

ORGANIZATION: Los Angeles Radiological Society
 VENUE: 66th Annual Midwinter Radiology Conference
 DATE: February 22, 2014 – Saturday, 1:00pm – 2:30pm
 TITLE: Imaging Musculoskeletal Masses, Osseous
 Metastatic Disease and Hardware

Presenters:
 Leanne L. Seeger, MD, FACR – Professor of Radiology, Chief of MSK
 Imaging, David Geffen School of Medicine at UCLA
 Mark Schweitzer, MD – Professor and Chair of Radiology, Stony
 Brook University School of Medicine
 Thomas J. Learch, MD – Chief, MSK Radiology, S. Mark Taper
 Foundation Imaging Center, Cedars-Sinai Medical Center

ANSWER KEY

PRESENTATION 1: **Musculoskeletal Masses: Imaging Evaluation to Tissue Sampling**

QUESTION 1

Regarding image-guided biopsy of musculoskeletal masses, which of the following is true?

1. It is not indicated for patients under the age of 13 years of age.
2. Ultrasound guidance is always preferable for soft tissue masses.
3. The biopsy tract should only cross one anatomical compartment.
4. Biopsy success and diagnostic yield are higher for malignant tumors than for benign.
5. Lipoma can be readily differentiated from liposarcoma on imaging grounds.

DISCUSSION RE: ANSWER OPTIONS

Correct answer: 4

Rationale: Age is not a factor in image-guided biopsy. CT is preferable to ultrasound for deep soft tissue masses. There is no scientific documentation proving that percutaneous biopsy of musculoskeletal lesions is associated with tract seeding. It is difficult, if not impossible to differentiate benign fat and cartilage lesions from low-grade malignancy on imaging grounds alone.

REFERENCE FOR QUESTION 1

Omura MC, Motamedi K, UyBico S, Nelson SD, Seeger LL. Revisiting CT-Guided Percutaneous Core Needle Biopsy of Musculoskeletal Lesions: Contributors to Biopsy Success. American Journal of Roentgenology 197(2):457-461, 2011

UyBico SJ, Motamedi K, Omura MC, Nelson SD, Eilber FC, Eckardt J, Seeger LL. Relevance of Compartmental Anatomic Guidelines for Biopsy of Musculoskeletal Tumors: Retrospective Review of 363 Biopsies over a 6-Year Period. Journal of Vascular and Interventional Radiology 23(4):511-518, 2012

QUESTION 2

Regarding sedation/anesthesia for image-guided biopsy of musculoskeletal masses, which of the following is true?

1. Conscious sedation is needed to biopsy deep soft tissue masses in adults.
2. "MAC" refers to monitored anesthesia care.
3. Patients who have local anesthesia require post-procedural monitoring for two hours minimum.
4. Conscious sedation may be administered by the radiologist performing the procedure.
5. The type of anesthesia can be decided when the patient arrives.

DISCUSSION RE: ANSWER OPTIONS

Correct answer: 2

Rationale: Deep soft tissue masses in adults are easily performed under local anesthesia. MAC refers to monitored anesthesia care, and is administered by an anesthesiologist. Patients who have only local anesthesia for biopsy may be discharged directly home at the completion of the procedure. Conscious sedation requires continual monitoring, and cannot be administered by the individual performing the procedure. All means of anesthesia except local require a recent history/physical, NOP status and a post-procedural observation unit. These must be prearranged.

REFERENCE FOR QUESTION 2

ACR–SIR Practice Guideline for Sedation/Analgesia

http://www.acr.org/~media/ACR/Documents/PGTS/guidelines/Adult_Sedation.pdf

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ANSWER KEY

PRESENTATION 2: Imaging of Osseous Metastatic Disease

QUESTION 3	DISCUSSION RE: ANSWER OPTIONS
The risk of pathologic fracture is based on 1. cortical involvement 2. Medullary involvement 3. Soft tissue extent 4. Location in the hands and feet	Correct Answer: 1 - If 50% is involved Option 2 – Only minor contributor Option 3 – Is not a factor Option 4 – Pathologic fractures are rare in this location

REFERENCE FOR QUESTION 3

Hipp JA, Springfield DS, Hayes WC. Predicting pathologic fracture risk in the management of metastatic bone defects. Clin Orthop Relat Res. 1995 Mar;(312):120-35.

QUESTION 4	DISCUSSION RE: ANSWER OPTIONS
The most common primary for bone metastases is 1. Lung 2. Ovarian 3. Prostate 4. Renal	Correct Answer = Option 3 Option 1 - 3rd most common Option 2 -rare to go to bone Option 4 - not common

REFERENCE FOR QUESTION 4

Mundy G.R. Metastasis: Metastasis to bone: causes, consequences and therapeutic opportunities. Nature Reviews Cancer 2, 584-593 (August 2002)

PRESENTATION 3: Imaging Hardware Pearls

QUESTION 5	DISCUSSION RE: ANSWER OPTIONS
What is the most common initiator of osteolysis about joint replacements? A. Patient activity B. Metal component C. Polyethylene wear debris D. Cement	Answer: C. Polyethylene wear debris Osteolysis can be caused by all foreign body materials used in arthroplasty surgery, but polyethylene debris is the most common initiator.

REFERENCE FOR QUESTION 5

Mihra S. Taljanovic, Marci D. Jones, Tim B. Hunter, James B. Benjamin, John T. Ruth, Andrew W. Brown, Joseph E. Sheppard Joint Arthroplasties and Prostheses. RadioGraphics, 2003, Vol.23: 1295-1314.

QUESTION 6	DISCUSSION RE: ANSWER OPTIONS
Metal on metal prosthesis can cause all of the below except for: A. Elevated levels of metal ions in the blood B. Pseudotumors about operative site C. Periprosthetic osteolysis D. Polyethylene wear.	Answer D. Polyethylene wear. Metal on metal prosthesis do not have polyethylene components.

REFERENCE FOR QUESTION 6

<http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/ImplantsandProsthetics/MetalonMetalHipImplants/>