

Total number of hospitalized COVID-19 patients reached a maximum of 16,174 on April 2<sup>nd</sup>, 2020. Number of patients in ICU beds reached a maximum of 1520 on April 5<sup>th</sup> (Fig. 1a). Occupancy by COVID-19 cases (not counting IFEMA temporary hospital beds) of acute care hospitals beds reached 100% by March 28<sup>th</sup> and 105% on April 6<sup>th</sup> because additional beds were placed in improvised wards areas such as physical therapy gyms, corridors, libraries and tents outside the main hospitals. ICU beds occupancy reached almost 300% on April 6<sup>th</sup> (Fig. 1b). To deal with the enormous surge of cases needing critical care, postanesthesia care units, pediatric ICUs and cardiac/coronary care units were repurposed for COVID-19 adult patients and makeshift ICUs were placed in operating rooms and intermediate respiratory care units. From March 28<sup>th</sup> to April 7<sup>th</sup> the COVID-19 case load interrupted almost all non-COVID surgical and medical hospital activities.

Our numbers dramatically show how the COVID-19 outbreak can collapse hospital systems in developed countries. We agree with Ed Yong who recently wrote “The precise magnitude of the virus’s fatality rate is a matter of academic debate. The reality of what it can do to hospitals is not”.<sup>3</sup> We need to learn from this devastating experiences and prepare to stop future outbreaks long before they reach the magnitude achieved by the COVID-19 epidemic in Madrid

#### Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.eimc.2020.06.005.

#### Infectious sacroiliitis caused by *Bartonella henselae* in an immunocompetent adult: An unusual case<sup>☆</sup>



#### Sacroileítis infecciosa por *Bartonella henselae* en adulto inmunocompetente: un caso inusual

Cat scratch disease (CSD) is the most common manifestation in humans caused by *Bartonella henselae* (Bh).<sup>1</sup> In adults, there are atypical signs and symptoms with extranodal (e.g., musculoskeletal) involvement.<sup>2–4</sup> The following is the first case of an adult patient with sacroiliitis secondary to Bh infection, a site of infection not previously reported in the literature. A 57-year-old woman with a history of controlled hypertension. A housewife whose neighbour trains cats, she fell with a blow to her right hip, with no clinical or radiographic evidence of fracture. She followed a favourable course with a gradual decrease in local pain. Two weeks later, she presented a productive cough with mucopurulent expectoration and a sensation of fever which was not measured, in addition to pain in the right gluteus radiating towards the knee, associated with a mild functional impediment. She had no other symptoms. On admission, she was tachycardic, normotensive and afebrile with 4l/min of oxygen via cannula for 91% saturation. Physical examination revealed diffuse *rhonchi* in both lung fields, tenderness in the right and left upper quadrant and pain on deep palpation of the right gluteus. Laboratory values: haemoglobin 15.8 g/dl, platelets 130,000  $\mu$ l, leukocytes 10,510  $\mu$ l (predominantly neutrophils), CRP 303 mg/l (normal value: <5), total bilirubin 5.89 mg/dl, direct bilirubin 1.94 mg/dl, GOT 84 U/l,

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GPT 82 U/l, GGT 133 U/l and AP 195 U/l. A chest X-ray showed right basal condensation. An abdominal ultrasound revealed a narrow bile duct and splenomegaly.

She was hospitalised with a diagnosis of right basal pneumonia and started on empirical treatment with ceftriaxone 2 g/day and clarithromycin 500 mg/every 12 h. After completing 10 days of antibiotic therapy, the patient followed a favourable course with respect to the respiratory tract, and her liver test results normalised. Her elevated liver tests results were interpreted to have reflected a context of sepsis. However, she showed persistent intermittent fever and elevated inflammatory parameters, with increasing pain and functional impediment of her right hip. The study was extended with HIV ELISA, blood cultures, urine culture, sputum culture with Kinyoun stain, smear microscopy and Koch culture. All were negative. Computed tomography of the abdomen and pelvis showed findings consistent with right sacroiliitis with focal bone resorption and splenomegaly, with no lumbosacral or iliac lymphadenopathy. Bone scintigraphy did not show other foci of hyperenhancement. In the absence of clinical indications of a non-infectious inflammatory aetiology, the patient was started on empirical treatment with piperacillin/tazobactam and vancomycin. She was evaluated for trauma, and joint aspiration and surgery were ruled out. After 24 days of treatment, the patient followed a course with less gluteal pain; she was afebrile, her CRP level had normalised and her ESR was 48 mm/h. It was decided to discharge her, with instructions to continue empirical antibiotic treatment at home with Co-Trimoxazole Forte, covering micro-organisms that typically infect the bone, and with close monitoring by an outpatient internal medicine team. Two weeks later, positive anti-Bh IgG was recovered with titres above 1:1,024. The patient’s treatment was adjusted to doxycycline 100 mg/every 12 h. She completed treatment in 4 months, with an asymptomatic course.

It has been reported that up to 10% of patients with CSD have an atypical presentation such as neuroretinitis, encephalitis, ery-

thema nodosum, hepatitis, pulmonary nodules or musculoskeletal involvement.<sup>1–3</sup> We reported the case of a patient in whom the only clinical sign of Bh infection was sacroiliitis. Few published studies in the literature report the frequency of musculoskeletal manifestations (MSMs). One of them analysed 913 subjects diagnosed with CSD between 1991 and 2002. 10.5% presented an MSM: 5.8% had myalgia and 5.5% had arthralgia/arthritis.<sup>2</sup> The most commonly affected joints were the knees (23%), wrists (20%), ankles (18%) and elbows (11%); no cases of sacroiliitis were reported.<sup>3</sup> Among patients with joint disease, 42% presented severe compromise of weight-bearing joints that limited walking, similar to that reported in our case.<sup>2,3</sup>

Regarding risk factors, it has been reported that being over 20 years of age and being female are significantly associated with developing MSM.<sup>2,3</sup> Our patient presented both risk factors.

In atypical cases of CSD, the non-specificity of the signs and symptoms requires a high level of suspicion. Our case is a clear example, in which the bartonellosis study was proposed due to the patient's persistent fever. At present, the most widely used diagnostic method is serology, in which an anti-Bh IgG titre of >1:256 is highly suggestive of a current or recent infection.<sup>4</sup>

Lastly, we would like to mention that there are no pathognomonic radiological signs of osteoarticular compromise by Bh. In the literature, they are generally described as osteolytic lesions, similar to our case.<sup>5</sup>

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## Monitoring of the rehabilitation therapy of COVID-19 effort dyspnea<sup>☆</sup>



### Monitorización del tratamiento rehabilitador de la disnea de esfuerzo por COVID-19

Coronavirus disease (COVID-19), caused by infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), ranges from no symptoms to severe respiratory failure.<sup>1</sup> However, the disease does not end with the acute stage. A previous study reported that 56% of patients continued to present symptoms such as palpitations, chest pain, dyspnoea at rest and dyspnoea on exertion with exercise, even after negative reverse transcription polymerase chain reaction (RT-PCR) test results and hospital discharge.<sup>2</sup>

We report the case of a 26-year-old patient, a member of our hospital's healthcare staff, with no personal history of note, who sought hospital care as she had started to experience dyspnoea on exertion (when engaging in moderate-intensity sport). A previous serology study to screen for asymptomatic carriers at the same hospital (chemiluminescence and enzyme-linked immunosorbent assay) had detected IgG<sup>+</sup> IgM<sup>–</sup> serology for SARS-CoV-2. The patient remained asymptomatic up to that time.

Physical examination revealed no findings of note, and lung auscultation was normal. At that time, the patient refused a computed tomography (CT) scan of the chest. Instead, a lung ultrasound was performed with a portable ultrasound device (Butterfly iQ – Butterfly Network, Guilford, CT, United States). The examina-

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tion regimen followed included 12 areas of the thorax, 6 in each hemithorax (anterior, lateral and posterior, subdivided into superior and inferior).<sup>3</sup> This revealed a thickened, irregular pleural line with prominent B lines in the left posterosuperior lobe – the only pathological finding on examination.

The patient was referred to the pulmonary rehabilitation clinic. Her oxygen saturation (SO<sub>2</sub>) was 97% and her heart rate (HR) was 64 bpm. In the initial assessment, a six-minute walk test was performed, in which she walked a total of 720 m with a final O<sub>2</sub> sat. of 95% and a maximum HR of 166 bpm. In the stress test, eight minutes of exertion and a maximum load of 100 watts yielded an O<sub>2</sub> sat. of 94% and a maximum HR of 160 bpm. The patient's score on the Borg scale was 15, meaning that her perceived exertion intensity was hard.

For this reason, an at-home pulmonary rehabilitation programme was designed. This programme included the following exercises:

- Slow, deep breaths sustained over time (with shoulders lifted)
- Diaphragmatic breathing, pursed-lip expiration (noting improvement in desaturation)
- Diaphragmatic training: placing a weight of 1–3 kg on the abdomen in a supine position and stretching the rib cage<sup>4</sup>

Two sessions of 10 min a day were done for six weeks, instead of one session a day,<sup>5</sup> thus the training was customised to our patient's age and greater functional capacity.

At the end of the programme, the lung ultrasound was repeated and showed resolution of the previously reported abnormalities. An improvement was also observed in the six-minute walk test and stress test, with the previously observed desaturations disappearing.

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