1. In patients with connective tissue disease-associated interstitial lung disease which CT sign has an independent bearing on survival?
   A. Ground-glass opacification
   B. Bronchial wall thickening
   C. Traction bronchiectasis
   D. Emphysema

2. What is NOT recommended for treatment of patients with IPF?
   A. Predinisone
   B. Pirfenidone
   C. Antiacids
   D. Nintedanib

3. Which is MOST important to the CT diagnosis of honeycombing?
   A. Thick walls
   B. Associated other findings of fibrosis
   C. Lower lobe predominance
   D. Intervening normal lung parenchyma
4. Which of the following CT findings best predicts a poor outcome in patients with sarcoidosis?

A. Presence of mosaic perfusion and air-trapping.
B. Main pulmonary artery diameter to ascending aortic diameter ratio (MPAD/AAD) greater than 1.0.
C. Small (< 5-mm diameter) nodules in a perilymphatic distribution.

5. Anti-Jo-1 positivity is a marker of what connective tissue disease?

A. Rheumatoid arthritis
B. Systemic sclerosis
C. Idiopathic inflammatory myositis

6. Which of the following most closely resembles the radiologic presentations of Coal Workers’ Pneumoconiosis?

A. Sarcoidosis
B. Silicosis
C. Asbestosis
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7. Which of the following is the most common CT finding of lung involvement in patients with Erdheim-Chester Disease?

A. Ill-defined nodules
B. Subpleural consolidation
C. Interlobular septal thickening
D. Ground-glass opacities

8. Acute eosinophilic pneumonia:

A. is the most common eosinophilic lung disease in the United States.
B. has an association with a recent start or increase in cigarette smoking.
C. typically responds poorly to steroid treatment.

9. Of the following products/services we provide, which is of highest importance in assuring our value as thoracic radiologists?

A. High quality images
B. Clinical decision support
C. Timely, actionable information
D. Structured reports
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10. Which of the following statements regarding the use of clinical decision support (CDS) with electronic health record (EHR) physician order entry are true in thoracic imaging?

A. Implementation of evidence-based CDS results in decreased use of CT pulmonary angiography examinations.
B. CT pulmonary angiography examinations obtained after the implementation of evidence-based CDS have a lower positivity rate.
C. There is greater morbidity in patients with low utility appropriateness scores in whom a CT pulmonary angiography examination was considered but not performed.
D. All of the above are true.

11. What are the principles of lean?

A. An emphasis on adding value for the institution
B. Encouraging different varieties of work processes to develop creative potential
C. Eliminating waste or steps that don’t add value
D. Only involving the staff that are involved in the specific process being studied
12. Regarding intramural hematoma, what is the importance of differentiating intramural blood pool (IBP) from other focal aortic projections:

A. IBP requires surgical intervention
B. IBP can be observed
C. IBP can be stented
D. IBP implies an ominous prognosis

13. What is the potential role of Delayed Dual Energy Scan?

A. To diagnose acute thromboembolic disease.
B. To differentiate between acute and chronic thromboembolic disease.
C. To provide prognostic information on patients with acute thromboembolic disease.
D. To differentiate thromboembolism from pulmonary artery sarcoma.

14. Regarding CTEPH, which of the following statements is TRUE?

A. A normal CTPA effectively rules out the disease.
B. A normal MR angiogram effectively rules out the disease.
C. A normal ventilation/perfusion scan effectively rules out the disease.
D. All of the above.
15. In a 40 year old man with history of stroke and feeding artery of 3 mm, what is the best next step?

A. MDCT in 1 year
B. Transcatheter embolization
C. Surgical resection
D. Contrast transthoracic echocardiography

16. The following features make the diagnosis of lymphangioleiomyomatosis (LAM) unlikely:

A. Thin-walled cysts
B. Lower lung predominance
C. Associated renal angiomyolipoma
D. Absence of nodules

17. Which of the following guidelines is based on a single dimension tumor size estimate?

A. LungRADS
B. RECIST
C. Fleischner Society guidelines for small lung nodules
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18. According to the ACOSOG Z4033 prospective, multicenter trial on patients with stage IA NSCLC treated with RFA, what is the approximate 2-year overall survival rate?

A. 50%
B. 60%
C. 70%

19. Which of the following has the highest malignancy rate?

A. Solid nodule
B. Part solid, part ground glass nodule
C. Ground glass nodule

20. Which of the following statements is correct for indolent lung cancer?

A. Indolent lung cancers were rarely identified in screening trials with chest radiography.
B. Detecting indolent lung cancers can cause harm of screening.
C. As subsolid nodules have high likelihood of malignancy, persistent subsolid nodules of any size should be resected.
21 What is the key outcome of a successful lung cancer-screening program?

A. Diagnosing more lung cancers
B. Reducing lung cancer mortality
C. Detecting more lung nodules

22 Which of the following makes a CT lung cancer screening program most cost-effective?

A. Decrease the frequency of follow-up CTs
B. Screen former smokers only
C. Higher non-curative treatment costs

23 Bone suppression techniques are least likely to help with:

A. Bone lesions
B. Pulmonary parenchymal lesions
C. Thyroid lesions
What is the principle on which DTS works?

A. Shift and add technique
B. Move and displace technique
C. Fourier transformation
D. Modified Fourier transformation

Which of the following is a feature of dual-energy CT myocardial perfusion compared to a single-energy study?

A. Higher artifacts
B. Improved detection of perfusion defects
C. Improved intraluminal evaluation
D. Lower radiation dose

What is today the most limiting factor of hyperpolarized noble gas MR imaging of the lungs?

A. 129Xe is very expensive
B. Half-live of 129Xe in the range of couple hours
C. 129Xe toxicity
D. Limited source of nuclear war head waste
27 In the proposed forthcoming TNM-8 for non-small lung cancer a primary tumor invading the diaphragm will be designated which of the following T descriptors:

A. T4  
B. T3  
C. T2b  
D. T2a

28 PET/CT's strength in staging non-small cell lung cancer is primarily its ability to:

A. Accurately upstage patients, thereby preventing unnecessary surgeries  
B. Accurately downstage patients, thereby allowing for more surgical treatments  
C. Determining the likely cell type to help guide management  
D. Accurately determine lymph node status

29 What is the best imaging modality for differentiating between T1, T2, and T3 tumors of the esophagus in most clinical practices?

A. CT  
B. FDG PET/CT  
C. Endoscopic ultrasound (EUS)  
D. MRI
In order to be successful, the most impactful organizational aspect of a Multidisciplinary Meeting is:

A. The quality of teamwork
B. The number of patients reviewed
C. The frequency of meetings
D. The number of participating subspecialties

Which modality allows direct quantification of myocardial blood flow?

A. Single Photon Emission Computed Tomography (SPECT)
B. CT Myocardial Perfusion Imaging in Shuttle Mode
C. Dual-Energy CT Myocardial Perfusion Imaging
D. First Pass Arterial CT Myocardial Perfusion Imaging

All of the following are advantages of 4D Flow Imaging EXCEPT:

A. Single imaging acquisition
B. Fast imaging acquisition
C. Complete spatial and temporal coverage
D. Multiple post-processing options
33 In which MR scanner strength should a patient with a cardiac pacemaker be scanned on?

A. 1.5 Tesla  
B. 3 Tesla  
C. 7 Tesla

34 Myocardial T1 mapping can serve which of the following roles in the diagnosis and prognostication of patients with cardiomyopathy?

A. Quantification of left ventricular ejection fraction  
B. Quantification of myocardial fibrosis  
C. Depiction of wall motion abnormalities

35 Angiosarcomas of the heart are most commonly encountered in which cardiac chamber?

A. Right atrium  
B. Left atrium  
C. Left ventricle  
D. Right ventricle
Which of the following atrial septal defects (ASD) is most commonly associated with partial anomalous pulmonary venous return (PAPVR)?

A. Ostium Primum ASD  
B. Ostium Secundum ASD  
C. Sinus Venosus ASD  
D. Unroofed coronary sinus

The body surface area (m²) required for placement of the FDA approved total artificial heart is:

A. >1.2  
B. >1.5  
C. >1.7  
D. >2.0

Which of the following findings suggest a diagnosis of cardiac amyloidosis?

A. Left ventricular wall thinning  
B. Global subendocardial delayed enhancement  
C. Left ventricular subepicardial delayed enhancement  
D. Biventricular enlargement
39 Which patient would be the most appropriate candidate for cardiac stress MRI?

A. Chronic MI with new equivocal stress echo
B. High CAD risk with acute chest pain
C. Intermediate CAD risk with third degree heart block
D. Low CAD risk with chronic chest pain

40 What is the most common coronary artery anomaly seen with regard to abnormal course?

A. Prepulmonic LAD
B. Retro-aortic LCX
C. Duplicated LAD
D. Malignant RCA

41 The most common cause of a coronary artery aneurysm in the Western world is:

A. Atheromatous disease
B. Fistula
C. Infectious cause
D. Kawasaki's disease
42. The percent coronary artery stenosis that demonstrates a high likely of being obstructive is typically though of as:

A. 50% cross sectional area stenosis  
B. 50% diameter stenosis  
C. 70% diameter stenosis

43. The majority of the bloodflow through the left coronary artery drains through which veins?

A. Thebesian veins  
B. Coronary sinus tributaries  
C. Vein of Zuckerkandl

44. An easy and effective technique to use in a standard 50 minute lecture to improve learning is:

A. Speak louder  
B. Break up the lecture into 3 segments with breaks (Primacy-Recency Effect)  
C. Chunking  
D. Use lots of colors and video’s in the lecture
45 Which of the following changes on radiograph might be expected in the setting of chronic left-sided heart failure complicated by abrupt right heart failure?

A. Unchanged vascular pedicle, unchanged azygos arch, worsening pulmonary edema, and worsening bilateral pleural effusions
B. Widening of the vascular pedicle, enlargement of the azygos arch, decrease in pulmonary edema, and increased chest wall thickness from edema
C. Narrowing of the vascular pedicle, smaller azygos arch, decrease in pulmonary edema, and thinner chest wall

46 What is the most common type of perceptual error in diagnostic radiology:

A. Search Error
B. Recognition Error
C. Decision Error

47 What PowerPoint tool can be used to create a custom slide template for any future presentation?

A. Format Painter
B. Slide Master
C. Align Objects
D. Transitions
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48 False positive PET results may be due to:

A. Infection, inflammation and iatrogenic conditions such as recent surgery and interventional procedures
B. Growth of the primary tumor or involved nodes
C. New metastatic disease

49 Which of the following is true regarding pericardial recesses?

A. Exert mass effect
B. Fluid attenuation
C. Rarely visible on thin-section MDCT

50 Apical-predominant fibrosis and pleural thickening is characteristic of what form of rejection?

A. Bronchiolitis obliterans
B. Acute cellular rejection
C. Restrictive allograft syndrome
D. Acute fibrinous and organizing pneumonia
51 A 65-year-old woman with refractory rheumatoid arthritis is placed on etanercept (TNF-antagonist). She develops chronic cough, fatigue and fevers. Chest radiograph and CT reveal patchy tree-in-bud opacities predominantly in the right upper and middle lobes. Which of the following microorganisms does this patient most likely have?

A. Mycobacteria  
B. Fungus  
C. Virus  
D. Nocardia

52 Which of the following is an atypical manifestations of TB?

A. Cavitary lesions  
B. Tree in bud opacities  
C. Rasmussen´s aneurysm  
D. Adenopathy + Consolidation

53 Which of the following viruses principally target vascular endothelial cells?

A. Cytomegalovirus  
B. Hantaviruses  
C. Metapneumovirus  
D. Respiratory Syncytial Virus
Which of the following is NOT a manifestation of angio-invasive fungal infections in the setting of neutropenia?

A. Halo Sign  
B. Reversed halo sign  
C. Miliary nodules  
D. Vascular occlusion sign

Which imaging modality is the BEST for differentiating thymic hyperplasia from thymoma?

A. Chest CT  
B. MRI  
C. FDG PET-CT

Most likely complications that may occur from a mediastinal biopsy include:

A. Pneumothorax  
B. Hematoma  
C. Air embolism  
D. Hemoptosis
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57 Which pleural mass is most typically comprised of low T2 signal tissue?

A. Benign solitary fibrous tumor
B. Mesothelioma
C. Metastatic adenocarcinoma to pleura

58 Airway dominant CT phenotype of COPD has been shown to be associated with all of the following EXCEPT?

A. Lower BMI
B. Younger age
C. %FEV1 Predicted

59 CT scanning during which part of the respiratory cycle has been shown to be most sensitive for tracheobronchomalacia?

A. End Inspiration
B. Late Expiration
C. End Expiration
Asthma, elevated IgE, high density mucus impactions and central bronchiectasis are seen in which of the following entities?

A. Immotile Cilia Syndrome  
B. Mycobacterium Avium Intracellulare  
C. Allergic Bronchopulmonary Aspergillosis