Goals of Activity

- Discuss indications and contraindications of digital blocks
- Discuss anatomy of hands and feet
- Materials needed
- Types of anesthesia
- Demonstrate 6 types of blocks
Introduction

- Anesthesia injected into base of toe or finger
- Extreme sensitivity to palmer surface so local anesthesia may be unsuccessful/too painful
- Less painful and provide more pain relief
- Goal is bath tissue surrounding the nerve
  - Not to inject directly into the nerve
Indications

- Lacerations
- Nail bed injuries
- Paraonychia
- Felon
- Nail avulsions
- Foreign body removal
- Dislocations
Indications

- Anything that causes Pain!!
Contraindications

- Allergy to anesthesia
- Compromised circulation of the digit
- Infection at the site where the needle will pass
Cautions for the Procedure

- Avoid epinephrine, this can cause ischemia to the tissue
- Use small volumes to avoid mechanical pressure to the blood vessels and nerves
- Avoid injecting directly into the nerves
- Avoid a prolonged tourniquets
BASIC HAND AND FOOT ANATOMY
Anesthesia

- Inhibits nerve conduction
- Most common choices:
  - Lidocaine without epi
  - Bupviocaine (Marcaine)
  - procaine can be used
- Use of epi, not recommended, it causes vasocaontraion of blood vessels which increases chance of ischemia
  - This is controversial and some say it can be used, but good rule of thumb to not put yourself at risk if you do not have to
Lidocaine and Procaine

- **Lidocaine**
  - Last 30-40, can last 2-3 hours, usually use 1%, without epi
  - Onset 2-5 minutes

- **Procaine**
  - Lasts 15-45 minutes
  - Onset 2-5 minutes
Bupivacaine

- Usually lasts 4-6 hours
- Can last 8 hours
- Dose 0.25% or 0.5%
- Onset 2-5 minutes, closer to 5
Things to Consider/Pearls

- Use higher concentration
  - You need less volume
  - This decrease pain to patient
  - Decreases pressure to surrounding sutures
- Time frame, usually 5 minutes, but can vary, sometimes 10-15 minutes
- Can use a mix of fast onset/short acting with longer acting (lido with marcaine)
Tips to Reduce Patient Pain

- Be Honest!
- Use a small needle, 27g or smaller
- Inject slowly into the tissue
- Buffer solution with sodium bicarbonate, increase pH
  - Lidocaine pH is 5-7, buffering raises this to 7-7.2
Tips to Reduce Patient’s Pain

- Warm solution to body temp
- Use a topical cream first
  - example lidocaine/prilocaine cream
  - Problem it has to be applied well in advance
    - usually 1 hour
- Procedure is painful but should not cause extreme pain
  - If the case you may be in the nerve or next to nerve
  - Withdraw slightly 2-3mm then inject
Risks of Procedure

- Most common: bleeding at site of injection, infection, pain
- Damage to nerve causing distal paresthesia to the digit
- Can cause a vasospasm which can infarct the tissue
- Patient can have vasovagal syncope, always have them laying down
Risks

- Tenosynovitis
MATERIALS
Steps for the Procedure

- Indication for block
- Obtain Consent
- Perform a Neuro Vascular Exam on Digit(s)
- Credentialed?
Procedure Steps

- Clean the Skin
  - Betadine
  - Alcohol
  - Clorohexadine
- Inject Anesthesia
- Dressing over site
- Perform neuro exam before next intervention
Procedure Demostration

- 6 Types of Digital Blocks
  - Traditional (Web Space)
  - Transthecal
  - Subcutaneous Block
  - Three sided toe block/4 sided (Ring Block)
  - Four sided ring block
  - Unilateral block
NEURO VASCULAR EXAM AND PROCEDURE DEMONSTRATION
Chart Documentation

- Explain Indication
- Informed Consent
- What Type of Block was Used
- Steps for the procedure
- Was it Successful?
- Was it tolerated Well?
- Any immediate Complications?