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Lung ultrasonography unmasking the asymptomatic SARS-CoV-2 carrier

Utilidad de la ecografía pulmonar para detectar un portador asintomático de SARS-CoV-2

Dear Editor,

The 11th of March of 2020, the World Health Organization declared a pandemic caused by a novel coronavirus, named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), with the spread to more than 180 countries, 37,418,821 cases confirmed and 1,076,818 deaths caused.[1]

The disease severity spectrum is believed to be broad. Interestingly, according to different studies, many patients (40-80%) are asymptomatic at the time of testing,[2] and only few of them (0-10%) went on to develop symptoms. Researchers report that asymptomatic COVID-19 is more common among women and younger adults (median age 37) that could shed the virus for a median of 8 days.[3]

In this emergency, is critical the ability to quickly confirm these asymptomatic carriers to avoid transmission of the virus, especially in healthcare workers. For this reason, screening them for symptoms or unprotected exposures might not be effective.

We herein report the case of a 31-year-old woman with no significant past medical history. She is an emergency physician who had been working in the front line of our hospital treating Coronavirus Disease (COVID-19) patients since the beginning of the pandemic. She reported a close contact with a just confirmed COVID-19 patient in the household setting.

The physical exam was unremarkable, with normal lung auscultation. At that moment, a Point-of-Care Lung ultrasonography (LUS) was performed with a hand-held ultrasound device (Butterfly IQ – Butterfly Network, Guilford, CT, USA), following a twelve-zone scanning scheme of the anterior, lateral and posterior chest, showing a thickened and irregular pleural line with prominent B-lines in the left posterior lobe. The rest of the lung ultrasound showed an A-line pattern. A nasopharyngeal swab for SARS-CoV-2 test was done, being negative. Laboratory tests were unremarkable. Given her absence of symptoms, she refused to have a chest Computed Tomography (CT).

One month later, as a serology surveillance strategy was implemented at our hospital, she had a serology test with the presence of positive SARS-CoV-2 IgG and negative IgM (Chemiluminescence and Enzyme-Linked Inmmunosorbent Assay). At this moment LUS was repeated, with an improvement of the previous findings. Three months after the start of the pandemic, she remains asymptomatic.

There is growing literature regarding the usefulness of diagnostic imaging on COVID-19. A previous study found that chest CT scan abnormalities had a high sensitivity for diagnosis of COVID-19 patients,[4] suggesting that CT scan should be considered as a screening tool, especially in epidemic areas with high pre-test probability.

However, for these asymptomatic carriers, radiation exposure and overuse of health care resources, or lack thereof ability to get a CT scan seems to overshadow the need.

LUS is innocuous, quickly completed following simple and easy to apply protocols and whose findings correlate excellent with CT scan.[4]

Prioritizing healthcare workers for Reverse Transcription Polymerase Chain Reaction (RT-PCR) test, serology test in addition to serial LUS exam, during these surveillance strategy campaigns, could more accurately diagnose the stage or time course of the COVID-19 infection, overcoming some of the limitations of the RT-PCR and serologic tests.[5] This is essential, as especially false negative results could cause false reassurance, behaviour change and disease spread.

The main limitation is that LUS findings are not specific to SARS-CoV-2 infection, and the same abnormalities might be seen in other interstitial syndromes triggered by different causes that must be considered. However, in epidemic areas, these positive LUS features, even in asymptomatic or negative RT-PCR can still be highly suggestive of COVID-19 infection.

We want to share our case report findings, given the urgent need for different diagnostic strategies in order to identify asymptomatic SARS-COV-2 carriers, especially healthcare workers, and mitigate community transmission of SARS-CoV-.

In conclusion, the usefulness that LUS presents in this COVID-19 pandemic, especially in unmasking asymptomatic carriers is worth consideration. Further work integrating it in different surveillance strategies are needed before the release of the lockdown measures.

Authorship

All authors have contributed equally to this work.

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Vasculitis necrosante tipo PAN en el síndrome de Sjögren primario: descripción de 5 casos

PAN-like necrotizing vasculitis in primary Sjögren syndrome: 5 cases

Sr. Editor:

El síndrome de Sjögren primario (SSp) es una enfermedad sistémica que se define como una exocrinopatía autoinmune y se manifiesta en forma de xerostomía y xeroftalmía. Entre un 50 y un 70% de los pacientes presentan manifestaciones extraglandulares en forma de artralgias, artritis, fenómeno de Raynaud y afectación pulmonar y renal entre otras[1].

La vasculitis es una manifestación extraglandular poco frecuente. Utilizando la clasificación de Chapel-Hill se describen 2 tipos. Por un lado, una inflamación vascular que afecta pequeños vasos cuya histología es de vasculitis leucocitoclástica y que se manifiesta clínicamente en forma de púrpura petequial palpable. El segundo tipo es una vasculitis necrosante tipo panarteritis nodosa (PAN) que afecta las arterias de pequeño y mediano calibre. Es mucho menos frecuente y se estima por debajo del 5%. El diagnóstico se realiza mediante biopsia y a diferencia de la PAN clásica no se observan los clásicos aneurismas en la arteriografía. El tratamiento es superponible al de las vasculitis necrotizantes y se considera un factor de mal pronóstico y mortalidad[2].

A continuación se presenta una serie de 5 casos de vasculitis necrosante tipo PAN asociada a SSp. Se revisaron las historias clínicas de 300 pacientes diagnosticados de SSp en un hospital universitario entre los años 1980 y 2019. El área de referencia del centro es de 800.000 habitantes.

En la tabla 1 se exponen las características clínicas y las pruebas de laboratorio de la serie.

En 4 pacientes (80%) la clínica inicial fue la alteración del estado general en forma de síndrome constitucional y febrícula. El órgano afectado con mayor frecuencia fue el sistema nervioso periférico, 4 pacientes (80%) presentaron mononeuritis múltiple y 3 (60%) vasculitis leucocitoclástica.

Tabla 1
Perfil inmunológico al diagnóstico del síndrome de Sjögren

	Caso 1	Caso 2	Caso 3	Caso 4	Caso 5
Edad diagnóstico síndrome de Sjögren	Mujer, 63 años	Mujer, 49 años	Mujer, 57 años	Mujer, 58 años	Mujer, 58 años
Autoinmunidad	ANA 1/2.560 moteado fino, Ro52, La	ANA 1/2.560 moteado fino Ro52, La ANCA MPO 44 U/l	ANA 1/320 moteado grueso Ro52, 60, La	1/2.560 moteado fino Ro, La	ANA 1/2.560 homogéneo Ro52, Ro60
Edad diagnóstico vasculitis y tiempo medio	66 años 36 meses (3 años)	61 años 144 meses (12 años)	69 años 144 meses (12 años)	68 años 120 meses (10 años)	72 años 168 meses (14 años)
Clínica	Síndrome constitucional Pie caído Púrpura palpable	Síndrome constitucional Pie caído	Síndrome constitucional Parestesias guante y calcetín Púrpura palpable	Síndrome constitucional Colecistitis alitiásica	Parestesias Púrpura palpable
Laboratorio	VSG 71 mm, PCR 85 mg/l	VSG 115 mm, PCR 196 mg/l	VSG 25 mm, PCR 19 mg/l	VSG 54 mm, PCR 75 mg/l	VSG 45 mm, PCR 7 mg/l
Crioglobulinemia	Mixta tipo II	ND	Mixta tipo II	ND	Mixta tipo II
Complemento (mg/dl)	C3 103, C4 < 6	C3 129, C4 21	C3 122, C4 < 6	C3 120, C4 30	C3 63, C4 < 6
Anatomía patológica	Muscular: vasculitis necrosante de pequeño y mediano vaso Piel: vasculitis leucocitoclástica	Muscular: vasculitis necrosante con afectación de arteriolas Renal: glomerulonefritis necrosante difusa. Nefritis tubulointersticial	Muscular: vasculitis necrosante de pequeño y mediano vaso	Vesícula biliar: colecistitis crónica con inflamación de pared de vasos de mediano y pequeño calibre con necrosis fibrinoide	Muscular: vasculitis necrosante de pequeño vaso
Tratamiento de inducción	500 mg metilprednisolona ev Rituximab	500 mg metilprednisolona ev Ciclofosfamida ev	500 mg metilprednisolona ev Ciclofosfamida ev Inmunoglobulinas (progresión MNM)	500 mg metilprednisolona ev Ciclofosfamida ev	500 mg metilprednisolona ev Ciclofosfamida ev
Tratamiento de mantenimiento	Rituximab	Azatioprina	Azatioprina Rituximab	Azatioprina	Azatioprina
Evolución	Favorable	Favorable	Síndrome de Austrian	Favorable	Favorable