

puted tomography/positron emission tomography (PET-CT) scan showed a left paravertebral collection with peripheral enhancement (Fig. 1A), as well as a hyperenhancing right lung nodule (Fig. 1B). Fine-needle aspiration was performed on the lumbar abscess for microbiological culture which isolated *Nocardia cyriacigeorgica* susceptible to co-trimoxazole, amikacin, linezolid and doxycycline and resistant to quinolones. Antibiotic treatment was started with meropenem and amikacin for 2 weeks, after which the patient started to improve. The patient was discharged with oral antibiotic treatment with co-trimoxazole and doxycycline. This combination was maintained for 8 months with no adverse side effects, and the patient showed complete resolution of the lesions 6 months after her hospitalisation.

## Case 2

A 51-year-old man diagnosed with severe acquired bone marrow aplasia at age 23 declined to undergo a bone marrow transplant. For this reason, he remained on immunosuppressant treatment including various agents over time including cyclosporine, steroids and mycophenolate mofetil. At age 46, the patient was fitted with a hip prosthesis due to avascular necrosis of the right femoral head caused by his steroid treatment.

He was hospitalised 6 years later due to fever and increased right leg volume following an accidental fall. The injury was accompanied with local erythema and a marked increase in temperature. A CT scan revealed a large collection extending to the quadriceps and abductor muscles (Fig. 2A). The culture obtained through aspiration of the collection isolated *Nocardia farcinica* resistant to third-generation cephalosporins but susceptible to carbapenems, amikacin and co-trimoxazole. A study of the central nervous system (CNS) using magnetic resonance imaging revealed a round lesion on the frontal lobe which showed vasogenic oedema and peripheral enhancement (Fig. 2B), consistent with a CNS abscess.

The patient was diagnosed with disseminated nocardiosis with CNS symptoms and initially treated with meropenem, amikacin and co-trimoxazole. He had to be admitted for surgery to drain the periprosthetic abscess; however, his fever disappeared when antibiotics were started. Despite his initial recovery and resolution of nocardiosis-related lesions, including his cerebral nocardiosis, the patient died 3 months later of invasive pulmonary aspergillosis.

The incidence of nocardiosis in other conditions unrelated to transplant — such as bone marrow aplasia — is unknown and likely to be underestimated. It is unclear how *Nocardia* invades the host; as it is an omnipresent germ, accidental contact can cause infection. Our second case showed a clear relationship between an injury and the development of abscesses in the same area. Nocardiosis

generally develops in a subacute or chronic fashion and may go unnoticed; therefore, strong suspicion is essential for its diagnosis.

Most recommendations include initial combination therapy, preferably with 2 active antibiotics, although there is no standard treatment. Following intravenous treatment which may last up to one month, treatment with oral antibiotics must be maintained for 6–12 months. Co-trimoxazole is the antibiotic of choice for outpatient treatment.<sup>5</sup>

Regarding our cases, choosing an antibiotic regimen was complicated due to the bone marrow toxicity caused by co-trimoxazole. Alternative agents such as doxycycline or quinolones may be selected with the help of an antibiogram for prolonged treatment with good results.

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## Detection of respiratory viruses in patients with suspected SARS-CoV-2 infection<sup>☆</sup>



## Detección de virus respiratorios en pacientes con sospecha de infección por SARS-CoV-2

The SARS-CoV-2 virus is considered to be the cause of the current acute respiratory disease (COVID-19) pandemic which started

in the city of Wuhan on 31 December 2019. The clinical signs of COVID-19 (fever, cough and dyspnoea) are seen in many other acute respiratory infections caused by other conventional viruses, although its morbidity and mortality rates are much higher. The presence of this new virus in the winter months amidst circulation of seasonal strains of many other respiratory viruses, primarily influenza and respiratory syncytial virus (RSV), complicates differential clinical diagnosis despite initial epidemiological links.<sup>1</sup> Consequently, initial testing for other respiratory viruses, in addition to SARS-CoV-2, has been recommended to learn about their aetiological role in this group of patients.<sup>1</sup>

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We present a prospective study, conducted from the second week of March 2020, on the detection of respiratory viruses in patients with clinically suspected SARS-CoV-2 infection (COVID-19). The minimum required symptoms were fever  $>38^{\circ}\text{C}$  and cough with some sort of epidemiological history, whether geographical or personal (contact).<sup>1</sup>

Nasopharyngeal exudate was taken from each patient and sent to the laboratory in a virus transport medium (Vir-cell Transport Medium [VTM], Vircell, Granada). SARS-CoV-2 was detected by means of a commercial real-time reverse transcriptase–polymerase chain reaction (RT–PCR) assay which uses the sequences that correspond to the E, RnRd and N genes (Allplex™ 2019-nCoV Assay; Seegene, South Korea).<sup>2,3</sup> Respiratory viruses were detected from the same sample using a multiplex real-time PCR assay (Allplex™ Respiratory Assay; Seegene, South Korea) for simultaneous and differential detection of 21 different viruses.

In this study, 183 consecutive samples were analysed; of them, 48 (26.2%) tested positive for SARS-CoV-2 and 4 (2.1%) showed concomitant infection with this virus and rhinovirus in 2 cases, influenza B virus in one case and coronavirus OC43 in one case (28.3% positive for SARS-CoV-2). In 35 (19.1%) samples, only other respiratory viruses were detected: 13 cases of rhinovirus, 7 cases of influenza A virus, 5 cases of metapneumovirus, 3 cases of influenza B virus, 3 cases of coronavirus OC43, 2 cases of enterovirus and 2 cases of respiratory syncytial virus A (RSV-A). The remaining 96 (52.4%) samples were considered negative (with no other viruses present). Overall, 47.6% of all the respiratory samples tested positive for some type of respiratory virus.

There are few studies on the detection of other respiratory viruses in patients with suspected COVID-19. In a study by Bordi et al.<sup>4</sup> in 126 patients in Italy, only 3 cases of SARS-CoV-2 were detected (2.4%) versus the 48 (26.2%) in our study. This was because the Italian study was conducted at the start of the pandemic, with a low incidence of infection caused by the novel coronavirus.

This data is corroborated by the fact that said study detected influenza viruses in 28.5% of its patients, while our study only detected 11 cases of influenza (6%), probably because our study was conducted at the end of the current seasonal influenza epidemic. The percentage of negative samples in our study was 52.4% versus 44.4% in the Italian group, but it should be noted samples were tested not only for viruses but also for other bacteria (5.6%). A Chinese study by Lin et al.<sup>5</sup> reported a 40.8% rate of negativity versus other respiratory viruses, considering that an undetermined percentage could be caused by other respiratory pathogens.

Our study detected 4 patients (2.1%) with concomitant infections with SARS-CoV-2 and other respiratory viruses, whereas the same rate in the Italian study was 4.8%.<sup>4</sup> The viruses detected in our study were the same as those reported by Bordi et al.,<sup>4</sup> apart from coronavirus OC43, of which those researchers did not detect

any cases. This virus is also a beta-coronavirus, but belongs to subgroup 2a, and therefore genetically distant from SARS-CoV-2 (*Sarbecovirus* 2b). As a result, we do not believe that represents cross-amplification. Furthermore, among the cases that tested positive for other viruses and negative for SARS-CoV-2, we also detected 3 patients infected with coronavirus OC43, which was prevalent in the conventional respiratory infections during the study week. A Chinese study by Lin et al.<sup>5</sup> on concomitant infections between SARS-CoV-2 and other respiratory viruses detected 18 patients (9.7%) with this type of infection; this percentage was higher than that detected in this study and the Italian study, although the Chinese study was conducted in the second week in January 2020.

These preliminary studies suggest that SARS-CoV-2 would behave like all other conventional respiratory viruses in that it would present as a concomitant infection in a variable percentage (4%–9%). Therefore, initial detection of influenza or RSV as a process for ruling out COVID-19 should not be continued. If this new infection is suspected, inevitably, it is necessary to initially rule out this virus and then, if possible, simultaneously test for other respiratory viruses.

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## Thyroid abscess of polymicrobial origin in a child<sup>☆</sup>



### Absceso tiroideo de origen polimicrobiano en un niño

Acute suppurative thyroiditis (AST) and thyroid abscess are infectious processes in the thyroid gland that are extremely rare, accounting for 0.7%–1% of all thyroid disorders.<sup>1</sup> This low prevalence is due to the thyroid gland's intrinsic resistance to bacterial

invasion, as a result of both its chemical and its anatomical characteristics.<sup>2</sup> In most cases, the infection's portal of entry is unknown, but colonisation of a distal region appears to be the most common cause.<sup>3–6</sup> Initial clinical signs are usually non-specific and difficult to detect, with painful inflammation developing in the anterior neck area as the condition progresses. This is a potentially serious condition.<sup>1</sup>

Ultrasound is the first-line imaging technique.<sup>7</sup> Treatment is based on intravenous broad-spectrum antibiotics aimed at covering germs in the patient's oropharyngeal flora. Fine-needle aspiration biopsy or surgical drainage must be performed if the clinical course demands it.<sup>8</sup> With early diagnosis and treatment,

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