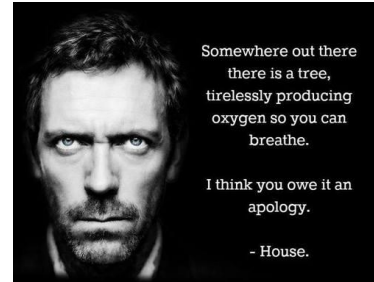
“I'd rather be honest than impressive.”

OFOTHI's

- Sometimes, the best decision is to QUICKLY agree to disagree and disband the relationship
- “Weed your dental garden”

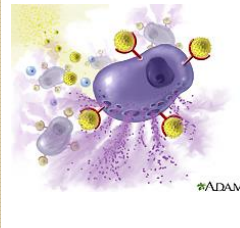


You know a bad OFOTHI when you think this...



Our last Local Anesthesia topic

I'm allergic to "caines"



Local Anesthetic "Allergy"

- Usually "I'm allergic to all -caines"
 - Novocain
 - Lidocaine
 - Bupivacaine
 - Candy cane
 - Sugar cane
 - Walking cane
 - Michael Caine
 - Citizen Kane
 - Mutinous Caine
 - Etc.



Local Anesthetic "Allergy"

- In reality, probably not true allergy
 - Only a few in the literature
 - I have one possibly true case in my practice... after 30 years!
- More likely an expression of an adverse response
- Query your patient as to what happened

Local Anesthetic “Allergy”

- Catecholamine reactions:
 - Tachycardia
 - Palpitations
 - Diaphoresis
 - Possible “rash” from vasodilation



Local Anesthetic “Allergy”

- Acute anxiety reactions
 - Tachycardia
 - Palpitations
 - Diaphoresis
 - Possible “rash” from vasodilation
 - Hyperventilation
 - Feeling of can't catch breath



Local Anesthetic “Allergy”

- What can you do?
 - Discuss the issues with the patient
 - Was the reaction a true allergy?
 - A side effect instead?
 - Mild vs. Life threatening?
 - Often this is sufficient



Local Anesthetic “Allergy”

- Consider sending for allergy testing
 - Test several LAs
 - Invariably negative to most or all
 - Many “obstacle builders” disappear at this point

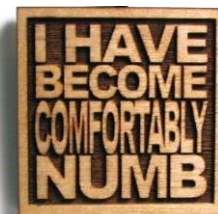


Local Anesthetic “Allergy”

- What else can you do?
 - Utilize sedation (Oral/N₂O, IV)
 - Utilize GA
 - +/- Diphenhydramine blocks
 - I tell them that when their brain is numb, they don't react as strongly to the LA
 - (It's kinda true!)



THANK YOU!
... and good luck! I hope your patients will easily say this: (!)



Are *your* brains numb??



"Mr. Osborne, may I be excused? My brain is full!"

Questions?

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THANK YOU!