Noninvasive Clinical Staging of Primary Lung Cancer

Lung cancer (https://www.radiologyinfo.org/en/info/lung-cancer) is the leading cause of cancer-related deaths in both men and women in the United States. The major cause of lung cancer is cigarette smoking, but other risks include exposure to secondhand smoke, environmental radon, occupational exposures, and air pollution.

There are two main forms of lung cancer: non–small-cell lung cancer (NSCLC) and small-cell lung cancer (SCLC). NSCLC is the most common cancer and accounts for approximately 85% of cases, and SCLC accounts for approximately 15%. Staging determines the extent that the cancer has grown and spread. Numbers from 0 to 4 (I, II, III, IV) refer to how far the cancer has spread, with stage IV being the most advanced stage.

Usually, appropriate imaging tests for the staging of NSCLC are an initial CT chest (https://www.radiologyinfo.org/en/info/chestct) with intravenous (IV) contrast or without IV contrast followed by FDG-PET/CT (https://www.radiologyinfo.org/en/info/pet) skull base to mid-thigh (uses IV radioactive sugar to find metabolic activity in cancer cells) and MRI head (https://www.radiologyinfo.org/en/info/mri-brain) without/with IV contrast (to look for cancer spread to the brain) which are obtained based on the initial CT chest and other test results. CT head (https://www.radiologyinfo.org/en/info/headct) , CT abdomen/pelvis (https://www.radiologyinfo.org/en/info/abdominct) , MRI chest (https://www.radiologyinfo.org/en/info/chestmr) , MRI abdomen (https://www.radiologyinfo.org/en/info/mri-abdomen-pelvis) , and whole-body bone scan (https://www.radiologyinfo.org/en/info/bone-scan) may be appropriate depending on the situation. Similarly, to stage SCLC, CT chest with IV contrast, FDG-PET/CT skull base to mid-thigh, MRI head without/with IV contrast, and CT abdomen/pelvis with IV contrast are usually appropriate. CT head, CT abdomen/pelvis, MRI chest, MRI abdomen, and whole-body bone scan may be appropriate.

For more information, visit the Lung Cancer (https://www.radiologyinfo.org/en/info/lung-cancer) page.

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