Case 408

3. bcd

【Progress】

Compared with images of chest CT two years before, the mass in the lower right lobe, increased in size on the present chest CT. Then, she was scheduled to take histologic biopsy once more in other hospital where she once took biopsy.

【Discussion】

Aspergillus is one of the fungi that habit everywhere humans contact and inhale in a usual life. When a human with healthy immune system, aspergilli is excluded as well as other fungi or viruses. However, Aspergillos can be harmful when immune systems of humans are in either case of hypersensitivity, normal immune system, or immunocompromised (1-3).

In case of hypersensitive to Aspergillosis, hypersensitivity pneumonia or allergic bronchopneumonia can occur. Asthmatic attacks and slight fever appear as symptoms associated with elevation of eosinophils count, β-glucan and Ig E values. Gland glass opacity and/or bronchopneumonia in pulmonary area associated with bronchus wall thickening with mucoid impaction of high attenuation is characteristic of allergic bronchopulmonary Aspergillosis (1-4).

Aspergillosis can occur in a patient with healthy immune system when the one has the injured foci such as cavity of tuberculosis, nontuberculous mycobacterium (NTM) infection, pulmonary sequestration, pulmonary cyst. Aspergillus habit in a cavity and proliferate because immune system is hard to approach, creating a fungus ball in the cavity. These situation causes hemoptysis that can be treated by bronchial artery embolization (1-3, 5).

Aspergillosis can occur in immunocompromised patients who obtained organ transplants or stem cells transplants or acquired immunocompromised patients who got long-term steroid treatment such as rheumatoid arthritis, auto-immune disease or got chemotherapy for tumor bearing. In this situation, Aspergillus proliferate and grow expansive, called invasive Aspergillosis that is categorized into semi-invasive Aspergillosis and invasive Aspergillosis.

Semi-invasive Aspergillosis is in the situation that the fungi invade to airway system, inducing pneumonia with or without cavity formation. CT images of semi-invasive Aspergillosis mimic those of Aspergillus growth in the damaged lung of tuberculosis, NTM or pulmonary cyst with intact immune potency (1-3, 6).

Meanwhile, invasive Aspergillosis indicates that Aspergillus invade to both airway stem and pulmonary vessels. CT images of invasive Aspergillosis induce a characteristic image of Halo sign on chest CT. Halo sign implies the ground glass opacity surrounding a consolidative mass corresponded to lightening coming from a sacred solid human.

Consolidative mass is reported a infarcted necrotic mass originated from pulmonary vessels occlusion and the ground glass opacity surrounding the infarcted area implies airway invasion (1-3, 6).

In our case, a consolidative mass with the ground glass opacity in the surroundings. Imaging diagnosis lists semi-invasive or invasive Aspergillosis, granulation pneumonia, mucinous infiltrative cancer.

【Summary】

We presented a seventy-eight-year-old female presented in our hospital. Past illness history revealed she had a mass in lower right lobe two years before that mildly was growing. Chest CT depicts a relatively large expansive mass associated with ground glass opacity in the surrounding mimicking Halo sign at right lower lobe. It is borne in mind that Aspergillosis can infect patients with hyperallergic, intact immune system, and immunocompromised. CT images differ in each immune system. In short, hypersensitive to Aspergillus causes hypersensitive bronchopneumonia with mucoid impaction of bronchus that appears high attenuation sputum or bronchus wall. The damaged lungs due to tuberculosis, NTM, pulmonary cyst is susceptible to infection of Aspergillus, causing fungus balls in cavities. In case of immunocompromised, bronchopneumonia with cavity or without is found due to invasion to airway system. Further, in case of both invasion of Aspergillus to airway system and pulmonary vessels, a lesion of a mass in the center and ground glass opacity in the surrounding called Halo sigh appear.

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2025.10.17