Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Pneumology Service

An Uncommon Cause of Large Hemoptysis

S. Bounhar[1*], H. Nagueyeh Said[1], H. Yassine[1], M. Ijim[1], O. Fikri[1], L. Amro[1]

[1]Service de Pneumologie, Hôpital Arrazi, CHU MOHAMMED VI, Labo. LRMS, FMPM, UCA, Marrakech, Maroc

DOI: 10.36347/sjmcr.2024.v12i01.021 | **Received:** 03.12.2023 | **Accepted:** 07.01.2024 | **Published:** 17.01.2024

***Corresponding author:** S. Bounhar
Service de Pneumologie, Hôpital Arrazi, CHU MOHAMMED VI, Labo. LRMS, FMPM, UCA, Marrakech, Maroc

Abstract **Case Report**

Bullous emphysema is a recognized complication of chronic obstructive pulmonary disease (COPD), often leading to pneumothorax. However, intrabullous fluid accumulation is an uncommon manifestation. We present a case of a 55-year-old chronic smoker with a history of pulmonary tuberculosis and COPD, admitted with large hemoptysis. Imaging revealed a massive cystic lesion within an emphysematous bulla. Despite negative infectious and embolic workup, the patient's critical condition precluded surgical intervention. Embolization with interventional radiology yielded good results and controlled bleeding. This case emphasizes the significance of meticulous history-taking, comprehensive imaging review, and a multidisciplinary approach to diagnosis and management in challenging clinical scenarios.

Keywords: Bullae, Emphysema, COPD, Hemoptysis.

INTRODUCTION

Bullous emphysema, a complication of COPD, typically presents with pneumothorax. Uncommonly, intrabullous fluid accumulation can lead to life-threatening complications such as massive hemoptysis. We describe a rare case of a 55-year-old patient with a background of pulmonary tuberculosis, chronic smoking, and advanced COPD, who presented with significant hemoptysis due to a large cystic lesion within an emphysematous bulla. Despite extensive evaluations ruling out infectious and embolic causes, the patient's fragile health status precluded surgical intervention. This case underscores the importance of a comprehensive approach, involving detailed patient history, meticulous imaging analysis, and a multidisciplinary team, in managing complex manifestations of COPD-related complications.

CASE REPORT

55 years old with a history of pulmonary tuberculosis, chronic smoker, COPD on double bronchodilatation LABA – LAMA with chronic hypercapnic respiratory failure on long term oxygenotherapy and home noninvasive ventilation. He also suffered from cor pulmonae on diuretics.

Admitted to the hospital for worsening of his dyspnea and large hemoptysis with no history of trauma (Figure 1). His physical exam showed oxygen saturation 77% on room air improving to 92% on 2L of oxygen via nasal cannula, tachypnea 25cpm, tachycardia 105 bpm. On auscultation decreased air entry was noted in both lung fields.

Biological analysis found a leukocytosis of 9910, platelets at 233000, PT ratio 100%, Dimers at 360 and C-reactive protein at 16.5.

Previous CT-scan demonstrated a large emphysematous bullae occupying the middle lobe. (Figure 2)

Bedside ultrasound revealed a heterogeneous cystic lesion unvascularized in doppler with peripheral aerial bullae inside.

Subsequent CT-PA during admission revealed a large cystic formation measuring 73 x 58 x 107 mm occupying the lateral segment of the middle lobe with hydro-aerial level corresponding much probably to a hemorrhagic bulla. No source of bleeding was identified nor any arteriovenous malformation. (Figure 3)

Bleeding was controlled initially with intravenous tranexamic acid and etamsylate with a net reduction in hemoptysis 5 days after admission. Subsequent embolization was scheduled and resulting in a control of the bleeding (Figure 4). Follow up was scheduled 1 month after admission. No complications were reported.

Figure 1 : Large volume haemoptysis

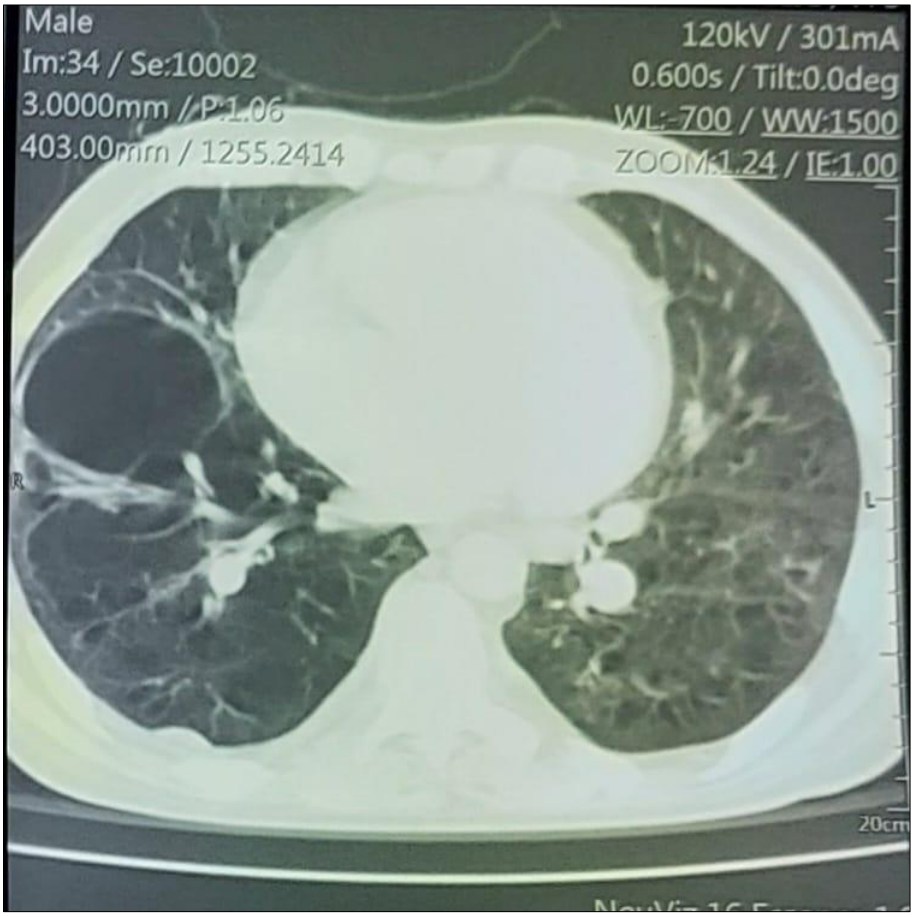

Figure 2 : Previous CT showing large bullae in the middle lobe

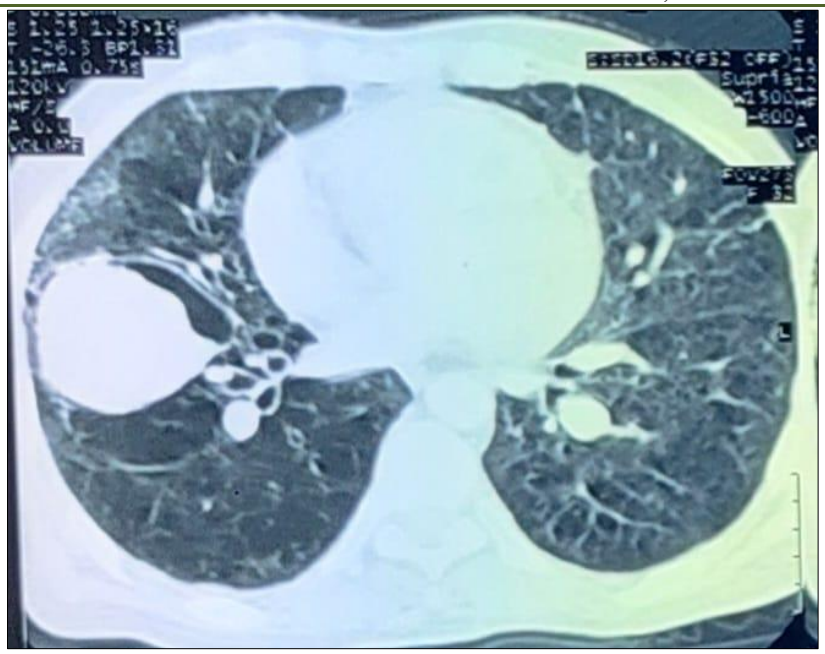

Figure 3: CTPA showing the hemorrhagic bullae

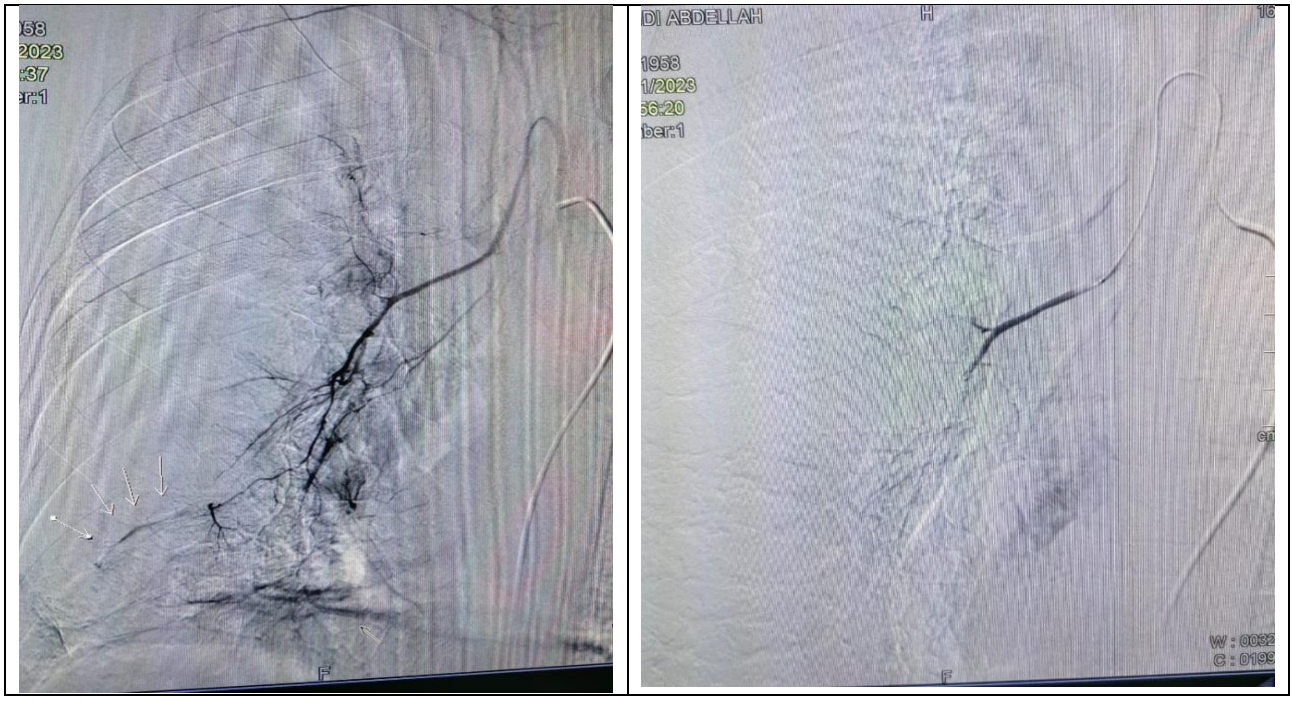

Figure 4: Embolization

DISCUSSION

Emphysema is considered as part of the COPD pathogenesis. It may develop as bullous and is detected by CT *(Agustí et al*., 2023). The most common complication of bullous emphysema remains pneumothorax, however intrabullous fluid accumulation is rare. Differential diagnosis include infected intrabullous collection, tuberculoma, aspergilloma, arteriovenous malformation.(Chandra *et al*., 2008; Henao-Martinez *et al*., 2012) The presence of previous imaging as is the case of our patient, the thorough medical history with no trauma, the negative biology for infectious or pulmonary embolism is diagnostic of this rare entity. Ideal management of large bullae in copd patient is surgery with improvement in quality of life and dyspnea. (Palla *et al*., 2005) Although the complicated nature of the disease, the patient's condition did not allow surgical treatment and subsequent embolization with good results was scheduled.

This case highlights the importance of thorough history-taking, review of previous imaging, early investigation and instigation of management, and a

multidisciplinary, holistic approach to patient care. (Nagashima *et al*., 2012; Withey & Tamimi, 2016)

CONCLUSION

Intrabullous fluid accumulation within emphysematous bullae, though rare, poses significant diagnostic and therapeutic challenges, especially in critically ill patients with underlying COPD. Thorough evaluation, including a detailed patient history, review of previous imaging, and prompt investigations, is crucial for accurate diagnosis and timely intervention. While surgical management offers a potential solution, patients with compromised health, as in our case, may necessitate conservative measures such as tranexamic acid and etamsylate administration. Interventional radiology remains a major tool in the therapeutic approach of hemoptysis.

REFERENCES

- Agustí, A., Celli, B. R., Criner, G. J., Halpin, D., Anzueto, A., Barnes, P., Bourbeau, J., Han, M. K., Martinez, F. J., Montes De Oca, M., Mortimer, K., Papi, A., Pavord, I., Roche, N., Salvi, S., Sin, D. D., Singh, D., Stockley, R., López Varela, M. V., & Vogelmeier, C. F. (2023). Global Initiative for Chronic Obstructive Lung Disease 2023 Report : GOLD Executive Summary. *European Respiratory Journal*, *61*(4), 2300239. https://doi.org/10.1183/13993003.00239-2023.
- Chandra, D., Rose, S. R., Carter, R. B., Musher, D. M., & Hamill, R. J. (2008). Fluid-containing emphysematous bullae: a spectrum of illness. *European Respiratory Journal*, *32*(2), 303-306. https://doi.org/10.1183/09031936.00158807.
- Henao-Martinez, A. F., Fernandez, J. F., Adams, S. G., & Restrepo, C. (2012). Lung bullae with air-fluid levels: what is the appropriate therapeutic approach?. *Respiratory care*, *57*(4), 642-645. https://doi.org/10.4187/respcare.01372.
- Nagashima, O., Suzuki, Y., Iwase, A., & Takahashi, K. (2012). Acute hemorrhage in a giant bulla. *Internal Medicine*, *51*(18), 2673-2673. https://doi.org/10.2169/internalmedicine.51.8335.
- Palla, A., Desideri, M., Rossi, G., Bardi, G., Mazzantini, D., Mussi, A., & Giuntini, C. (2005). Elective surgery for giant bullous emphysema: a 5-year clinical and functional follow-up. *Chest*, *128*(4), 2043-2050. https://doi.org/10.1378/chest.128.4.2043.
- Withey, S., & Tamimi, A. (2016). Spontaneous pulmonary haemorrhage into an existing emphysematous bulla. *Case Reports*, *2016*, bcr2015213144. https://doi.org/10.1136/bcr-2015-213144.