

CLINICAL IMAGE

“Burgundy wine” pleural effusion: An unusual manifestation of acute bacterial empyema

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Abstract

Although empyema diagnosis by thoracentesis is relatively straightforward, the pleural effusion can sometimes be bloody rather than purulent. We report a case of acute empyema with a dark-red bloody effusion, wherein multiple anaerobic bacteria were detected. Chest imaging findings improved with pleural drainage, intrapleural fibrinolytic therapy, and intravenous antibiotic treatment.

KEYWORDS

bloody appearance, empyema, pleural effusion

1 | CASE PRESENTATION

A 75-year-old man presented with a one-week history of persistent right chest pain, fever, and dyspnea. Chest radiography and computed tomography (CT) revealed multiple lung abscesses in the right lung and a large encapsulated pleural effusion (Figure 1). Thoracentesis revealed a dark-red malodorous pleural effusion with a pH of 6.74 and undetectable glucose (Figure 2). The pleural effusion culture was positive for *Fusobacterium nucleatum*, *Prevotella salivae*, and *Parvimonas micra*. Chest imaging findings improved following pleural drainage, intrapleural fibrinolytic therapy, and intravenous antibiotic treatment (Figure 3).

2 | DISCUSSION AND CONCLUSION

Empyema diagnosis is made based on the presence of pus, positive Gram's stain, or positive culture of the pleural fluid.¹ A red-colored pleural effusion is commonly seen in malignancy, trauma, and pulmonary embolism²; however, reports on its frequency in empyema are limited. It can be observed in cases complicated by bronchopleural fistula or vascular injury during thoracentesis, but these complications were not present in our patient. CT findings suggest that the dark-red effusion was caused by internal hemorrhage of the lung abscess. The pleural effusion can be bloody rather than purulent in empyema. It

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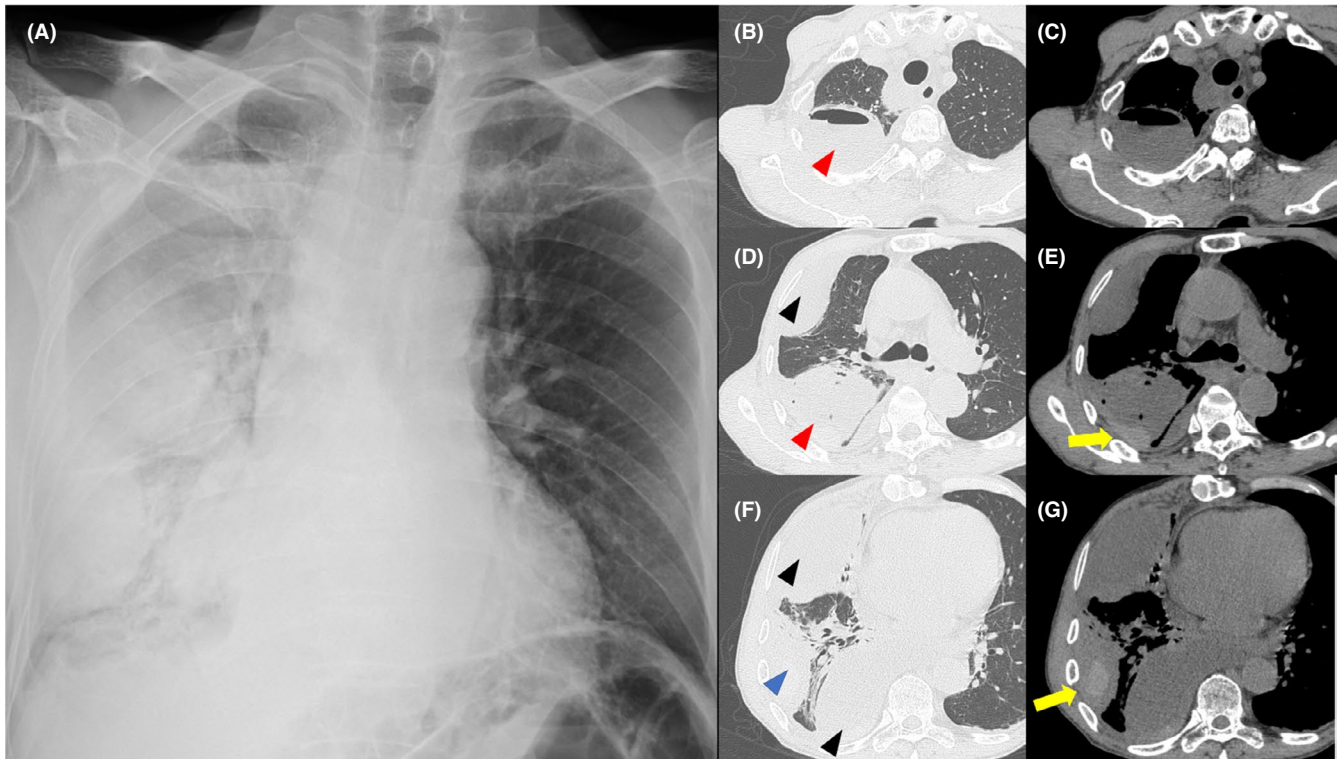


FIGURE 1 Chest imaging findings on admission. (A) Chest radiograph showing a large amount of right pleural effusion. (B–G) Chest computed tomography showing a large abscess in the lung with an air–fluid level in the right upper lobe (red arrowheads), a lung abscess in the right lower lobe (blue arrowhead), and large encapsulated pleural effusions (black arrowheads). The yellow arrows point to a high-attenuation area in the lung abscess, suggesting internal bleeding. Images B, D, and F show the lung window, and images C, E, and G show the plain mediastinal window

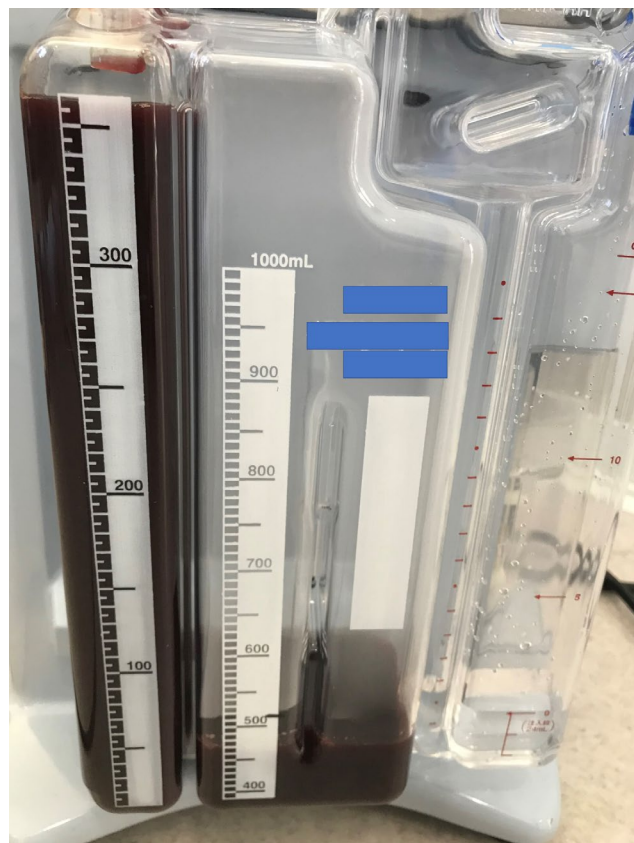
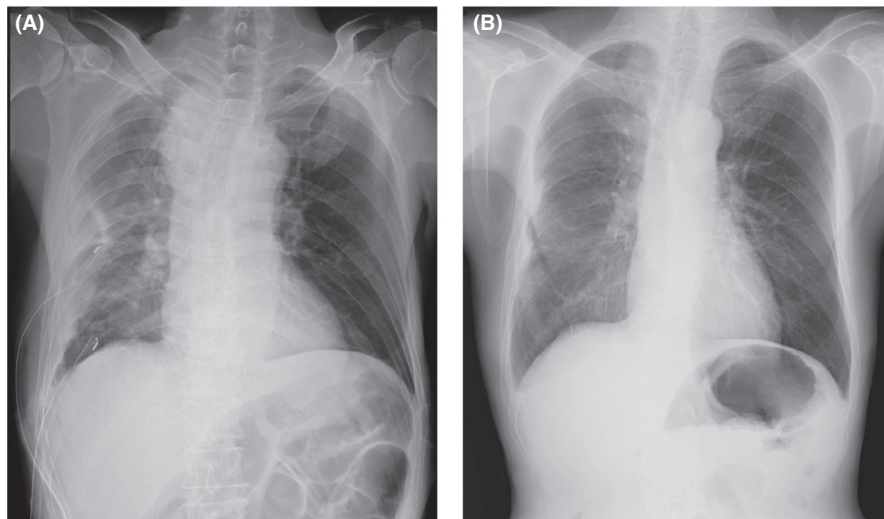


FIGURE 2 Dark-red pleural fluid drained from the chest resembling “Burgundy wine”

FIGURE 3 (A) Chest radiograph showing two chest tubes inserted for pleural drainage. (B) Remarkable improvement in empyema after seven weeks of treatment



is important to know this, as this may prevent panic when performing thoracentesis.

ACKNOWLEDGEMENTS

None.

CONFLICT OF INTEREST

None.

AUTHOR CONTRIBUTIONS

DK wrote the initial draft of the manuscript. AO was responsible for manuscript drafting and image modification. Both authors were directly involved in the treatment, critically revised the manuscript, and approved the final version.

CONSENT

The written informed consent to publish this report was obtained from the patient before the submission process.

DATA AVAILABILITY STATEMENT

No datasets were generated or analyzed for this case report.

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