Image Case I Image Case II

Clinical Presentation

Immunocompromised female patient who received an allogenic bone marrow transplantation for acute myeloid leukaemia.

Thorax frontal

CT1 March'99

Control CT2 Sept'99

Control CT3 Dec'99

What is your diagnosis?

Clinical Presentation

Left chest pain with fatigue and weight loss.

**What is your diagnosis?
What other investigation
would you suggest?**

Images Cases are adapted from the CD-Rom Thoracic Imaging, "Le Discours de la Méthode"

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Image Case I - Solution

The chest X-ray shows a left retroclavicular opacity.

On CT images, a ground glass infiltrate surrounding the round opacity is suggestive of invasive aspergillosis ("halo" sign). CT1 shows a substantial nodular alveolar infiltrate with a peripheral anterior air crescent. The diagnosis was established by transbronchial biopsy.

CT2, taken after 6 months of antifungal treatment, shows a residual pulmonary cavity with thickened walls.

Radiological progression is slow, and in this case favourable, with near-complete regression of the cavity 9 months later (CT3).

Commentary

Initial radiological findings include one or several alveolar parenchymal opacities sometimes associated with an air bronchogram, measuring up to 5 cm in diameter. Aspergillosis is the most common pulmonary mycosis in immunocompromised patients. The most frequent pathogen is *Aspergillus fumigatus*, a mycelial ubiquitous fungus widespread in the soil. *Aspergillus* causes a blood-borne invasive necrotising pneumonia, with pulmonary infarction which frequently leads to cavitation.

The diagnosis can be established by transthoracic needle biopsy.

Thorax frontal

CT1 March'99

Control CT2 Sept'99

Control CT3 Dec'99

References

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Image Case II - Solution

The chest X-ray shows nodular thickening of the parietal and mediastinal pleura, associated with volume loss of the left hemithorax.

CT images confirm the presence of irregular nodular thickening of the pleural with pericardial involvement.

Commentary

Mesothelioma is a primary cancer of the pleura or peritoneum. The latent period between the first exposure to asbestos and the development of the tumour is approximately 30 to 40 years. The threshold dose is unknown, and mesotheliomas have been known to occur after only a few months of exposure to asbestos. A focal, nodular, irregular thickening of the pleura is suggestive of a mesothelioma. Varying degrees of pleural effusion can also be seen.

Thorax frontal

Chest CT mediastinal window

Chest CT lung window

Pericardium

Pleura

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