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A Rare Case Of Pulmonary Candidiasis In An Immunocompetent

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Abstarct :
Pulmonary candidiasis is a rare entity predominant in immunosuppressed patients , its true incidence ranges from 0.23% to 0.4%. Its occurrence in immunocompetent patients has been rarely described in the literature and its diagnosis is mainly based on bronchoalveolar lavage We report a rare case of pulmonary candidiasis in an immunocompetent patient.

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I. Introduction :

Pulmonary mycoses are rare opportunistic fungal infections and often fatal [1] , it is predominantly seen in immunosuppressed patients and carries a significant mortality [2]

The existence of Candida pneumonia has been largely debated over the years due to its rarity and presence of frequent colonization. [2]

The true incidence of Candida pneumonia ranges from 0.23% to 0.4% [3, 4], it is a rare entity , we report a rare case of candida pneumonia in an immunocompetent patient who was well developed under antifungal treatment.

II. Case Report:

We report the case of a 80-year-old women who was neither treated for tuberculosis nor has had any recent tuberculosis contagion, diabetic for 20 years on oral antidiabetics, and with no others notable pathological history or chronic smoking. The patient has reported a productive cough for 10 days, with mucopurulent sputum associated with stage IV of mMRC dyspnea and chest pain. , without hemoptysis, in the context of fever and deterioration of the general state.

Clinical examination finds a conscious patient, polypneic at 25 cycles per minute, saO2 = 85% at ambient air, with snoring rales on pleuropulmonary examination. The posteroanterior chest roentgenogram showed heterogeneous opacity of the upper two thirds of the right thoracic hemifield (Figure 1).

The thoracic computed tomography (CT) showed a parenchymal condensation with air bronchogram suggestive of upper and middle lobe pneumonia (Figure 2).

The patient received antibiotic treatment for her pneumonia, but the evolution was marked by clinical and radiological worsening ,with abscess and appearance of micronudules. (figure 3).

A bronchial fibroscopy was made objectifying an inflammatory aspect of the mucosa with the presence of purulent secretions from the entire right bronchial tree ,a bronchoalveolar lavage was done with bacteriological research, BK research and mycological research, the culture of which showed more than 50 colonies of candida tropicalis.

A cytobacteriological examination of the urine was also in favor of candidiasis.

The diagnosis of pulmonary candidiasis was retained and the patient was put on an antifungal treatment with a good clinical, biological and radiological evolution with cleaning on the chest X-ray. (figure 4)

One month later, the patient experienced a recurrence of coughing, producing mucopurulent sputum, along with a fever reaching 39°C.

The posteroanterior chest roentgenogram showed a radiological worsening with the reappearance of an opacity occupying the entire right hemithorax, accompanied by tracheal deviation and a basal right opacity consistent with an associated pleural effusion.(Figure 5)

Given this clinical and radiological worsening, we considered:

1. Pulmonary tuberculosis, although the initial clinical and radiological improvement does not support this diagnosis.

2. Nosocomial pneumonia, considering the patient had been hospitalized in the preceding month.
3. Progression of her pulmonary candidiasis.

An other bronchial fibroscopy was made objectifying an inflammatory aspect of the mucosa with the presence of purulent secretions from the entire right bronchial tree ,a bronchoalveolar lavage was performed with bacteriological examination, search for BK (tuberculosis), and mycological examination, all of which returned negative results

The patient was put back on antibiotic therapy without improvement. We re-evaluated the case with parasitologists and concluded that the patient had received an insufficient duration of antifungal treatment. It was decided to put the patient back on Fluconazole for an extended period of 2 months: Loading dose of 800 mg/day on the first day, Then 400 mg/day for 1 month, Followed by 200 mg/day for 1 month.

The course was marked by a clear clinical improvement with the disappearance of the cough, absence of fever, negative results of infectious test, and radiological clearance. (Figure 6)

III. Discussion:

Candida is an opportunistic pathogen and the most commonly isolated fungal genus in humans., it is considered a part of the normal microflora of the skin, oral cavity, gastrointestinal mucosa, respiratory tract, and genitourinary tract [5].

There are currently no methods that can differentiate between commensalism,

Colonization, and infection with Candida species. In immunocompromised patients, Candida is frequently isolated from respiratory samples (sputum or bronchoalveolar lavage [BAL]), though it should be interpreted with great caution. [2]

The true incidence of Candida pneumonia ranges from 0.23% to 0.4% [3, 4].

The predominant risk factors for invasive candidiasis are immunocompromised host, repeated use of broad-spectrum antibiotics, severe neutropenia, chemotherapy-induced mucositis, and prolonged hospital stay [6, 7]. In addition, there are several other intrinsic factors like the release of hydrolytic enzymes and an ability to change from yeast form to hyphae which is a more virulent form that causes invasive disease. Hematogenous spread and microaspiration of oropharyngeal and gastric contents are the main triggers for Candida lung infiltration. The concurrent esophageal candidiasis and upper respiratory tract colonization were found commonly in patients with pulmonary candidiasis.

True invasive Candida pneumonia is so rare in immunocompetent patients that its very existence is debated. When it occurs, it is attributed either to seeding of the lungs from hematogenous dissemination as in our patient, or (less likely) to aspiration of colonized oropharyngeal or gastric contents [8] .

The clinical presentation is diverse and non specific with many patients with profound neutropenia only having fever as a presenting symptom. Radiological findings are also nonspecific, which makes the diagnosis even more challenging. Bronchopneumonia,

Nodular opacities, lung abscess, and cavitary lesion are described as X-ray finding of cases , In CTthorax, the most common finding is the presence of nodules [9–10].

The diagnosis of Candida pneumonia is challenging, as histology is rarely available clinically, and less invasive means fail to distinguish infection (a rarity) from colonization (which is common). Numerous studies have demonstrated that the incidence of Candida isolation from pulmonary biopsies or BAL fluid in critically ill mechanically ventilated patients is around 40%–50%, whereas the incidence of true Candida pneumonia is considerably

Lower [8,11,12] , An informative study demonstrated that Candida colonization of the lungs occurs in roughly 40% of immunocompetent critically ill patients, based on rigorous post-mortem histologic examination. [11]

Isolation of Candida from sputum samples should be discouraged, which always indicates contamination. The role of serological assay like beta-D-glucan (BDG) in invasive candidiasis

was analyzed by Su et al. [13]. According to their report, endotracheal aspirate and BAL BDG were better predictors of suspected pulmonary candidiasis in comparison with serum BDG. Measuring serum BDG has no value in predicting pulmonary Candida infections, particularly in the absence of concurrent candidemia [2] ,Definitive diagnosis of pulmonary Candida infection depends on histologic demonstra tion of yeast as well as inflammatory cells in lung tissue.

Despite considerable literature demonstrating that detection of Candida in the respiratory tract is associated with increased risk of bacterial pneumonia, multidrug-resistant pathogens, and morbidity and mortality, the clinical utility of eradication of Candida with antifungal drugs remains a matter of debate. [1]

Treatment of Candida pneumonia is largely debated with the lack of practice guidelines due to the rarity of disease and difficulty in diagnosis. Interpretation among clinicians on the isolation of Candida species is variable, which can be contamination, commensalism, colonization, or invasive disease. So, the decision regarding antifungal therapy in such patients remains controversial. [2]

IV. Conclusion :

Pulmonary candidiasis is a rare entity, its occurrence in immunocompetent patients is exceptional, and its diagnosis is mainly based on bronchoalveolar lavage.Tthrough our work we report a case of pulmonary candidiasis in an immunocompetent patient, in order to focus on this entity and sensitize practicing physicians to seek pulmonary candidiasis in the face of pneumonitis that does not improve under antibiotic treatment in order to improve the management of our patients.

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Figures :

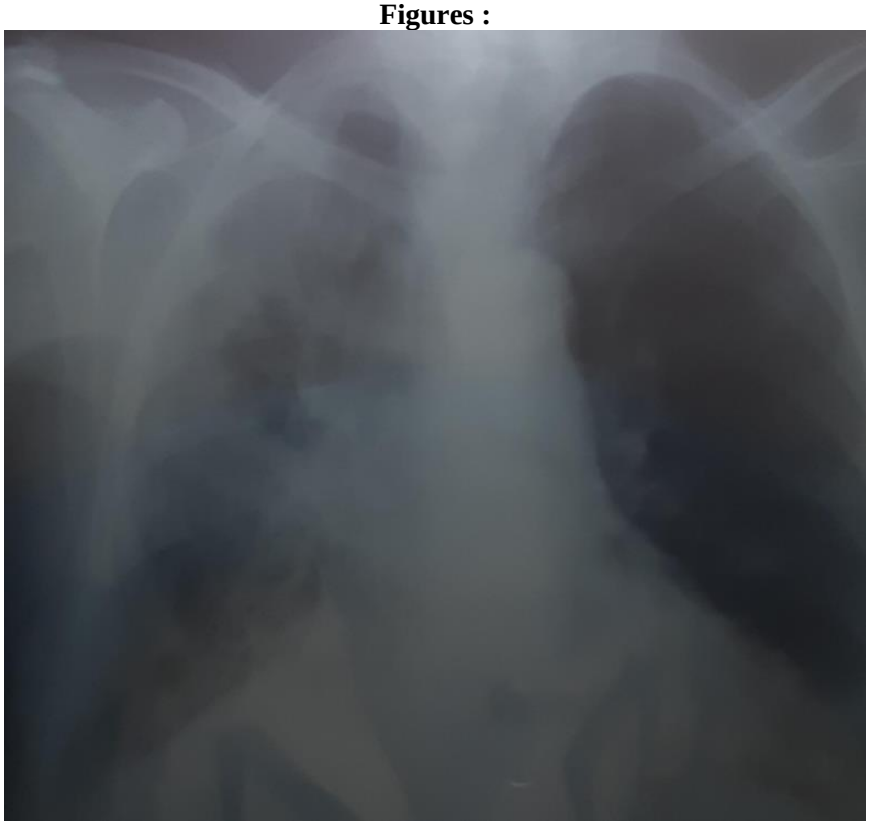

Figure 1 : Posteroanterior Chest Roentgenogram Showed Heterogeneous Opacity Of The Upper Two Thirds Of The Right Thoracic Hemifield .

Figure 2 : The Thoracic Computed Tomography (CT) Showed A Parenchymal Condensation With Air Bronchogram Suggestive Of Upper And Middle Lobe Pneumonia .

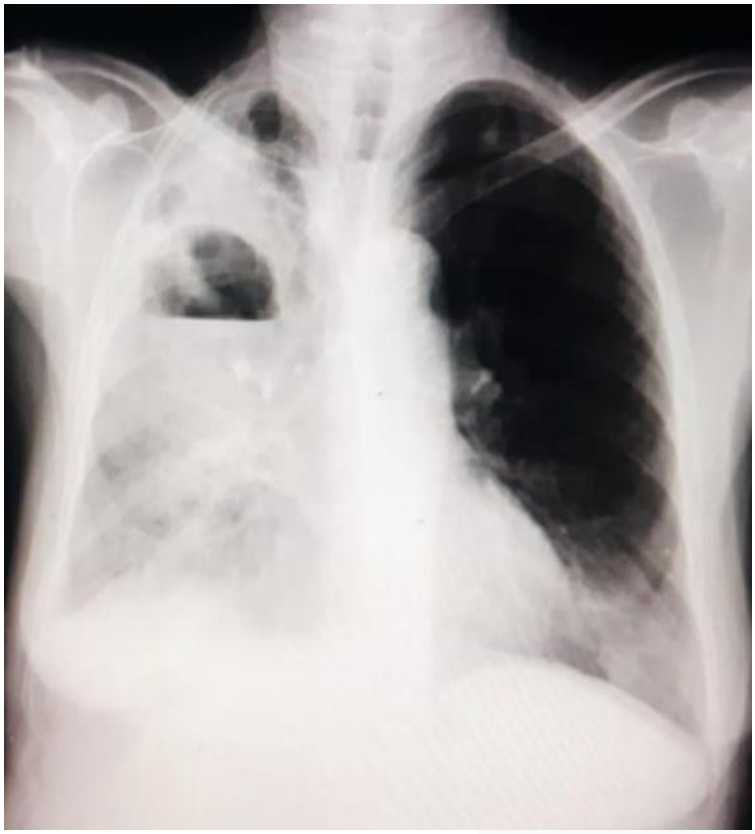

Figure 3 : Posteroanterior Chest Roentgenogram Showed Radiological Worsening ,With Abscess.

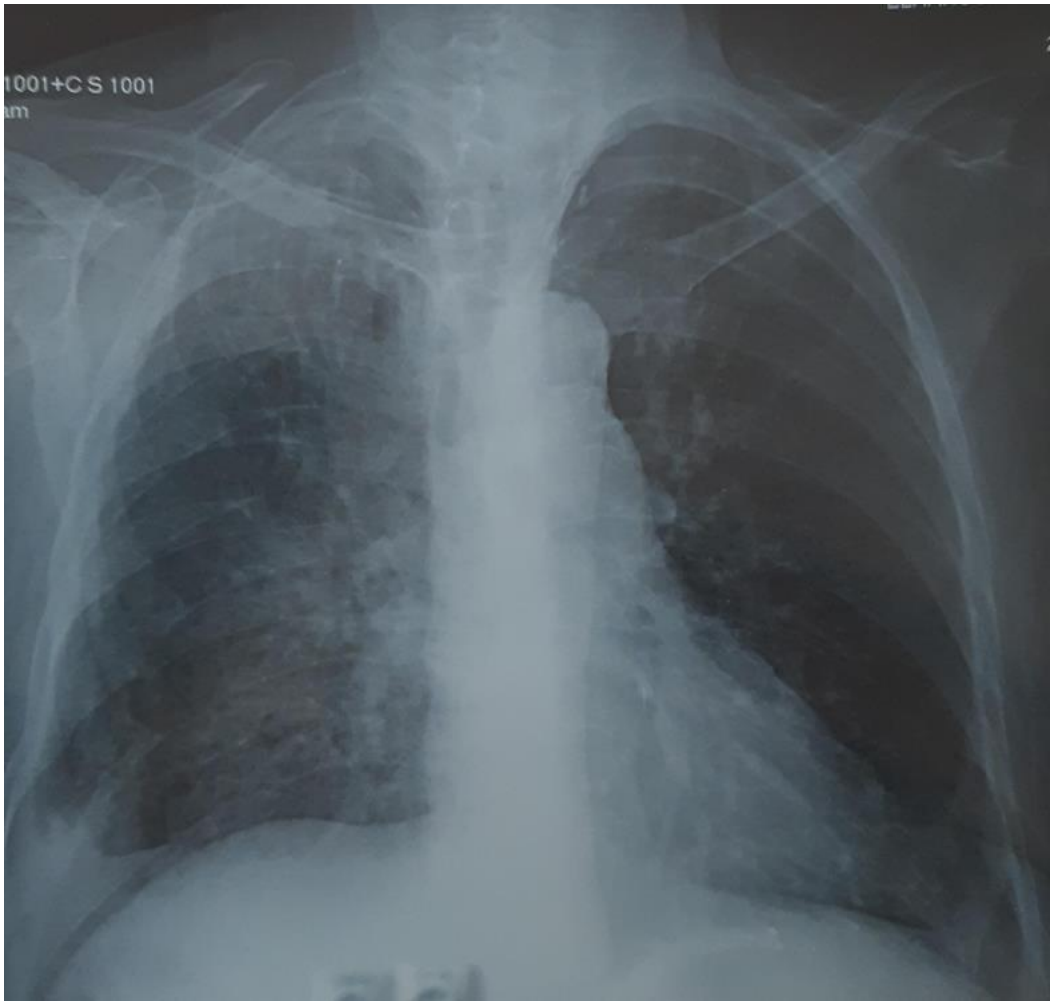

Figure 4 :Control Chest X-Ray Objectifying A Radiological Cleaning After Antifungal Treatment.

Figure 5 : The Posteroanterior Chest Roentgenogram Showed A Radiological Worsening With The Reappearance Of An Opacity Occupying The Entire Right Hemithorax, Accompanied By Tracheal Deviation And A Basal Right Opacity Consistent With An Associated Pleural Effusion

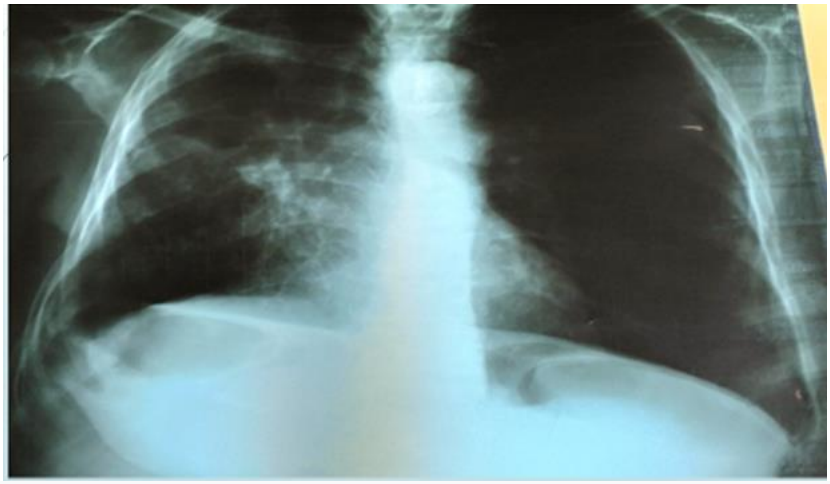

Figure 6 : The Posteroanterior Chest Roentgenogram Showed A Improvement With Radiological Cleaning