



Clinical Image

Bronchoperitoneal Fistula Secondary to Subphrenic Abscess Causing Bilateral Pneumonia and Respiratory Failure

Johanna Marcela Abril-Victorino ^{a,*} , Veronica Calleja-Muñoz ^a , Maite Arlaban-Carpintero ^a, Javier Ceña-Carazo ^a

^a Department of Internal Care Medicine, Hospital San Pedro, Logroño, Spain

ARTICLE INFO

Article history:

Received 05 July 2024

Received in revised form 30 October 2024

Accepted 26 November 2024

Keywords:

Bronchoperitoneal
fistula

Subphrenic abscess

Respiratory failure

Pneumonia

Mechanical ventilation

© 2025 The Authors. Published by Iberoamerican Journal of Medicine. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

Fístula broncopertoneal secundaria a absceso subfrénico causando neumonía bilateral y fracaso respiratorio

INFO. ARTÍCULO

Historia del artículo:

Recibido 05 Julio 2024

Recibido en forma revisada 30 Octubre 2024

Aceptado 26 Noviembre 2024

Palabras clave:

Fístula broncopertoneal

Absceso subfrénico

Fracaso respiratorio

Neumonía

Ventilación mecánica

© 2025 Los Autores. Publicado por Iberoamerican Journal of Medicine. Éste es un artículo en acceso abierto bajo licencia CC BY (<http://creativecommons.org/licenses/by/4.0/>).

HOW TO CITE THIS ARTICLE: Abril-Victorino JM, Calleja-Muñoz V, Arlaban-Carpintero M, Ceña-Carazo J. Bronchoperitoneal Fistula Secondary to Subphrenic Abscess Causing Bilateral Pneumonia and Respiratory Failure. Iberoam J Med. 2025. doi: 10.53986/ibjm.2025.0004. [Ahead of Print].

A 53-year-old man was admitted to the Intensive Care Unit (ICU) due to peritonitis secondary to intestinal perforation and septic shock. After being discharged from the ICU, the patient developed bronchial obstruction increased

respiratory secretions, and a greater need for oxygen therapy. A computed tomography (CT) scan of the chest and abdomen revealed a left subphrenic collection that communicated with the left hemithorax and bilateral basal

* Corresponding author.

E-mail address: jmabril@riojasalud.es

ISSN: 2695-5075 / © 2025 The Authors. Published by Iberoamerican Journal of Medicine. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

<https://doi.org/10.53986/ibjm.2025.0004>

pneumonia (Figure 1A). *Pseudomonas aeruginosa* producing carbapenemase was isolated from the patient's respiratory secretions, leading to the initiation of targeted antibiotic therapy.

ventilation parameters were adjusted, reducing airway pressures without changing the volume-controlled ventilatory mode, and the catheter was connected to a thoracic drainage system with continuous suction.

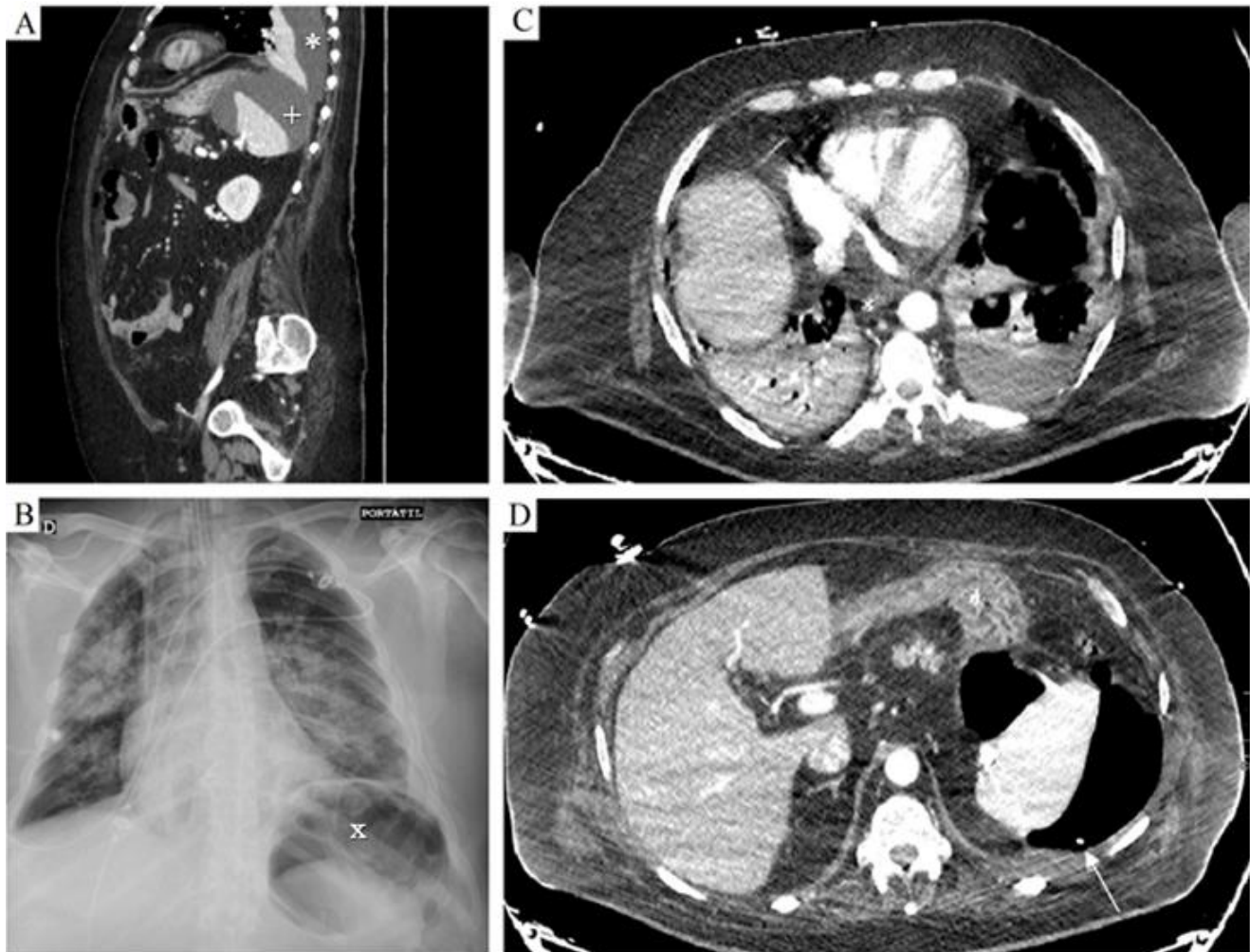


Figure 1: A: Sagittal CT scan demonstrating adjacent pleural effusion (*) and abdominal collection (+) prior to mechanical ventilation. B: Frontal chest X-ray revealing intraperitoneal gas beneath the left hemidiaphragm (x) following mechanical ventilation and preceding percutaneous drainage. C and D: CT scans during mechanical ventilation and after drainage insertion, indicating pneumoperitoneum secondary to a bronchoperitoneal fistula. Percutaneous drainage catheter (→).

Despite the antibiotic treatment, the patient experienced progressive respiratory deterioration with abundant purulent secretions, respiratory failure, and the need for protective mechanical ventilation with high positive end respiratory pressure, a follow-up chest X-ray was performed after orotracheal intubation (Figure 1B). Given the small amount of the pleural collection, it was not amenable to drainage. Due to the persistence of the septic condition, a percutaneous drainage of the abdominal collection was performed, observing the continuous outflow of air and pus. A new thoracoabdominal CT scan, conducted to rule out post-procedural complications, showed the proper positioning of the inserted drain and the presence of a bronchoperitoneal fistula (Figure 1C, 1D). Mechanical

After the drainage, respiratory secretions significantly decreased, and the requirement for oxygen therapy was reduced, allowing for the weaning from mechanical ventilation and improvement of the septic condition. One week later, with no observed leaks, the abdominal drain was removed without complications.

This case illustrates the presentation of pneumonia and respiratory failure secondary to a bronchoperitoneal fistula, an uncommon complication associated with subphrenic abscesses [1, 2]. There is limited scientific evidence regarding the medical-surgical treatment and ventilatory management of this condition, and much of the available information is extrapolated from cases of bronchopleural fistulas [1, 3]. The primary strategies in managing this

pathology include eliminating the cause and reducing the flow through the fistula [1, 4]. In this case, the management was conservative, avoiding additional invasive techniques. The use of percutaneous drainage facilitated the reduction of respiratory secretions, prompt extubation, and spontaneous ventilation, which was beneficial in reducing the flow through the fistula.

Conservative management with percutaneous drainage proved effective in reducing the bronchoperitoneal fistula, allowing for significant patient recovery. This approach minimized the need for additional invasive interventions and favored a rapid clinical improvement.

1. CONFLICT OF INTERESTS

The authors have no conflict of interest to declare. The

authors declared that this study has received no financial support.

2. REFERENCES

1. Ebeling PA, Malmquist J, Beale K, Mueller DL, Kempenich J. *Bronchoperitoneal and Enterocutaneous Fistula Development Following a Colorectal Anastomosis Leak*. *Cureus*. 2019;11(12):e6277. doi: 10.7759/cureus.6277.
2. Kesler KA. *Bronchoperitoneal fistula secondary to Klebsiella pneumoniae*. *Ann Thorac Surg*. 1999;68(3):1121.
3. Cook CJ, Weston A, McCallum D. *Broncho-abdominal fistula: making the diagnosis and managing the patient* *J Intensive Care Soc*. 2009;10(3):220-2. doi: 10.1177/175114370901000316.
4. Rahman S, VanDruff T, Wang YC, Casey D, Lewis, Mary-Margaret. *A case of Bronchoperitoneal fistulization leading to pneumoperitoneum in an intubated patient*. *Critical Care Medicine*. 2021;49(1):317. doi: 10.1097/01.ccm.0000728468.75152.25.