Guidelines for Anticoagulation and Anesthesia for Breast Interventions
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What type of anesthesia do you use for 14g bx?
A) Xylocaine 1%
B) Xylocaine 1% with epinephrine
C) Bupivicaine (Marcaine, Sensorcaine)
D) combination of a, b, c
E) none
F) I do not perform 14 g core biopsies

What type of anesthesia do you use for VAB?
A) Xylocaine 1%
B) Xylocaine 1% with epinephrine
C) Bupivicaine (Marcaine, Sensorcaine)
D) combination of a, b, c
E) none
F) I do not perform vacuum assisted biopsies

With regards to patients on anticoagulation- do you stop meds prior to bx?
A) yes, I stop all medications prior to any biopsy (FNA, CNB, VAB)
B) yes, I stop Anticoagulation prior to VAB only
C) yes, I stop all medications prior to 14 g bx or higher
D) I do not stop Anticoagulation prior to bx

Which is INCORRECT with regards to duration of anesthesia?
A) Xylocaine 1%- 2-6 hours
B) Xylocaine with epi- 2-6 hours
C) Bupivicaine (Marcaine)- 2-4 hours

What is the maximum adult dose of Xylocaine 1% by volume?
A) 5 mL
B) 10 mL
C) 15 mL
D) 20 mL
E) 30 mL
Clinically significant complications occur routinely after breast biopsy performed while on anticoagulation.

A) True
B) False

Regarding the antiplatelet activity of aspirin which is correct?

A) reversible inactivation of cyclooxygenase thereby decreasing Thromboxane A2 and prostaglandin H2
B) irreversible inactivation of cyclooxygenase thereby decreasing Thromboxane A2 and prostaglandin H2
C) reversible inactivation of cyclooxygenase thereby increasing Thromboxane A2 and Prostaglandin H2
D) reversible inactivation of cyclooxygenase thereby increasing Thromboxane A2 and Prostaglandin H2

Overview
- Anesthesia guideline
- Adverse effects
- Anticoagulation guidelines

Needle sizes
- FNA/ hookwire -20g or smaller
- CNB- 18g or higher-14 g typical for ultrasound guided core bx
- VAB- 12 g or higher-typically 10-11 g

Anesthesia
- Local anesthesia is performed during image guided interventions to minimize the discomfort felt by the patient during the test.
- Several factors contribute to the severity of pain during an interventional procedure: location of bx site, emotional factors, coping skills.
Pain Survey- JDMI

- Patients undergoing breast biopsies are asked to participate
- Prior to procedure, asked about average breast pain over the last few weeks
- After procedure, radiologist and patient fill out questionnaire

Radiologist questionnaire

- Difficulty level of biopsy
- RDC patient
- Pre-scheduled vs add-on biopsy

Patient questionnaire

- First breast biopsy?
- Pain during procedure? (0-10)
- Location of worst pain during procedure
- Current pain (0-10)
- Weight/ height

JDMI Pain Survey

- ~100 responses so far
- Awaiting preliminary results
- Results may alter or reinforce current guidelines

Drugs and Dosage

- Lowest dosage that results in effective anesthesia should be utilized.
- At JDMI- the maximum dose per patient has been set at 25mL for Xylocaine and Xylocaine with epinephrine (for all bx sites)
FNA

- Patient should be offered local anesthesia
- Verbal consent
- 2-5 mL Xylocaine 1%

CNB

- 1-2 mL Xylocaine 1% without epinephrine in subdermal location
- Additional 2-5 mL of Xylocaine 1% with or without epinephrine may be injected inside the breast in the region of biopsy
- If patient experiences discomfort, additional anesthesia may be given up to max of 25 mL

VAB

- 2-5 mL Xylocaine 1% subdermal injection
- Additional 5 mL Xylocaine with epinephrine injected into the breast at site of biopsy if not contraindicated.
- Max total dose 25 mL

Duration of anesthesia

- Xylocaine- 0.5-1h
- Xylocaine with epinephrine- 2-6h
- Bupivacaine 0.25% without epinephrine- 2-4h

Mechanism of action

- Reversibly block nerve conduction near site of administration producing temporary loss of sensation
- Nerve impulse conduction is blocked by a decrease in nerve cell membrane permeability to Na+ resulting in decreased depolarization and increased excitability threshold that prevents the nerve action potential from forming

Allergies

- Lidocaine allergies may be in fact allergy to the preservative methylparaben.
- Preservative free lidocaine can be obtained.
- Xylocaine with epi contain sodium metabisulfite, which can cause reactions. Sulfite sensitivity more frequently seen in asthmatics.
Adverse effects

- Usually caused by high plasma concentrations that result from inadvertent intravascular injection, excessive dose, delayed drug clearance
- CNS: CNS stimulation (incl seizures) followed by CNS depression (incl respiratory arrest)

CVS
- Depress the heart and may result in bradycardia, arrhythmias, hypotension, CV collapse, cardiac arrest
- Local anesthetic with epinephrine may cause opposite effects: hypertension, tachycardia and angina
- Other: transient burning sensation, skin discoloration, swelling, neuritis, tissue necrosis

Vasoconstrictors-

Advantages
- Increased duration of the anesthetic effect
- Decrease systemic toxicity of local anesthetics (by slowing systemic absorption)
- Help provide hemostasis

Adverse Effects
- Patients with CV dz prone to cardiac dysrhythmias
- Presence of pheochromocytoma is a contraindication for use of epinephrine- due to high levels of catecholamines, epi may precipitate a crisis
- Thyrotoxicosis- contraindation for use of vasoconstrictors - may precipitate thyroid storm

Anticoagulation

- Knowledge of the patient’s use of anticoagulation is necessary to decrease bruising and bleeding complications
- Literature has not shown any clinically significant complications from breast biopsies performed while on anticoagulation.
Anticoagulation

Aspirin

- Mechanism: irreversible inactivation of cyclooxygenase decreasing synthesis of prostaglandin H2 and Thromboxane A2
- Irreversible inactivation- lifetime of platelet (7-10 days)

JDMI Guidelines

- Biopsy booked by our department, not family physician
- Do not ask patients to stop anticoagulation
- Risks of stopping anticoagulation may be higher than proceeding with procedure
- Same day biopsy may be necessary

Recommendations

- Prior to procedure all patients should be questioned for history of anticoagulant use or antiplatelet therapy
- All patients on anticoagulant therapy should be counseled regarding risk of increased bleeding and bruising

Recommendations

- FNA, hookwire localizations and CNB- may proceed regardless of type of anticoagulation
Recomendations

- Warfarin- recent INR should be provided by referring physician. Proceed if INR is < 2.5
- Thrombocytopenia- platelet count should be > 30x10^9/L
- Aspirin and Plavix- may proceed if clinically indicated

Take home points

- Use lowest effective dose of anesthesia
- Maximum dose 25 mL 1 % Xylocaine
- No clinically significant complications have been observed in patients undergoing bx on anticoagulation.

Recomendations

- In all cases, may consider using a smaller gauge needle if clinically appropriate
- Ensure adequate hemostasis prior to patient leaving the department.

Take home points

- Counsel patients regarding increased risk of bleeding.
- Ensure adequate hemostasis