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RESEARCH ARTICLE

PULMONARY CRYPTOCOCCOSIS IN AN IMMUNOCOMPETENT PATIENT: ABOUT A CASE

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Abstract

Cryptococcosis is a rare but severe infection caused by the fungus *Cryptococcus neoformans*. It typically affects immunocompromised patients. We report a case of pulmonary cryptococcosis in an immunocompetent patient, where the diagnosis was confirmed histologically through bronchial biopsy and by detecting cryptococcal antigen in the blood. Treatment with a combination of amphotericin B and fluconazole was initiated. The often nonspecific clinical presentation and the rarity of the condition frequently lead to a diagnostic delay, which can be detrimental to the patient.

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Introduction:-

Cryptococcosis is a serious infection caused by a fungus, *Cryptococcus neoformans*. It usually occurs in immunocompromised patients, especially during AIDS, lymphomas and in organ transplant patients. Its occurrence is rare outside these contexts. We report a case of pulmonary cryptococcosis in an immunocompetent patient.

Case presentation:-

29-year-old patient, without significant pathological history, presenting with exertional dyspnea and a dry cough, associated with a deterioration in general condition and a fever of 38.5°C. The clinical examination reveals a conscious patient, stable in terms of hemodynamics and respiratory function (SaO₂ = 95%). The pleuropulmonary examination reveals a right-sided condensation syndrome. The neurological and cutaneous examination is normal, and the rest of the somatic examination does not present any particularity.

A chest CT scan revealed an excavated lesion in the right lower lobe, associated with bilateral pulmonary nodules, some of which were also excavated. A biological assessment was performed, revealing the absence of hyperleukocytosis and lymphopenia. The liver function test was disturbed. Serology for hepatitis B and C was negative, as was HIV serology. Tests for Koch's bacilli in the sputum were negative both by direct microscopic examination and by the GeneXpert test.

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A bronchial fibroscopy was performed, showing thickening of the spurs of the right lower lobe. A biopsy of this thickening revealed, on pathology, bronchial tissue with signs of mycotic infection, the appearance of which suggests cryptococcosis. The search for cryptococcosis antigens in the blood was positive. The culture of the fibroaspiration fluid remained negative. The lumbar puncture was normal.

Treatment was initiated with amphotericin B and fluconazole (400 mg/day for 15 days), with initial clinical improvement. However, the patient was lost to follow-up after this phase.

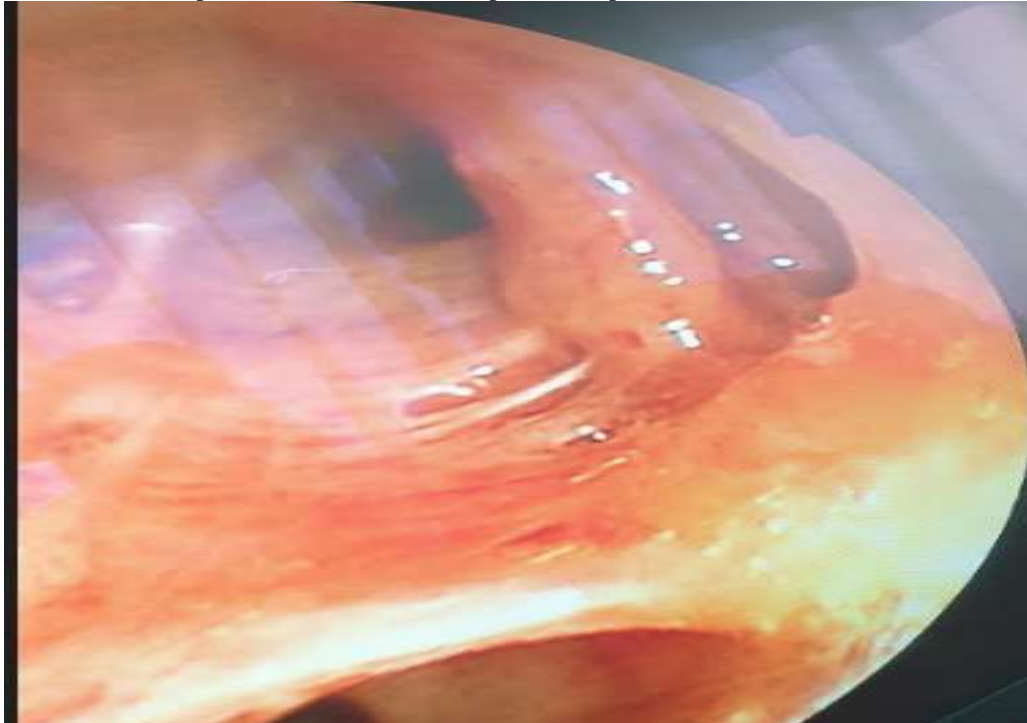


Image 1:-Endoscopic appearance: thickening of the right lower interlobar spur.

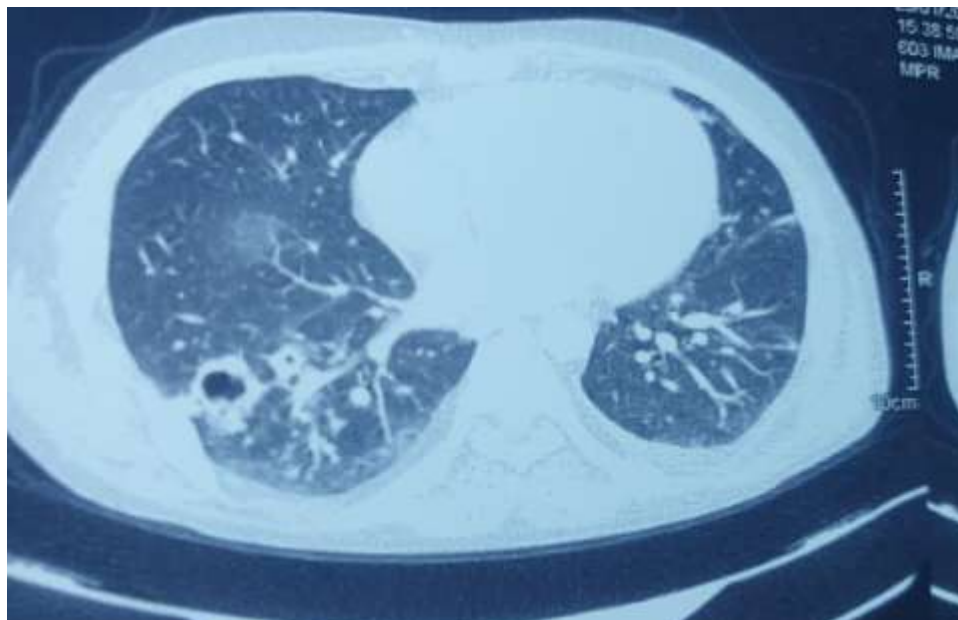


Image 2:-Thoracic CT scan: parenchymal window, axial section showing an excavated lower right lobar lesion associated with bilateral excavated pulmonary nodules for some.

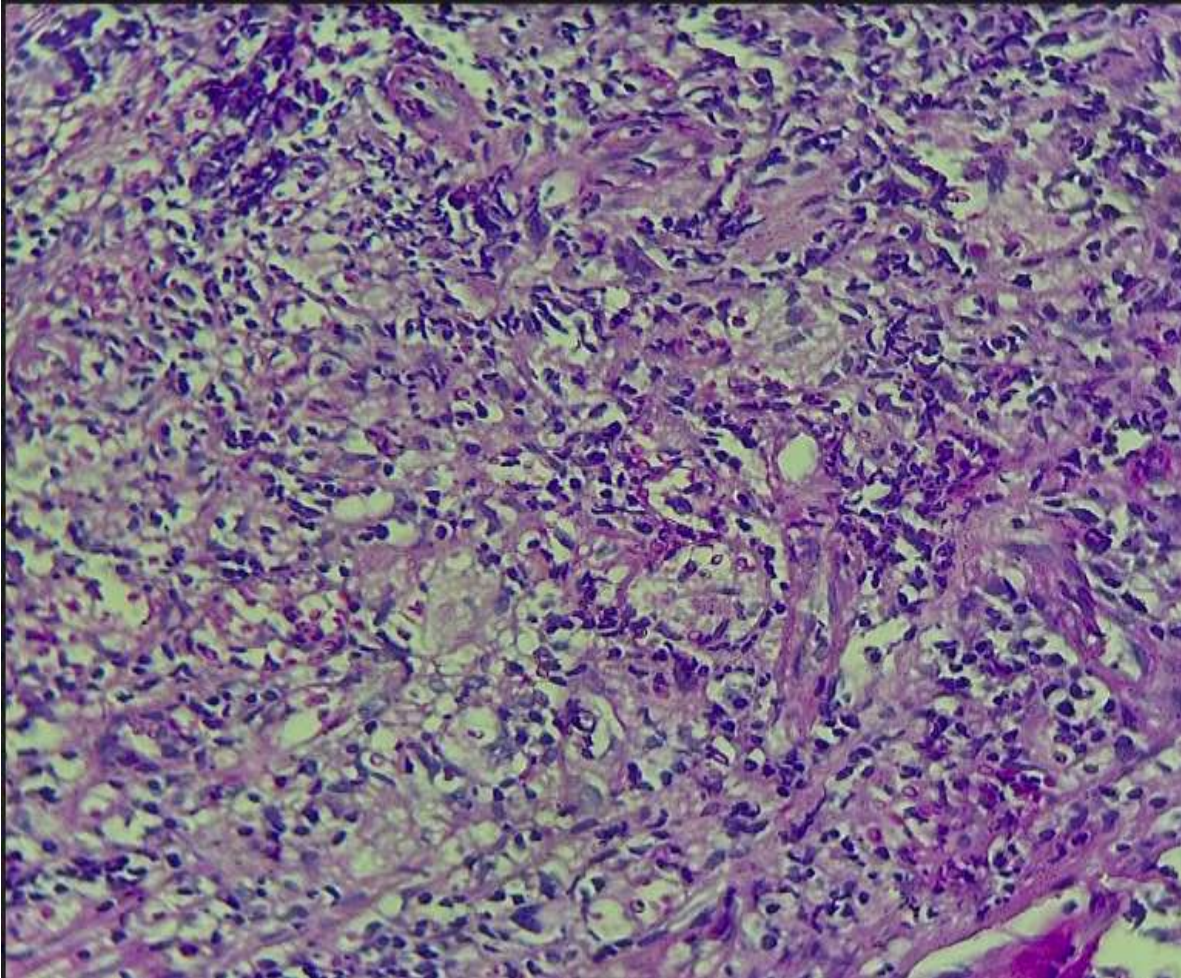


Image 3:-Histological image showing the presence of encapsulated, round to oval germs of variable size stained positively by PAS (PAS, x 20).

Discussion:-

Cryptococcosis is a serious infection caused by the capsulated yeast *Cryptococcus neoformans*. It most often occurs in cases of immune deficiency.

There is a consensus on the notion of a portal of entry usually pulmonary. The cutaneous portal of entry is possible after a direct inoculation (1)

The symptoms of pulmonary cryptococcosis in immunocompetent patients are highly variable and non-specific: cough, mucous or mucopurulent or even haemoptoic expectoration, chest pain, dyspnea, weight loss, night sweats and fever. However, it can be asymptomatic. The radiological aspects are also polymorphic: - segmental or bilateral interstitial pneumonitis. - intra-parenchymal opacities, single or multiple, taking the form of nodules or pseudo-tumoral masses preferentially located at the apices, aspects more readily found in immunocompetent patients. - more rarely: cavitory image, pleurisy, hilaradenopathies (2).

Pulmonary localizations are rarely isolated and should systematically lead to a search for neuromeningeal dissemination, often insidious in immunocompetent patients. Hence the interest in systematically performing a lumbar puncture even in the absence of neurological signs [3]. For skin lesions, they are a sign of hematogenous dissemination. Several types of skin lesions can be seen: "papules, ulcerations, nodules, vesicles, abscesses, cellulitis, etc." but the typical appearance suggests molluscum contagiosum (4).

The diagnosis of cryptococcosis is based on the demonstration by direct examination and after staining with Indian ink of a yeast with a specific capsule of the genus *Cryptococcus*. Histologically, the demonstration of the fungus requires special stains such as Muci-carmin, Alcian blue or Fontana-Masson staining. The search for cryptococcal antigen in the blood and in the CSF has a good diagnostic and prognostic value.

The treatment of cryptococcosis with neuromeningeal involvement typically involves amphotericin B (0.7 mg/kg per day) combined or not with 5-fluorocytosine (100 mg/kg per day) for 15 days as an attack treatment. The therapeutic approach is therefore determined according to the severity of the clinical situation. Treatment with fluconazole alone in moderately severe pulmonary involvement is probably sufficient; it seems important to continue maintenance treatment for at least one year in order to limit the number of recurrences, which are at their highest during the first year [5]. The treatment failure rate is highest in cases of disseminated cryptococcosis with a 20% failure rate. Mortality in cases of *C. neoformans* neuromeningeal involvement in a non-HIV context remains around 15% despite well-conducted medical treatment.

Conclusion:-

Disseminated cryptococcosis is exceptional in immunocompetent patients. The non-specific clinical expression and rarity of this condition always cause a diagnostic delay which is detrimental to the patient.

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