MRAD 240: Specialized Imaging 1

Injections – The Technologist's Role

MRT Program

Objectives

- Explain the radiologic technologist's role in participating in joint injection procedures.
- State the required equipment needed to perform a joint injection
- Describe the images obtained during a joint injection for documentation

Technologist's Responsibilities

- Check the requisition
- Look for/arrange preliminary imaging
- Check for relevant medical history
- Obtain informed consent
- Set up console and room
- Set up sterile tray
- Give rad necessary info and assist during procedure
- Help patient out of exam room and clean up
- Send images and document
- Provide after care to patient

Requisition

- Patient identifiers
  - Name, birth date, personal health number, address, etc.
- Requested injection type
- Clinical history
- Physician signature or stamp
- Requisitions have various formats depending on hospital or clinic

https://www.mentimeter.com/app

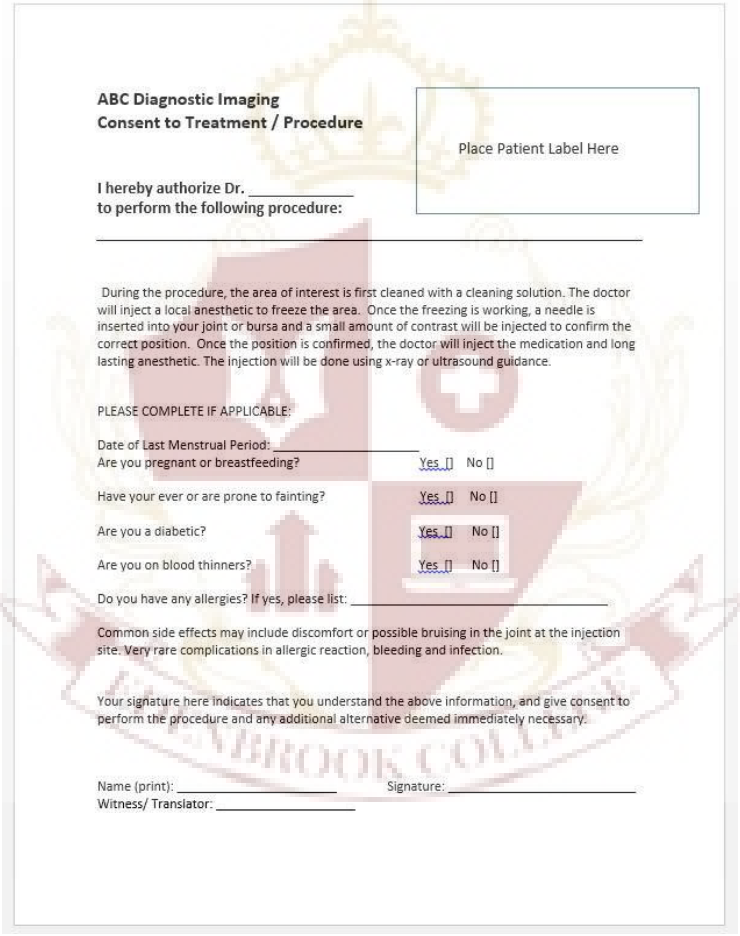
Preliminary Imaging

- Depends on site protocol and radiologist preference
- Most will want X-ray or U/S of the affected area from within the last 1-2 years
- Often performed onsite on the day of the injection
- Patient is always free to refuse the additional imaging so ensure consent is accurate and complete

Relevant Medical History

- Prior injections
  - How many
  - Where on the body
  - Did they work?
- Allergies
- Patient response to procedure. Example: Faints at the sight of needles

Example of Consent Form



ABC Diagnostic Imaging
Consent to Treatment / Procedure

Place Patient Label Here

I hereby authorize Dr. _____
to perform the following procedure:

_____

During the procedure, the area of interest is first cleaned with a cleaning solution. The doctor will inject a local anesthetic to freeze the area. Once the freezing is working, a needle is inserted into your joint or bursa and a small amount of contrast will be injected to confirm the correct position. Once the position is confirmed, the doctor will inject the medication and long lasting anesthetic. The injection will be done using x-ray or ultrasound guidance.

PLEASE COMPLETE IF APPLICABLE:

Date of Last Menstrual Period: _____
Are you pregnant or breastfeeding? Yes [] No []

Have your ever or are prone to fainting? Yes [] No []

Are you a diabetic? Yes [] No []

Are you on blood thinners? Yes [] No []

Do you have any allergies? If yes, please list: _____

Common side effects may include discomfort or possible bruising in the joint at the injection site. Very rare complications in allergic reaction, bleeding and infection.

Your signature here indicates that you understand the above information, and give consent to perform the procedure and any additional alternative deemed immediately necessary.

Name (print): _____ Signature: _____
Witness/ Translator: _____

Informed Consent

- What does informed consent mean and why do we need it?
  - Pt understands the procedure and the risks involved
  - We are breaking the skin
- Explain using layman's terms
- Allow patient time to process and ask question. Answer questions only within our scope of practice. Forward other questions to Radiologist

Parts of the Consent

- Confirm
  - Identity
  - Body part to be injected and correct side.
  - Presence of pain or other issue note on req

- Describe procedure
  - Marking the skin and cleaning
  - Freezing – poke and burn
  - Positioning of needle and confirmation with contrast (using X-ray or U/S guidance)
  - Medication
  - Get dressed and wait for a few minutes

Parts of the Consent cont.

- What to expect
  - Today
  - This week
  - Over the next few months
- Precautions
  - Reduced activity – very injection dependent
- Risks
  - What to look for
  - What to do about it

Procedure Risks

- Every procedure has the same two risks
  - Infection
    - Heat, excessive pain, redness, swelling
    - 2-5 days post injection
    - Follow-up with family doctor or walk-in clinic
  - Allergic reaction
    - Hives, swelling, trouble breathing
    - Within the first 10 minutes after an injection
    - Alert medical staff at injection facility

- Some procedures have extra risks. Need to disclose

Parts of the Consent cont.

- Medical history
  - LMP
  - Blood thinners
  - Allergies
  - Diabetes
  - Infections
- Questions from the patient
- Signature MUST be granted prior to starting the injection

Setting Up

- Console
  - Pt identifiers
  - Accession # and exam
  - Exposure setting
- Room
  - Bed and monitor screens in correct orientation
- Tray
  - Correct items
  - Neat
  - Sterile

Sterile Tray

- Needles
  - 18G 1-1.5″ for drawing up medications
  - 25G 1-1.5″ for injecting anesthetic
  - 22G 3.5″ spinal needle for rest of procedure



https://www.lifesupply.ca/bd-305125-precisionglide-sterile-conventional-needle-blue-regular-wall-25g-x-25mm-1-100-bx/



https://www.midwiferysupplies.ca/products/copy-of-bd-eclipse-needle?variant=12288534708324



https://cardiomed.com/catalog/anesthesiology/22g-x-90mm-quincke-spinal-needle/

Sterile Tray cont.

- Syringes
  - Size depends on type of procedure being done
- Extension tubing
  - Keeps radiologist's hands further away from the field when injecting contrast
- Sponge swabs
  - Can also be gauze and small forceps
  - For applying antiseptic solution



https://www.ebay.co.uk/itm/10-x-Sterile-TERUMO-SYRINGES-Medical-Plastic-2-5ml-5ml-10ml-20ml-50ml-All-Sizes-/291095152955



https://www.ebay.com/itm/5pcs-EXTENSION-TUBING-I-40cm-MINIMUM-VOLUME-LUER-LOCK-/282817332027



https://lingchen.en.made-in-china.com/

During the Procedure

- Give radiologist relevant history
  - Side and site to be injected
  - Previous injection history (if relevant)
  - Allergies
  - Patient concerns

- Ensure everything is within grasp for radiologist

- Hold medication vials for drawing up if required.

Fluoroscopy

- Adjust any settings during procedure
  - Magnification, image orientation, AP to lateral
- Saving images as needed
  - Scout image
  - Image with needle and contrast in place
- The radiologist has a foot pedal to control the live fluoroscopy and make radiographic exposures.
  - Cannot take Last Image Hold

Knee joint Injection Video

https://www.youtube.com/watch?v=bOBElEptG60&has_verified=1

After the Injection

- Band-aid on injection site
- Assist patient to sit
  - Watch for signs of dizziness or other adverse reactions
- Walk patient to changing area
  - Ask them to wait once they're changed. You will come visit them in a bit
- Clean up tray
  - Dispose of sharps and pharmaceuticals appropriately
- Disinfect surfaces and prepare room for next patient

After the Injection cont.

- Send images to PACS
  - Add any site specific annotations
- Record details in RIS
  - Fluoro time and # of images
  - Medications injected (names and amounts)
  - Pre and Post injection pain scores
  - Notes from the radiologist
  - Supportive care given
- Check on patient and dismiss them if they are feeling well
  - Provide any after-care documentation