

Index

Note: Page numbers of article titles are in **boldface** type.

A

- Adenomas, lung cancer and, 9
- Adrenal glands, metastasis to, from lung cancer, 9, 103–104
- Airway disease, virtual bronchoscopy of, **79–86**
 - benign disease, 81–82
 - technique for, 77–79
 - thoracic malignancies, 79–81
- Angiography, computed tomography, of pulmonary embolism, 114–117, 119
 - magnetic resonance, of pulmonary embolism, 117–118, 119
 - of pulmonary embolism, 113

B

- Barrett's esophagus, chromoendoscopy of, 88
 - diagnosis of, 85
 - high-resolution/high-magnification endoscopy of, 89–90
- Bones, metastasis to, from lung cancer, 9–10, 104–105
- Brain, metastasis to, from lung cancer, 9
- Bronchial carcinoid, imaging of, 97
- Bronchogenic carcinoma, imaging of, 18–19
- Bronchogenic cysts, imaging of, 29, 31
- Bronchoscopy, fluorescent. *See* Fluorescent bronchoscopy.
- virtual, of airway disease. *See* Airway disease.

C

- Cartilaginous lesions, of chest wall, imaging of, 19
- Central nervous system, metastasis to, from lung cancer, 9
- Chemoprevention, in fluorescent bronchoscopy, of lung cancer, 71

- Chest wall tumors, imaging of, 17–20
 - lung cancer with chest wall invasion, 17–18
 - metastatic lesions, 17
 - Pancoast tumors, 18–19
 - primary osseous and cartilaginous lesions, 19
 - soft tissue tumors, 19–20
- Chondrosarcoma, imaging of, 19
- Chromoendoscopy, of Barrett's esophagus, 88
 - of esophageal cancer. *See* Esophageal cancer.
 - of intestinal metaplasia, 88–89
- Chronic obstructive pulmonary disease, computed tomography of, future directions in, 142
- Chylothorax, mediastinal surgery and, 36
- Computed tomography, future directions in, **135–149**
 - dose reduction, 137–139
 - for chronic pulmonary obstructive disease, 142
 - for interventional procedures, 143
 - for lung cancer, 139–141
 - for pulmonary embolism, 142–143
 - image acquisition, 133–134
 - spatial resolution, 134–135
 - temporal resolution, 136–137
 - volume coverage, 135–136
 - in screening, for lung cancer. *See* Lung cancer.
 - in staging, of lung cancer, 1–2, 5–6, 9
 - with positron emission tomography, 7–8
 - of esophageal cancer, 60–64
 - of hemorrhage, after mediastinal surgery, 35
 - of lung cancer, with chest wall invasion, 17–18
 - of malignant mesothelioma, 13–16
 - of mediastinal lymph nodes, 35
 - of mediastinal masses, 24–25
 - of mediastinitis, 36
 - of Pancoast tumors, 18–19
 - of thymomas, 26–27
- Computed tomography angiography, of pulmonary embolism, 14–117, 119
- Computed tomography bronchoscopy, of airway disease. *See* Airway disease.

Computed tomography venography, of pulmonary embolism, 113–114

Computer-aided diagnosis, of pulmonary system, **125–133**

- benefits of, 124
- characterization in, 127, 129
- detection in, 126–127
- documentation and health evaluation in, 129–130
- for lung cancer, 41, 46–48, 141
- visualization in, 124–126

Cysts, mediastinal, imaging of, 29, 31–32

D

Digital radiography, in screening, for lung cancer, 42–45

Dual energy radiography, in screening, for lung cancer, 45–46

Duplex ultrasonography, of pulmonary embolism, 113

E

Embolism, pulmonary. *See* Pulmonary embolism.

Endoscopic ultrasonography, in staging, of lung cancer, 8
of esophageal cancer, 62–65

Endoscopy, high-resolution/high-magnification, of Barrett's esophagus, 89
of intestinal metaplasia and dysplasia, 89–90

Energy subtraction radiography, in screening, for lung cancer, 45–48

Esophageal cancer, imaging of, **61–69**

- chromoendoscopy in, 86–89
 - Lugol's solution in, 86–87
 - methylene blue in, 87–89
 - squamous cell carcinoma, 86–87
- computed tomography in, 60–64
- distant metastases, 59–61
- for response to therapy, 65
- high-resolution/high-magnification endoscopy in, 89–90
- lymphatic metastases, 63–65
- magnetic resonance imaging in, 60–61
- nuclear medicine studies in, 61
- positron emission tomography in, 61, 64
- primary tumors, 61–63
- ultrasonography in, 60, 62–65

F

Fibrous tumors, pleural, imaging of, 16–17

Fluorescent bronchoscopy, of lung cancer, **71–77**

- chemoprevention for, 71
- clinical experience with, 73
- clinical trials of, 71–72
- for staging, 72–73
- future directions in, 73–74
- instrumentation for, 70
- risk stratification for, 70–71
- technique for, 70

Fluorodeoxyglucose, in positron emission tomography, 94, 95, 99, 101–108

G

Ganglioneuroblastomas, mediastinal, imaging of, 29

Ganglioneuromas, mediastinal, imaging of, 29

Gastroenteric cysts, imaging of, 31

Germ cell tumors, mediastinal, imaging of, 28–29, 33

Goiter, imaging of, 27–28

H

Hematomas, retrosternal, mediastinal surgery and, 36

Hemorrhage, mediastinal surgery and, 35

Hodgkin's disease, imaging of, 27

I

Infections, mediastinal surgery and, 35–36

Intestinal dysplasia, high-resolution/high-magnification endoscopy of, 89–90

Intestinal metaplasia, chromoendoscopy of, 88–89
high-resolution/high-magnification endoscopy of, 89–90

Iodine, in nuclear medicine studies, 95

L

Lipomas, of chest wall, imaging of, 19

Liposarcoma, pleural, imaging of, 17

Liver, metastasis to, from lung cancer, 105–106

Lugol's solution, in chromoendoscopy, of esophageal cancer, 86–87

Lung cancer, fluorescent bronchoscopy of. *See* Fluorescent bronchoscopy.

missed, causes of, 41–42

positron emission tomography of, 101–107

- and management, 106–107
- and prognosis, 107
- for adrenal masses, 103–104
- for diagnosis, 101–102
- for mediastinal lymph node involvement, 102–103
- for metastasis to bone, 104–105
- for metastasis to liver, 105–106
- for staging, 7, 10, 102–106

screening for, computed tomography in, **53–59**

- and curability, 55–56
- computer-aided diagnosis in, 41, 46–48, 141
- diagnostic distribution in, 54
- false-positive diagnoses in, 54–55
- future directions in, 139–141
- regimen for, 52–53

plain films in, **43–52, 55**

- computer-aided diagnosis in, 46–48
- digital radiography in, 42–45
- energy subtraction radiography in, 45–48
- missed cancers in, 41–42
- temporal subtraction in, 48

staging of, **1–13, 102–106**

- extrathoracic disease in, 8–10
 - computed tomography in, 9
 - in adrenal glands, 9, 103–104
 - in bones, 9–10, 104–105
 - in brain, 9
 - in liver, 105–106
- magnetic resonance imaging in, 9
- positron emission tomography in, 9, 10

fluorescent bronchoscopy in, 72–73

for primary tumor, 1–4

- computed tomography in, 1–2
- magnetic resonance imaging in, 2–3
- thoracoscopy in, 3–4

mediastinal lymph nodes in, 4–8, 102–103

- computed tomography in, 5–6
- computed tomography/positron emission tomography fusion in, 7–8
- endoscopic ultrasonography in, 8
- magnetic resonance imaging in, 6–7
- positron emission tomography in, 7

with chest wall invasion, imaging of, 17–18

Lung imaging fluorescence endoscope. *See* Fluorescent bronchoscopy.

Lymph nodes, in staging, of lung cancer. *See* Lung cancer, staging of.

- mediastinal, sampling of, 33–35
- metastasis to, from esophageal cancer, 63–65

Lymphography, magnetic resonance, in staging, of lung cancer, 6–7

Lymphomas, imaging of, 27

M

Magnetic resonance angiography, of pulmonary embolism, 117–118, 119

Magnetic resonance imaging, in staging, of lung cancer, 2–3, 6–7, 9

- of esophageal cancer, 60–61
- of lipomas, of chest wall, 19–20
- of lung cancer, with chest wall invasion, 18
- of malignant mesothelioma, 13–14
- of mediastinal masses, 25
- of Pancoast tumors, 18–19

Magnetic resonance lymphography, in staging, of lung cancer, 6–7

Malignant mesothelioma. *See* Pleural tumors.

Mediastinal lymph nodes, in staging, of lung cancer. *See* Lung cancer, staging of.

- sampling of, 33–35

Mediastinitis, imaging of, 35–36

Mediastinum, imaging of, **25–42**

- computed tomography in, 24–25
- for cysts, 29, 31–32
- for germ cell tumors, 28–29, 33
- for invasive tumors, 32–33
- for lymphomas, 27
- for mediastinal lymph nodes, 33–35
- for meningoceles, 32
- for neurogenic tumors, 29
- for peripheral nerve tumors, 29
- for postoperative complications, 35–36
- for sympathetic ganglia tumors, 29
- for thymic masses, 26–27, 33
- for thyroid masses, 27–28
- magnetic resonance imaging in, 25
- nuclear medicine studies in, 25–26
- plain films in, 23–24
- ultrasonography in, 25

Meningoceles, imaging of, 32

Mesothelioma. *See* Pleural tumors.

Methylene blue, in chromoendoscopy, of esophageal cancer, 87–89

N

Nerve sheath tumors, invasive, imaging of, 33

Neural tumors, invasive, imaging of, 33

Neuroblastomas, mediastinal, imaging of, 29

Neuroenteric cysts, imaging of, 31

Neurogenic tumors, mediastinal, imaging of, 29

Non-Hodgkin's lymphoma, imaging of, 27

Nuclear medicine studies, of esophageal cancer, 61
 of mediastinal masses, 25–26
 of pulmonary embolism, 112–113, 119
 of thoracic malignancies. *See*
 Thoracic malignancies.

O

Ossseous lesions, of chest wall, imaging of, 19

P

Pancoast tumors, imaging of, 18–19

Peptides, radiolabeled, in nuclear medicine studies, 95, 97, 99

Pericardial cysts, imaging of, 31–32

Peripheral nerve tumors, mediastinal, imaging of, 29

Plain films, in screening, for lung cancer. *See*
 Lung cancer.
 of hemorrhage, after mediastinal surgery, 35
 of mediastinal masses, 23–24
 of mediastinitis, 35–36
 of pulmonary embolism, 111–112, 119
 of solitary fibrous pleural tumors, 16–17

Plaques, pleural, imaging of, 16

Pleural tumors, imaging of, 13–17
 liposarcoma, 17
 malignant mesothelioma, 13–16
 computed tomography in, 13–16
 magnetic resonance imaging in, 13–14
 positron emission tomography in, 15–16
 pleural metastasis, 17
 pleural plaques, 16
 solitary fibrous tumor, 16–17

Positron emission tomography, instrumentation for, 94–95
 of esophageal cancer, 61, 64
 of lung cancer. *See* Lung cancer.
 of malignant mesothelioma, 15–16

Pulmonary embolism, imaging of, **113–124**
 algorithm for, 118–120
 angiography in, 113
 computed tomography angiography in,
 114–117, 119

 computed tomography in, future directions in,
 142–143
 magnetic resonance angiography in,
 117–118, 119
 plain films in, 111–112, 119
 venous imaging in, 113–114, 119
 ventilation-perfusion scintigraphy in,
 112–113, 119

R

Radiolabeled peptides, in nuclear medicine studies, 95, 97, 99

Receiver operating characteristic, in statistical analysis, of lung cancer, 41–42

Retrosternal hematomas, mediastinal surgery and, 36

S

Single-photon emission computed tomography, instrumentation for, 94

Soft tissue tumors, of chest wall, imaging of, 19–20

Somatostatin, in nuclear medicine studies, 95, 97, 99

Squamous cell carcinoma, esophageal, 85
 chromoendoscopy of, 86–87

Squamous cell dysplasia, esophageal, 86

Stenoses, airway, virtual bronchoscopy of, 81–82

Sympathetic ganglia tumors, mediastinal, imaging of, 29

T

Technetium, in nuclear medicine studies, 95, 99

Temporal subtraction, in screening, for lung cancer, 48

Thallium, in nuclear medicine studies, 95

Thoracic duct injury, mediastinal surgery and, 36

Thoracic malignancies, lung cancer. *See* Lung cancer.
 nuclear medicine studies of, **95–112**
 fluorodeoxyglucose in, 99, 101, 107–108
 instrumentation for, 94–95
 radiolabeled peptides in, 95, 97, 99
 radionuclides in, 95
 virtual bronchoscopy of, 79–81

Thoracoscopy, in staging, of lung cancer, 3–4

Thymic masses, imaging of, 26–27

Thymomas, imaging of, 26–27, 33

Thyroid masses, imaging of, 27–28

U

Ultrasonography, duplex, of pulmonary embolism, 113
endoscopic, in staging, of lung cancer, 8
of esophageal cancer, 62–65
of esophageal cancer, 60
of mediastinal masses, 25

V

V/Q scans, of pulmonary embolism, 112–113, 119

Venography, computed tomography, of pulmonary embolism, 113–114

Venous imaging, of pulmonary embolism, 113–114, 119

Ventilation-perfusion scintigraphy, of pulmonary embolism, 112–113, 119

Video-assisted thoracoscopic surgery, for mediastinal lymph nodes, 34–35

Virtual bronchoscopy, of airway disease. *See* Airway disease.