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Intracavitary Instillation of Antifungal Medication

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ABSTRACT

In our case, the patient was treated with intracavitary instillation of amphotericin B under CT guidance. The mixed application of iohexol injection improves the accuracy of intracavity drug injection. The method was rarely reported before.

A 55-year-old man presented with a 1-year history of cough and bloody sputum. Computed tomography (CT) of the thorax showed a cavity with spherical mass consolidation in the left upper lobe apical segment and multiple cystic cavities in the right upper lobe apical segment (Figure 1A–C). The bronchoalveolar lavage fluids (BALFs) were collected via bronchoscopy and tested by metagenomic next-generation sequencing (mNGS). mNGS reported *Aspergillus fumigatus* in BALFs. Based on the radiological finding and microbiological evidence, the patient was diagnosed with chronic cavitary pulmonary aspergillosis (CCPA). The patient was intermittently treated with voriconazole (200 mg, bid, po) for 3 months. However, the patient did not insist on taking voriconazole due to economic reasons and no significant improvement in symptoms. Thus, we chose intracavitary instillation of antifungal medication. Under CT guidance, the catheter was precisely inserted into the cavity in the left upper lobe. Subsequently, 20 mg amphotericin B (dissolved in 5% glucose, 10 mL) mixed with 1 mL (0.3 g I) iohexol was injected into the cavity via the catheter (Figure 2A–C). On reviewing the CT scan of the thorax 1 month later, the aspergilloma was cracked, the cavity was collapsed and the wall had thickened (Figure 3A–C). In addition, the patient's symptom of haemoptysis was alleviated.

CCPA, formerly called complex aspergilloma, usually shows multiple cavities, which may or may not contain an aspergilloma. Systemic azole treatment is effective in most patients and voriconazole is strongly recommended [1, 2]. Direct delivery of antifungal medication to the cavity can increase aspergilloma penetration [3, 4]. In our case, the patient was treated with intracavitary instillation of amphotericin B under CT guidance. The mixed application of iohexol injection improves the accuracy of intracavity drug injection.

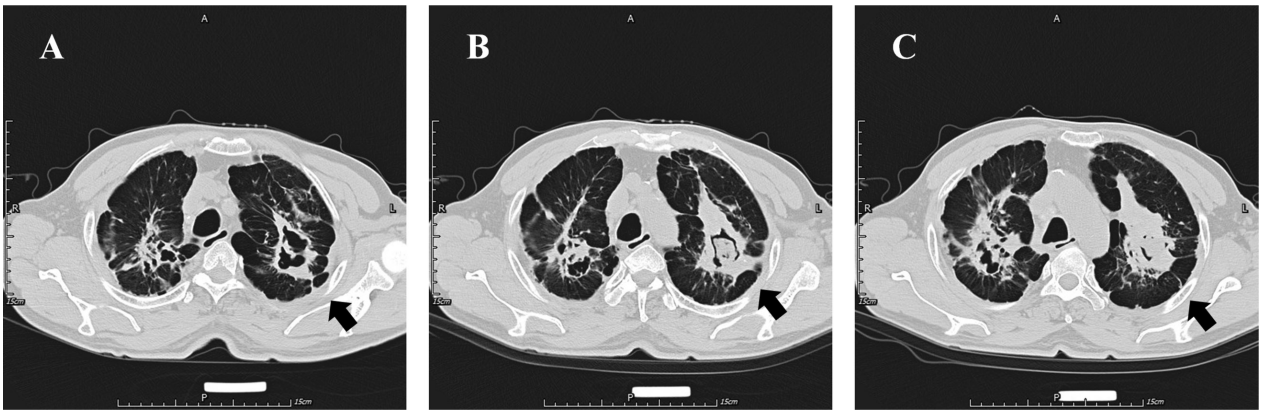

FIGURE 1 | (A–C) CT of the thorax before treatment showed cavity with spherical mass consolidation-aspergilloma (black arrow) in the left upper lobe apical segment and multiple cystic cavities in the right upper lobe apical segment.

FIGURE 2 | (A–C) Demonstration of CT-guided catheter placement within aspergilloma cavities and the mixed application of Iohexol injection prompted that the drug was injected into the cavity (white arrow).

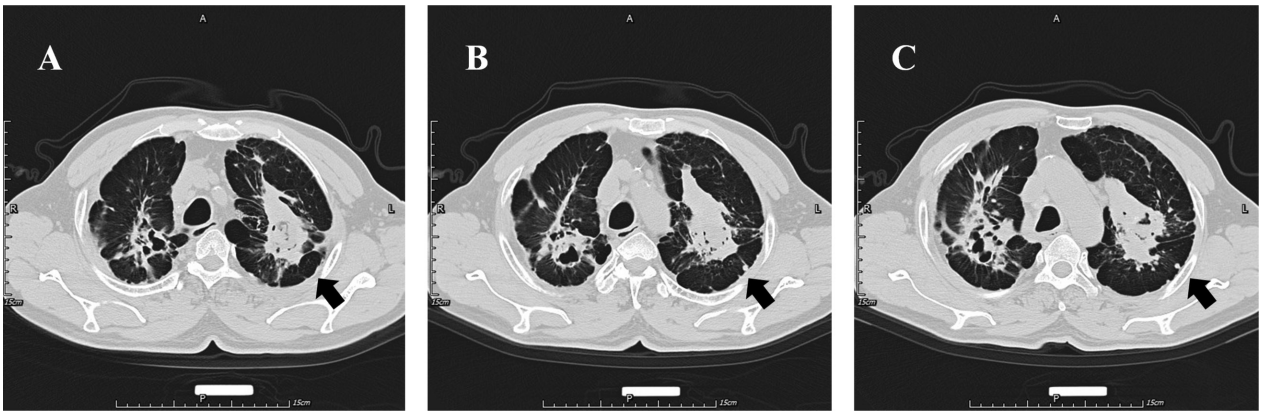

FIGURE 3 | (A–C) CT of the thorax after treatment showed the aspergilloma was cracked, the cavity was collapsed and the wall has thickened (black arrow).

Author Contributions

The authors contributed to the writing, review, and final approval of the manuscript.

Ethics Statement

Patient consent for publication has been obtained prior to submission. I attest that the patient described in the manuscript has completed and signed the consent form provided by *Respirology Case Reports*. I attest that the original of the signed form is held by the treating institution. The participant gave informed consent to participate in the study before taking part.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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