Question 4-1. This question emphasizes the most common cause of pleural calcification, which is long-standing hemothorax or pyothorax (A). So (A) is the correct answer.

Question 4-2. This question calls attention to a primary malignancy that is most likely to produce calcified pulmonary metastases in a 55-year-old patient, which is thyroid carcinoma (A). Other malignancies that can produce calcified pulmonary metastases include mucinous adenocarcinomas and chondrosarcomas. Osteosarcomas in younger patients can produce calcified osseous pulmonary metastases. So (A) is the correct answer.

Question 4-3. This question draws attention to the cause of pulmonary ossification, which is chronic inflammation (E). Pulmonary ossification is a rare condition that occurs in the presence of a variety of conditions including interstitial fibrosis, recurrent pneumonia, pulmonary edema, and mitral stenosis. So (E) is the correct answer.

Question 4-4. This question is illustrated by an axial chest CT scan (Figure 8) in a 47-year-old man. Bilateral hilar and mediastinal calcified lymphadenopathy is noted with the paratracheal calcified node presenting with a peripheral “eggshell” pattern of calcification. The eggshell calcification pattern of hilar and mediastinal lymph nodes is seen in approximately 5% of patients with occupational exposure to silica (C). Since the radiographic pulmonary manifestations of silicosis typically have a latency period of several decades, the patient was exposed to silica long before the present chest CT examination. Although the eggshell pattern of calcification in hilar and mediastinal lymphadenopathy has been described in multiple entities, it is most typical of silicosis given the correct occupational history of exposure to silica particles in the past. So (C) is the correct answer.

Question 4-5. This question alludes to the cause of pulmonary metastatic calcification, which is elevated serum calcium and phosphorus (D). Specific causes of pulmonary metastatic calcification are many and varied, including primary and secondary hyperparathyroidism, chronic renal failure, destructive bony lesions such as multiple myeloma, milk-alkali syndrome, hypervitaminosis D, sarcoidosis, IV calcium therapy, and liver transplantation. So (D) is the correct answer.

Question 4-6. This question regards several important statements about pulmonary involvement in patients with amyloidosis. Pulmonary involvement in amyloidosis often is radiographically occult (A) but may involve both the lung parenchyma and airways. So (A) is true. It affects approximately half of the patients with the disease (D). Thus (D) is true. Lung involvement may progress to end-stage fibrosis (E), but does not cause a pneumothorax (B). So (E) is true, but (B) is false. Calcified nodules may involve the wall of the trachea and bronchi (C) and progress to obstruction of the involved airway. Thus (C) is true. Since (B) is false, (B) is the correct answer.
Question 4-7. This question refers to the radiographic appearance of the calcification in a pulmonary granuloma, which is lamellated (D) or central. So (D) is the correct answer.

Question 4-8. This question speaks to a diagnostic vignette in which the chest radiograph of a 50-year-old man demonstrates multiple, bilateral, small, calcified pulmonary nodules and splenic calcifications. All of the options can develop multiple, bilateral pulmonary calcifications, but only histoplasmosis (C) also can have splenic calcifications. So (C) is the most likely diagnosis, and (C) is the correct answer.

Question 4-9. This question presents a clinical situation in which the chest CT of a 35-year-old woman demonstrates a 3 cm-in-diameter peripheral, pulmonary parenchymal mass containing calcification with a “popcorn” pattern. Calcification within both a primary bronchogenic cancer (D) and a granuloma of pulmonary coccidioidomycosis (E) is rare. Calcification is seen in 25% of bronchial carcinoid tumors (A), but these indolent malignant neoplasms usually are centrally, not peripherally, located. The calcification within a granuloma of pulmonary tuberculosis (B) usually is central or lamellated. However, pulmonary hamartomas (C) usually are smaller than 4 cm in diameter, peripherally located, and when calcified typically produce a popcorn pattern. So (C) is the most likely diagnosis, and (C) is the correct answer.

Question 4-10. This question highlights the most common cause of a focal pulmonary parenchymal calcification, which is healed granulomatous infection (B). Of the healed granulomatous pulmonary infections, histoplasmosis is the most common, followed less frequently by tuberculosis, coccidioidomycosis, or blastomycosis. So (B) is the correct answer.

Answer Key for Volume 35 # 4:

1. A
2. A
3. E
4. C
5. D
6. B
7. D
8. C
9. C
10. B