

HORNER SYNDROME ASSOCIATED WITH NECROTIZING BACTERIAL PNEUMONIA AFTER SARS-CoV-2 INFECTION

Leonardo Grabinski Bottino¹ , Victor Uberti dos Santos² , Fernando Pivatto Júnior¹ 

ABSTRACT

Introduction: We report the case of a 37-year-old man admitted to a tertiary care hospital for severe SARS-CoV-2 infection, who subsequently required mechanical ventilation. During hospitalization, he developed left-sided ptosis, miosis, and anhidrosis, consistent with Horner syndrome. This case illustrates a rare presentation of this condition in adults secondary to necrotizing pneumonia, likely due to involvement of the stellate ganglion, highlighting the importance of recognizing clinical signs and atypical imaging findings in post-COVID-19 complications.

Keywords: *Horner syndrome; Pneumonia, necrotizing; Severe acute respiratory syndrome coronavirus 2; Hypohidrosis; Ptosis, Eyelid; Miosis, Pupillary*

Clin Biomed Res. 2026;46:1-2

1 Hospital de Clínicas de Porto Alegre, Porto Alegre, RS, Brazil.

2 Hospital São Lucas, Porto Alegre, RS, Brazil.

Corresponding author:

Fernando Pivatto Júnior
Serviço de Medicina Interna, Hospital de Clínicas de Porto Alegre (HCPA)
Avenida Protásio Alves, nº 211, 5º andar, bloco C. CEP: 90.410-000
Porto Alegre, RS – Brasil
E-mail: fpivatto@gmail.com

A 37-year-old obese man with critical illness due to SARS-CoV-2 infection was transferred to our tertiary hospital on mechanical ventilation. After five days, with the patient remaining on mechanical ventilation and febrile, physical examination showed left-sided ptosis and miosis and ipsilateral anhidrosis (Figure 1). Chest radiography revealed significant consolidation in the left upper lobe, a finding confirmed by chest computed tomography (Figure 2A and Figure 2B). Empirical antibiotic therapy was started to treat necrotizing bacterial pneumonia. The patient's condition gradually improved, and he was successfully weaned from mechanical ventilation one week later. He remained hospitalized for four weeks for intravenous antibiotic therapy and rehabilitation. At hospital discharge, however, the clinical signs of Horner syndrome persisted. Unfortunately, no follow-up data are available after discharge due to loss to follow-up.

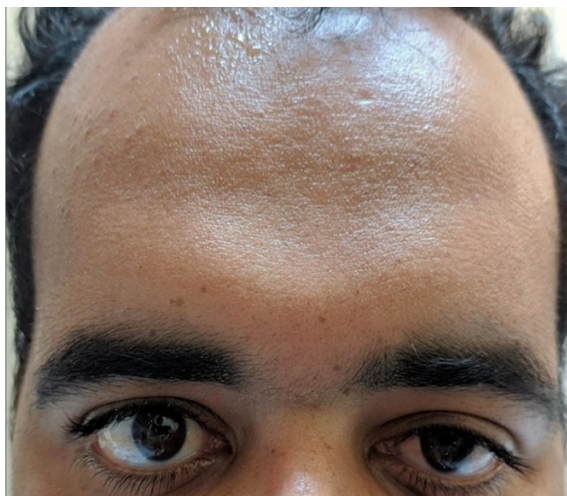


Figure 1: Photograph showing left-sided miosis (difficult to see because of brown iris), ptosis, and anhidrosis.

Horner syndrome was originally described in humans in 1869 as a syndrome of sympathetic disruption of ocular innervation, with classic signs are miosis, ptosis, and anhidrosis¹. It can be caused by a mass effect, such as lung cancer, but there are no reports of pneumonia as a cause of Horner syndrome in adults, although it has been described in children²⁻³. Necrotizing pneumonia represents a severe complication of bacterial infection, particularly in the setting of COVID-19, where secondary

bacterial infections can cause extensive lung tissue destruction⁴. The pathophysiology of Horner syndrome in this context involves invasion of the paravertebral sympathetic chain and the inferior cervical (stellate) ganglion by the apical lung lesion, disrupting the preganglionic sympathetic pathway⁵. We described a bacterial complication after SARS-CoV-2 infection that was associated with a mass effect, probably damaging the stellate ganglion and causing Horner syndrome with its classic components.

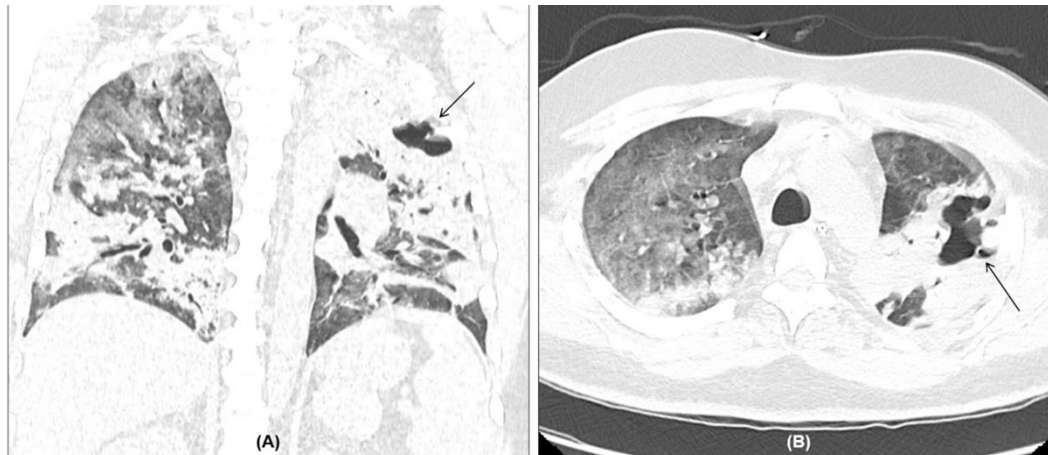


Figure 2: (A) Axial and (B) coronal chest computed tomography scans showing pneumonic consolidation with a necrotic area and cavitation in the left upper lobe.

REFERENCES

1. Horner JF. On a form of ptosis. *Klin Monbl Augenheilkd*. 1969;7:193-8.
2. Pancoast HK. Superior pulmonary sulcus tumor: tumor characterized by pain, Horner's syndrome, destruction of bone and atrophy of hand muscles chairman's address. *JAMA*. 1932;99(17):1391-6.
3. Knyazer B, Levy J, Rosenberg E, Lifshitz T, Lazar I. Horner's syndrome in an infant with complicated pneumonia. *Isr Med Assoc J*. 2011;13(8):504-6.
4. Borczuk AC, Salvatore SP, Seshan SV, Patel SS, Bussel JB, Mostyka M, et al. COVID-19 pulmonary pathology: a multi-institutional autopsy cohort from Italy and New York City. *Mod Pathol*. 2020;33(11):2156-68.
5. Arcasoy SM, Jett JR. Superior pulmonary sulcus tumors and Pancoast's syndrome. *N Engl J Med*. 1997;337(19):1370-6.

Received: Feb 11 2026

Accepted: Apr 14 2026