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Letter to the Editor

Letter to the editor about “Pulmonary invasive fungal infection and rhinofacial cellulitis with paranasal sinus and orbital fossa invasion in an immunocompromised patient”



Carta al editor en relación a “Infección fúngica invasiva pulmonar y celulitis rinofacial con invasión de senos paranasales y fosa orbitaria en paciente inmunodeprimido”

Dear Editor,

I read with interest the article, “Invasive pulmonary fungal infection and rhinofacial cellulitis with paranasal sinus and orbital fossa invasion in an immunocompromised patient,” and I would like to thank the authors for reporting such cases, as the incidence is low in our setting and I think publishing them helps improve management of these patients.¹

As described in the article, invasive fungal rhinosinusitis is a potentially fatal disease, with mortality rates of up to 72%, according to the published series.² This disorder is classified into three categories: granulomatous; chronic; and acute fulminant. Acute fulminant is the most serious and occurs almost exclusively in immunosuppressed patients.³

The most common causal agents of this infection are *Aspergillus*, *Rhizopus* and *Mucor* spp., and it is spread by inhalation of spores.⁴ There are other less common forms of presentation, such as conidiobolomycosis caused by *Conidiobolus coronatus* described in the publication, where invasion of the paranasal sinuses can occur by inhalation or through the subcutaneous space.⁵

This disorder should be suspected in patients with symptoms consistent with acute rhinosinusitis, particularly if they are associated with complicating clinical data such as facial and periorbital oedema, proptosis, decreased visual acuity or cranial nerve palsy. In these cases, although it has not been reported on, a nasal endoscopic examination and a CT of the brain and paranasal sinuses are necessary. MRI should be considered if orbital or intracranial complications are suspected.

Since the condition can worsen rapidly, as in the case of the patient described, an accurate initial assessment is essential. In these situations, it would be advisable to consult an ENT specialist urgently to rule out foci of fungus colonisation in the upper airway, in addition to targeted imaging tests such as those mentioned above.

In all patients diagnosed with, or in any patient suspected of having, invasive fungal sinusitis, urgent aggressive endoscopic sinus debridement should be considered, in addition to intravenous antifungal therapy and reversal of underlying immunosuppression.⁶ Fig. 1 shows the last case treated in our department. This patient had invasive fungal rhinosinusitis caused by *Aspergillus welwitschiae*, with clivus and left orbital involvement, and underwent ethmoidal and sphenoidal debridement plus antifungal therapy with amphotericin B 10 mg/kg/day combined with posaconazole 300 mg/24 h. The patient had a satisfactory outcome after treatment.

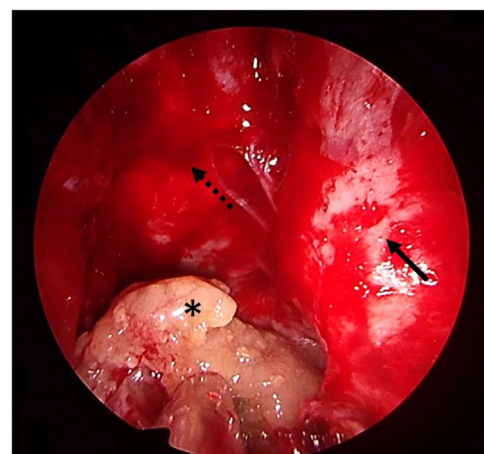


Figure 1. Endoscopic debridement image of invasive fungal rhinosinusitis due to *Aspergillus welwitschiae*. Solid arrow: lamina papyracea of left orbit. Dashed arrow: cribriform plate of anterior skull base. Asterisk: aspergilloma.

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Early surgical treatment of the paranasal sinuses has been shown to improve the survival rate, delay disease progression, reduce fungal load and provide a specimen for culture and histopathology diagnosis.⁷ Despite these measures, the prognosis is extremely poor if the host's immune response does not improve.⁸ In cases where the patient's prognosis is poor due to their underlying disease, and more aggressive debridement is required which includes external maxillectomy or orbital exenteration, the indication for intervention has to be agreed by a multidisciplinary group with the patient.

An interesting development has been the recent publication of several articles that report an increase in the incidence of invasive fungal sinusitis in relation to SARS-CoV-2 disease (COVID-19). The predisposing cause is still unknown. It is thought that several factors may be involved, such as the increased use of corticosteroids, broad-spectrum antibiotics and nosocomial infections. Increased serum ferritin levels, endothelial damage and pancreatic islet disease in patients with COVID-19 may also be involved.⁹

Awareness of the growing prevalence of invasive fungal sinusitis in our setting and proper management of this disease can help early diagnosis and treatment, which is essential if we are to improve the prognosis for these patients.

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Tuberculosis in the time of COVID-19: The successful results of treatment in Peru



Tuberculosis en época de COVID-19: los exitosos resultados del tratamiento en el Perú

Dear Editor,

The authors of the letter to the editor entitled “Impact of the COVID-19 pandemic on tuberculosis in Peru: are we forgetting someone?”¹ state that a series of interventions should be implemented in our country, such as TB units, to ensure all the necessary health measures to increase confidence among the population and reduce the risk of resistant forms of TB.

They assert that Metropolitan Lima and Callao report 64% of tuberculosis (TB) cases, 79% are multi-drug resistant (MDR-TB), and 70% are extremely resistant (XDR-TB). No capital of any nation in the world has such incredibly high rates of MDR-TB and XDR-TB. What we read in document² is that Metropolitan Lima and Callao report 64% (19,860) of TB cases, 79% (1020) of MDR-TB cases, 70% (76) of XDR-TB cases and 45% of deaths, so comments are unnecessary.

The COVID-19 pandemic led to an 18% drop worldwide in newly diagnosed TB cases from 2019 to 2020. In Peru, the drop was 26%,³ lower than the figures for Gabon (80%), the Philippines (37%), Lesotho (35%) and Indonesia (31%), and similar to the figure for India (25%).⁴ A state of national emergency was declared in Peru on 16 March 2020,⁵ which lasted throughout the year with different restrictive measures, including quarantine of the entire population for 16 weeks,⁶ a night curfew, only virtual classes allowed, the need for social distancing, prevention of meetings and closure of outpatient clinics. Despite that, Peru has the highest mortality⁷ and orphan⁸ rates associated with the disease in the world, meaning that the population, fearing contagion, either does not go or takes longer to go to health facilities when sick. For all these reasons, it is striking that in Peru there was a lower drop in cases than in countries where the restrictions were less severe.

Table 1 in the letter shows that for the year 2020 in Peru there was a 2.5% dropout rate among the sensitive cases and 5.7% among the resistant ones.¹ These very low dropout rates, even lower than those of the previous three years (Table 1)³ in Peru, have been achieved because the directly observed therapy (DOT), which takes place in the healthcare establishment (institutional DOT), was expanded to home DOT, in which healthcare workers

go to the home, and to DOT with family support network, in which the therapy is administered by a family member, in addition to telemonitoring for follow-up.⁹

Coverage (approximated as notifications divided by incidence) of TB treatment in 2020 worldwide was 59%, down from 72% (uncertainty interval [UI]: 65–80%) in 2019. The most immediate consequence of the large drop in the number of people newly diagnosed with TB and on treatment was an increase in the number of deaths from TB in 2020 (+5.6%), reversing the annual reduction we had seen since 2005, with the total number of deaths returning to the level of 2017.⁴ We have to assume that there will be a spike in our disease rates in the coming years, the duration of which will depend on when our country returns to normal.

Having exceeded the goals in TB control, in the 1990s, Peru left the TB80 group, which includes the countries that contribute 80% of the burden of the disease in the world. Our country's Tuberculosis Control Programme, now called Strategy, is rated as one of the best in the world.¹⁰ The letter sent to your journal has enabled us to make these comments and explain how we have worked during the pandemic with people affected by TB in Peru, where the numbers being diagnosed have reduced. Still, the high levels of cure achieved previously have been maintained.

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Conflicts of interest

None.

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