RADIOLOGY REPORT

Meridian Medical Center · 2100 Pacific Heights Drive, San Mateo, CA 94403 (650) 555-0190

Patient Information

Name: Margaret Chen
DOB: August 15, 1958 (Age: 67)
MRN: MMC-78421-3
Sex: Female
Referring: Dr. James Hartley, Internal Medicine

Examination Details

Accession: RAD-2026-07142
Exam Date: July 14, 2026
Report Date: July 15, 2026
Status: Final
Radiologist: Dr. Sarah Nakamura, M.D.

Clinical Indication

67-year-old female with a 40-pack-year smoking history (active smoker) presenting with persistent non-productive cough of six weeks' duration, unintentional 15-pound weight loss over the preceding three months, and two episodes of scant hemoptysis. The patient also reports progressive dyspnea on exertion and right-sided chest discomfort that is pleuritic in nature. No documented fever, chills, or night sweats. Prior chest radiograph from March 2026 reportedly demonstrated a right upper lobe opacity warranting further evaluation.

Comparison Study

Chest radiograph dated March 12, 2026 (Meridian Medical Center). PA and lateral views available for review at PACS workstation.

Technique

Contrast-enhanced computed tomography of the chest was performed on a 128-slice multidetector CT scanner (Siemens Somatom Definition Flash) following intravenous administration of 100 mL of iohexol (Omnipaque 350) via power injector at a rate of 3 mL/sec. Images were acquired in the axial plane with 1.0 mm collimation from the thoracic inlet through the adrenal glands. Coronal and sagittal multiplanar reformations were generated at the PACS workstation. Automatic tube current modulation was employed ($CTDI_{vol}$ 8.2 mGy; DLP 310 mGy·cm). The examination was performed during a single breath-hold at deep inspiration.

Findings

Lungs and Airways

There is a 2.8 × 2.3 × 2.5 cm spiculated, soft-tissue attenuation mass in the right upper lobe (apical segment, segment 1), abutting the right major fissure posteriorly. The mass demonstrates irregular, spiculated

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margins with radiating linear strands extending into the adjacent lung parenchyma, producing a "corona radiata" appearance. No internal cavitation, calcification, or air bronchograms are identified. The mass is intimately associated with the apical segmental bronchus, which demonstrates irregular mural thickening and luminal narrowing.

Multiple smaller nodular opacities measuring 3–8 mm in diameter are scattered bilaterally, with a predominantly peripheral and lower-lobe distribution. At least eight discrete nodules are identified in the right lung and five in the left lung. Several demonstrate a centrilobular distribution; others appear random.

Centrilobular and paraseptal emphysematous changes are noted in both upper lobes, consistent with the patient's smoking history. Mild bronchial wall thickening is present diffusely. No consolidation, ground-glass opacity, or mosaic attenuation pattern is seen.

Mediastinum and Hila

Enlarged right paratracheal lymph node measuring 1.5 cm in short-axis dimension (station 4R, IASLC classification). Subcarinal lymph node measures 1.2 cm in short axis (station 7). Right hilar lymph node measures 1.1 cm (station 10R). Left hilar and prevascular lymph nodes are within normal size limits (all $<$ 1.0 cm short axis). No anterior or posterior mediastinal masses. The heart is normal in size. Atherosclerotic calcifications are noted in the coronary arteries and thoracic aorta, age-appropriate.

Pleura and Chest Wall

No pleural effusion. No pleural thickening or pleural plaques. The right major fissure is slightly retracted toward the right upper lobe mass. No chest wall invasion or rib destruction is identified. The visualized thoracic spine and included ribs demonstrate no suspicious osseous lesions.

Upper Abdomen (Limited Evaluation)

The visualized portions of the upper abdomen demonstrate two hypodense lesions in the right hepatic lobe, measuring 1.4 cm (segment VIII) and 1.0 cm (segment VI), too small to characterize fully on this non-dedicated examination but suspicious for metastases. The adrenal glands are unremarkable bilaterally. No ascites. The visualized upper poles of both kidneys are normal.

Impression

Key findings requiring immediate attention:

1. **Spiculated right upper lobe mass** (2.8 × 2.3 cm), demonstrating irregular margins, corona radiata appearance, and associated bronchial wall thickening, highly suspicious for primary bronchogenic carcinoma. T2a by size criteria (AJCC 8th Edition).
2. **Bilateral pulmonary nodules** concerning for hematogenous metastatic disease (cM1a if confirmed).
3. **Mediastinal and hilar lymphadenopathy** (stations 4R, 7, and 10R), suspicious for nodal metastatic involvement (cN2).
4. **Hypodense hepatic lesions** in the right lobe suspicious for hepatic metastases (cM1b if confirmed).

Overall Assessment: Right upper lobe primary lung malignancy with findings concerning for both intrathoracic and distant metastatic disease. Clinical stage from imaging alone is at least cT2a cN2 cM1b — Stage IVB (AJCC 8th Edition), pending pathological confirmation.

Recommendations

1. CT-guided percutaneous core needle biopsy of the right upper lobe mass is recommended for histopathological diagnosis and molecular profiling (EGFR, ALK, ROS1, BRAF, PD-L1).
2. Whole-body PET/CT for complete staging evaluation, particularly to assess the hepatic lesions and identify any additional sites of metastatic disease.
3. Dedicated contrast-enhanced CT or MRI of the abdomen for definitive characterization of the hepatic lesions.
4. Pulmonary oncology consultation (Dr. Elena Voss, Meridian Cancer Institute, ext. 2847).
5. Pulmonary function testing prior to any potential surgical intervention.
6. Smoking cessation counseling has been initiated. Referral to the Meridian Tobacco Cessation Program.

Electronically Signed

Dr. Sarah Nakamura, M.D.
Board Certified, Diagnostic Radiology
Meridian Medical Center

July 15, 2026 · 14:32 PDT

Report Verification

Status:	Final
Reviewed by:	Dr. S. Nakamura
Transcription:	Voice Recognition
Copies to:	Dr. J. Hartley

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