Interventional Radiology

University of North Carolina School of Medicine
Department of Radiology 2020

UNC Radiology Residency Educational Scholarship
Many slides adapted from Dr. Ari Isaacson, MD
CVAD lecture
Learning objectives

By the end of this activity, participants will be able to:

1. Understand spectrum of IR (interventional radiology) procedures
2. Describe central venous access device (CVAD) options
3. Understand pre-procedural planning
4. Review biopsy procedures
Module Outline

I. Procedures
II. Central venous access devices
III. Pre-procedure planning
IV. Cases
V. Questions
Procedures We Do!

Lines
Biopsies
Abscess drains
Thrombolysis
IVC filters
Cholecystostomy/PTBD
G - tube
Angiography

Thora/paracentesis
Embolization/sclerosis
Nephrostomy tubes
Vertebroplasty
RFA/cryo
TIPS/BRTO
LP
Arthrography
And more !!
You are the intern taking care of a 24yoF with cystic fibrosis admitted with a cystic fibrosis exacerbation.

To prepare for discharge and 3 weeks of outpatient IV antibiotics . . .

Q: What type of IV access/line does she need?
CVAD

Non tunneled

Tunneled

Portacath

PICC
Non-tunneled CVAD

In hospital use only
Can fall out/be pulled out
More prone to bacteremia
Easily pulled by housestaff/anyone

Triple lumen

Hemodialysis/apheresis cath
temp catheter
Tunneled CVAD

Can be discharged with these
Better protection from bacteria and accidental withdrawal due to skin tunnel and cuff
Minor procedure to remove (by Rads)

Powerline
Home IV abx
Use in dialysis pts
Portacath and PICC

**Portacath**
- Implanted completely under skin
- Usual for chemotherapy use

**PICC**
- Peripherally inserted central venous catheter
- Ideal in home IV abx, CF patients
- No in dialysis pts
- Easily removed
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You are the intern taking care of a 24yoF with cystic fibrosis admitted with a cystic fibrosis exacerbation.

To prepare for discharge and 3 weeks of outpatient IV antibiotics . . .

Qs: Is the patient consentable?
   Is the patient coagulopathic? (recent platelets/PT-INR)
   Is the patient bacteremic?
   Is the patient NPO? (in case of sedation)?
   What kind of IV access/line does she need?
**Tunneled, Portacath and PICC**

**Tunneled & Portacath**

- INR <2-1.5 depending on cath type
- Plts >50k
- SC Heparin/lovenox off 6 hrs, Coumadin off 3 days, Plavix off 5 days, Hep gtt off 1-2 hrs
- Blood culturesNEG x 2 days
- NPO x 8 hrs **if** sedation

**PICC**

- Coagulopathy does NOT need correction
- Yes if bacteremic (but somewhat controversial)
- No sedation required hence
- No NPO required
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And now on to Biopsies performed by Rads . . .

CT vs US depends on scenario

Fine Needle Aspiration (FNA)
obtains clumps of cells, smaller gauge

Core Needle Biopsy (CNB)
retrieves solid sample of tissue, retains architecture
78yo hemoptysis

RUL mass and right mediastinal LN
Next step?
78yo hemoptysis

CT confirms RUL mass and right mediastinal LN. Pt poor bronchoscopy candidate -> Bx via CT

Squamous cell carcinoma
57yo right flank pain

Axial and coronal CT scan images . . . findings?
57yo right flank pain

CT: Enhancing mass adjacent to the aorta and right kidney, encasing or involving the IVC. Displaces bowel anteriorly -> Proceed to CNB
57yo right flank pain

CT guidance setup

Biopsy needle advanced to mass

Diagnosis on CNB: Retroperitoneal sarcoma
32yo endocarditis and LE claudication
32yo endocarditis and LE claudication

DSA image showing superior approach catheter with contrast injection. Contrast fills the aneurysm sac.
32yo endocarditis and LE claudication

DSA image (left) showing placement of an embolization device called an Amplatzer plug
32yo endocarditis and LE claudication

Pre & postembolization angiograms:
Contrast injection post plug placement successful occlusion of the aneurysm!
Synopsis

Radiologists actually do more than interpret radiographs!

Image guided procedures often less invasive than open/surgical procedures

Different types of CVADs

Pre-procedural planning: consentable? Coags ok? Blood cultures (tunneled lines)?

Many ways to perform biopsies - if unsure, ask a radiologist.
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UNC Rad O-Gundo, subspecialty block ed resources. Phone Numbers, HSI, custom build e-books, helpful hints can be found on this site.

ABR Core exam Intel
Block 19 Schedule
Chief's Survey
RadExam
RSNA Physics Modules

UNC Radiology Conference schedule 18-19

More at www.rads.web.unc.edu  www.msrads.web.unc.edu
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Thank you!