**RadiOlympics (1/24/22): Northeast Ohio Medical University**

If there are any questions, please reach out to Parker Kim. Good luck!

\*\*Images courtesy of Dr. Marcus Julius (unless otherwise specified).

Questions:

1. A 45 y/o male patient was hiking in Arches National Park but ran out of water a day ago. He was disoriented when found by park rangers. When seen in the emergency department, he presents with left-sided flank pain and hematuria. The patient is otherwise healthy and takes no medications other than Vitamin C. An unenhanced CT of the abdomen and pelvis is shown below. Which of the following is the most likely cause of the patient’s symptoms (see the blue arrows)? (Difficulty: 1pt)A picture containing text, different

   Description automatically generatedhttps://radiopaedia.org/cases/obstructing-renal-calculus
   1. Cholelithiasis
   2. Swallowed gum
   3. Urolithiasis
   4. Urothelial cancer of the bladder
2. The Grinch’s heart is known to be 3 sizes too small. Upon review of The Grinch’s chest x-ray (CXR), his heart looked abnormally large. Doctor Who thought “Could this be correct?” and was just about to consult cardiology. On a second look, the doctor realized that he had misread the chest radiograph. The suspected cardiomegaly was artifactual in nature. Which of the following routine chest radiographs would cause the greatest degree of artifactual magnification of the mediastinum? (Difficulty: 2 pts)

Normal Frontal: Normal Lateral:

A picture containing text, x-ray film

Description automatically generated

* 1. Anterior-posterior (AP) projection
  2. Left lateral projection
  3. Posterior-anterior (PA) projection
  4. Right lateral projection

1. Normal scintigraphic images of a particular organ are shown below. Oral administration of which element is utilized in performing this examination (Technetium 99m pertechnetate may also be used for this procedure, albeit via IV administration)? (Difficulty: 1pt)

A picture containing text, branchiopod crustacean

Description automatically generated

* 1. Gallium
  2. Indium
  3. Iodine
  4. Xenon

1. Patient reports: “During exam week, I didn’t move from my chair for over 12 hours. Suddenly, I developed shortness of breath and chest pain. My heart was racing.” After initial assessment in the ED, a CTA of the chest was performed (representative image of which is shown below). In what structure is the abnormality located (indicated by the blue arrows)? (Difficulty: 2pts)

A picture containing text, helmet

Description automatically generated

* 1. Aorta
  2. Inferior vena cava
  3. Pulmonary arteries
  4. Pulmonary veins

1. A 45 y/o patient presents with dyspnea and pursed lip breathing for the last few weeks. He has a 20-pack-year smoking history as well as history of cirrhosis. Respiratory function tests reveal an elevated TLC and a decreased FEV1/FVC ratio. Based on the chest x-ray below, what is the patient’s diagnosis? (Difficulty: 2pts)

X-ray of a person's chest

Description automatically generated with low confidence

* 1. Chronic bronchitis
  2. Emphysema
  3. Lung cancer
  4. Pulmonary fibrosis

Answers:

1. C
2. A
3. C
4. C
5. B