

NONTUBERCULOUS MYCOBACTERIAL LUNG DISEASE (*Mycobacterium xenopi*) IN A PATIENT WITH EATING DISORDER WITHOUT OTHER RISK FACTORS



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Diseases of the Respiratory System

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BACKGROUND

Nontuberculous mycobacteria (NTM) are a wide group of environmental bacteria that generally cause diseases in immunocompromised hosts or patients with chest or lung abnormalities; however, NTM are increasingly recognized as cause of lung diseases in immunocompetent hosts in which risk factors are not completely known. Some authors hypothesized that malnutrition and eating disorders like anorexia nervosa could be risk factors that may promoting NTM lung diseases. Abnormal immune response due to severe malnutrition and purging behaviours/aspiration may play a role in the development of NTM lung infections in these patients.

METHODS

We described the case of a 29-year-old woman with a history of anorexia nervosa (AN) who accessed our Unit for the detection of bilateral lung cavities and nodules mainly in the upper lobes on chest X-ray and afterwards on chest CT during the application process for haematopoietic stem cell donation.

RESULTS

The patient had no previous respiratory diseases. At presentation she had a BMI of 17.7 and did not exhibit any respiratory or systemic symptoms. It was unclear whether she engaged in purging behaviours; however, in the psychiatric evaluation the eating disorder was found to be under control. Extrapulmonary involvement was ruled out through PET-CT, and systemic diseases such as ANCA-associated vasculitis or other autoimmune disorders were excluded through biochemical analyses. The interferon gamma release assay was negative. The patient underwent bronchoalveolar lavage which tested negative for mycobacteria (both molecular test and culture); the procedure was complicated by the development of pneumonia that needed broad-spectrum empirical antibiotic therapy. Given the progression of cavitary lesions on the follow-up CT scan at three weeks, a multidisciplinary discussion led to the decision to perform a surgical lung biopsy. Histological examination revealed necrotising granulomas. The surgical sample was subjected to molecular testing for atypical mycobacteria (Genotype CM-direct Test) which was positive for *Mycobacterium xenopi*, a finding further confirmed by culture examination of the surgical sample.

CONCLUSIONS

The peculiarity of our case describing a young woman with AN and *Mycobacterium xenopi* infection is paucisymptomaticity in terms of infection. Further prospective investigations are needed to determine whether eating disorders with purging behaviours and NTM lung infections may be related and whether reversal of the eating disorder improves or prevents NTM lung infections.

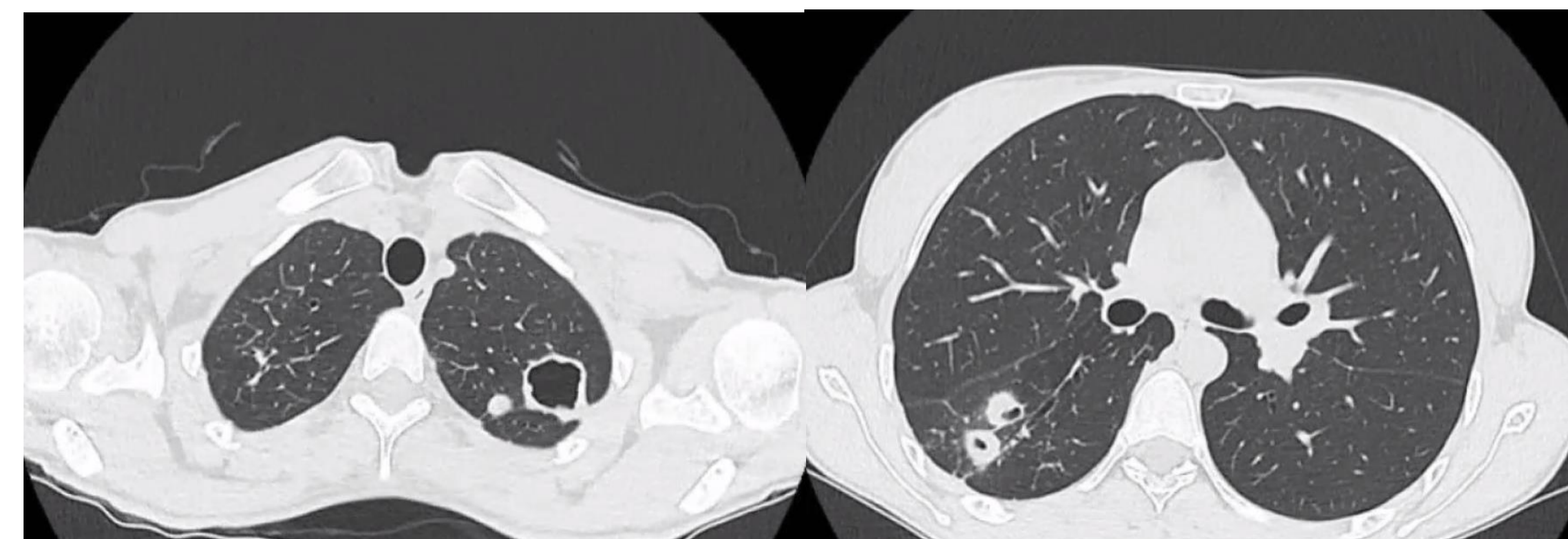


Figure 1: First Chest CT scan with which the patient came to the attention of our Unit. It shows bilateral lung cavities and nodules predominantly in the upper lobes.

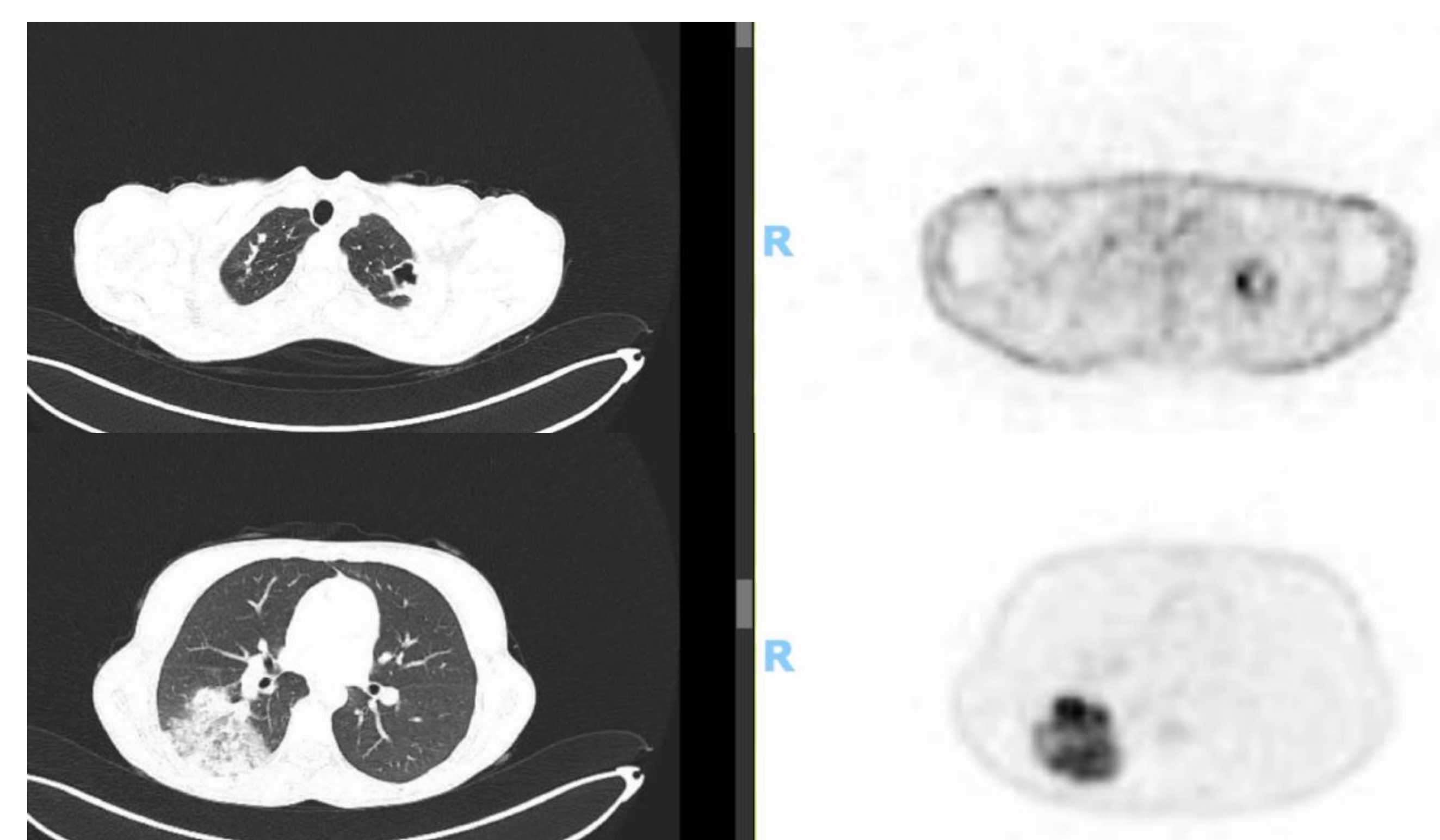


Figure 2: PET-CT showing FDG hypercaptation of the bilateral nodules and cavitations. It also demonstrates the development of right lower lobe pneumonia following bronchoalveolar lavage procedure.

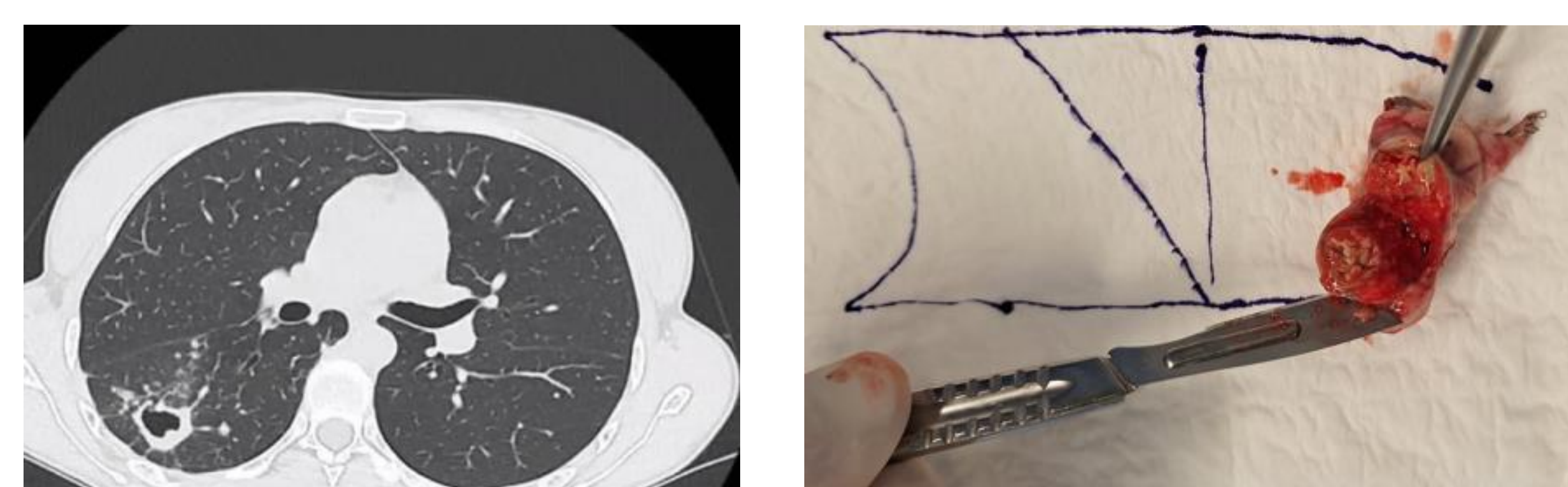


Figure 3 (left): Chest CT scan at 2 months showing disease progression with the appearance of new nodules and cavitations, as well as an increase in size of the pre-existing lesions.

Figure 4 (right): Surgical biopsy of one nodule of the right upper lung lobe revealing a necrotising granuloma.

TO SUM UP

- 1) Malnutrition and eating disorders like anorexia nervosa could be risk factors that may promoting NTM lung diseases.
- 2) We described the case of a 29-year-old woman with a history of anorexia nervosa (AN) who accessed our Unit for the detection of bilateral lung cavities which did not exhibit any respiratory or systemic symptoms.
- 3) We diagnosed *Mycobacterium xenopi* pulmonary infection through surgical biopsy (molecular test and culture on surgical sample).
- 4) It is not clear if eating disorders with purging behaviours and NTM lung infections may be related and whether reversal of the eating disorder improves or prevents NTM lung infections.