Journal of Izmir Chest Hospital 2026;40(1):28–30
DOI: 10.14744/IGH.2026.51423

CASE REPORT / OLGU SUNUMU

Parenchyma-Sparing Hybrid VATS for Bronchiectasis-Related Hemoptysis: A Case of Combined Lingulectomy and Lower Lobe Multibasal Segmentectomy

Bronşektaziye Bağlı Hemoptizide Parankim Koruyucu Hibrit VATS: Eş Zamanlı Lingulektomi ve Sol Alt Lob Multibazal Segmentektomi Uygulanan Bir Olgu

Güntuğ BATIHAN
Muhammed Ziya ÖCAL
Hatice ÇETIN
Timuçin ALAR

Department of Thoracic Surgery,
Canakkale Onsekiz Mart University
Faculty of Medicine, Çanakkale, Türkiye

ORCID ID
GB : 0000-0001-5258-2856
MZÖ : 0000-0001-5013-1189
HÇ : 0009-0006-5226-4763
TA : 0000-0002-4719-002X

ABSTRACT

Bronchiectasis is a chronic pulmonary disease that may lead to recurrent infections and hemoptysis, sometimes requiring surgical intervention when medical treatment fails. Parenchyma-sparing surgical approaches have gained importance in selected patients with localized disease, particularly in those with limited pulmonary reserve or a history of previous thoracic surgery. We report the case of a 72-year-old male patient presenting with recurrent hemoptysis and a history of left thoracotomy and decortication. Thoracic computed tomography revealed bronchiectatic involvement limited to the lingular segment of the left upper lobe and the basal segments of the left lower lobe, while the superior segment was preserved. After antibiotic therapy, the patient underwent hybrid video-assisted thoracoscopic surgery with combined lingulectomy and lower lobe multibasal segmentectomy, preserving functional lung parenchyma. The procedure was completed without intraoperative complications. Postoperatively, the patient developed pneumonia, which was managed medically. Hemoptysis resolved completely, and the patient was discharged in stable condition. This case demonstrates that hybrid VATS allows safe performance of parenchyma-sparing resections in selected patients with bronchiectasis-related hemoptysis and may provide effective disease control while preserving pulmonary function.

Keywords: Bronchiectasis, hemoptysis, lingulectomy, segmentectomy, video-assisted thoracoscopic surgery.

ÖZ

Bronşektazi, tekrarlayan enfeksiyonlara ve hemoptiziye yol açabilen kronik bir akciğer hastalığıdır; medikal tedaviye dirençli olgularda cerrahi tedavi gerekebilir. Sınırlı tutulum gösteren hastalarda, özellikle geçirilmiş göğüs cerrahisi öyküsü veya kısıtlı akciğer rezervi varlığında, parankim koruyucu cerrahi yaklaşımlar önem kazanmaktadır. Olgumuz, tekrarlayan hemoptizi şikâyeti ile başvuran, özgeçmişinde sol torakotomi ve dekortikasyon öyküsü bulunan 72 yaşında erkek hastadır. Toraks bilgisayarlı tomografisinde sol üst lob lingula segmenti ile sol

* This study was presented as an oral presentation at the 13th National Thoracic Surgery Congress (October 16–19, 2025, Muğla)

Cite this article as: Batıhan G, Öcal ZM, Çetin H, Alar T. Parenchyma-Sparing Hybrid VATS for Bronchiectasis-Related Hemoptysis: A Case of Combined Lingulectomy and Lower Lobe Multibasal Segmentectomy. Journal of Izmir Chest Hospital 2026;40(1):28–30.

Received (Geliş): January 21, 2026 **Revised (Revize):** April 15, 2026 **Accepted (Kabul):** April 16, 2026 **Online (Çevrimiçi):** May 13, 2026
Correspondence author (Sorumlu yazar): Güntuğ Batıhan, BDepartment of Thoracic Surgery, Canakkale Onsekiz Mart University Faculty of Medicine, Çanakkale, Türkiye.
Tel: +90 474 225 21 05 **e-mail:** gbatihan@hotmail.com
© Copyright 2026 by Journal of Izmir Chest Hospital - Available online at www.ighdergisi.org

alt lob bazal segmentlerde bronşektazi saptanırken, süperior segmentin korunduğu görüldü. Antibiyoterapi sonrası hastaya hibrit video yardımlı torakoskopik cerrahi ile lingulektomi ve alt lob multibazal segmentektomi uygulandı ve sağlıklı parankim korundu. Postoperatif dönemde cerrahi komplikasyon izlenmedi; gelişen hastane kökenli pnömoni ise medikal olarak tedavi edildi. Postoperatif dönemde hastanın hemoptizi şikâyetinin tamamen gerilediği görüldü. Bu olgu, hibrit VATS yaklaşımıyla bronşektaziye bağlı hemoptizi tedavisinde parankim koruyucu rezeksiyonların güvenle uygulanabileceğini göstermektedir.

Anahtar kelimeler: Bronşektazi, hemoptizi, lingulektomi, segmentektomi, video destekli göğüs cerrahisi.

INTRODUCTION

Bronchiectasis is a chronic pulmonary disease characterized by irreversible bronchial dilatation, recurrent infections, and progressive parenchymal damage. Hemoptysis remains one of the most serious and potentially life-threatening complications of bronchiectasis and may necessitate surgical intervention when conservative measures fail.[1,2]

Surgical treatment is traditionally based on lobectomy; however, in selected patients, parenchyma-sparing resections can provide effective disease control while preserving lung function.[3–5] This approach becomes particularly relevant in elderly patients, those with limited pulmonary reserve, or patients with a history of previous thoracic surgery. Dense pleural adhesions and distorted anatomy in such cases increase surgical complexity and may limit the feasibility of standard minimally invasive techniques.

Hybrid video-assisted thoracoscopic surgery (VATS), which combines limited thoracotomy with thoracoscopic visualization, offers a practical solution in complex cases. We present a case of bronchiectasis-related hemoptysis managed successfully with hybrid VATS using combined lingulectomy and lower lobe multibasal segmentectomy, emphasizing a tailored, parenchyma-preserving surgical strategy.

CASE REPORT

A 72-year-old male patient was admitted with recurrent episodes of hemoptysis. His medical history was significant for left thoracotomy and decortication performed 10 years earlier due to pleural effusion and pachypleuritis. The patient was not receiving anticoagulant therapy and had no recent history of pulmonary infection at presentation.

Flexible bronchoscopy revealed purulent secretions and an active bleeding focus originating from the left bronchial tree. After initial stabilization, the patient underwent 15 days of targeted antibiotic therapy. Subsequent contrast-enhanced thoracic computed tomography demonstrated bronchiectatic changes localized to the lingular segment of the left upper lobe (S4–5) and the basal segments of the left lower lobe (S7–10), while the superior segment (S6) appeared relatively preserved (Fig. 1).

Pulmonary function tests showed borderline reserve. Given the localized disease distribution, prior thoracic surgery, and the need to preserve functional lung parenchyma, a parenchyma-sparing surgical approach was planned.

Surgical Technique

The operation was performed using a hybrid video-assisted thoracoscopic approach through a mini lateral thoracotomy. Intraoperatively, dense pleural adhesions related to the previous thoracotomy were encountered and carefully dissected under direct vision with thoracoscopic assistance.

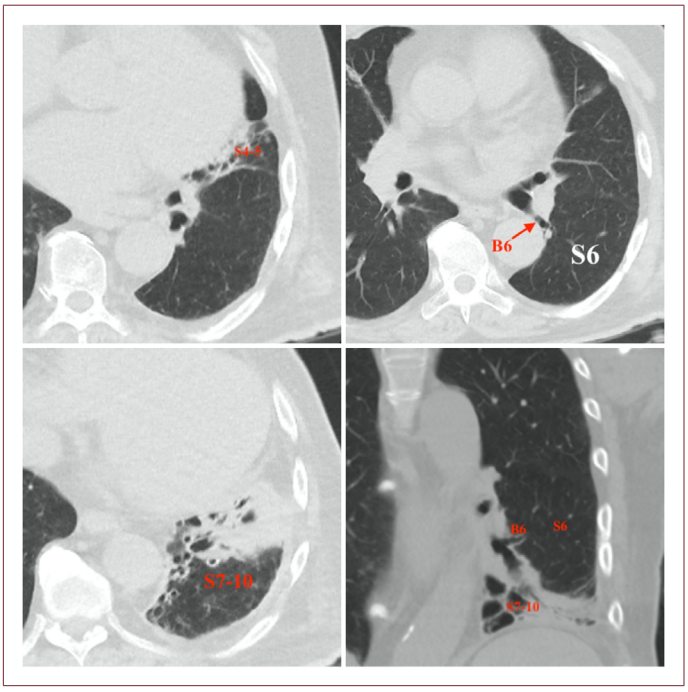


Figure 1: Preoperative thoracic computed tomography images demonstrating bronchiectatic involvement of the left lung. Bronchiectatic changes are observed in the lingular segment of the left upper lobe (S4–5) and the basal segments of the left lower lobe (S7–10), while the superior segment (S6) appears relatively preserved.

After adhesiolysis, the segmental bronchovascular anatomy was identified. Based on preoperative imaging and intraoperative findings, left upper lobe lingulectomy was performed, followed by multibasal segmentectomy of the left lower lobe. The superior segment (S6) was deliberately preserved to maintain maximal functional lung parenchyma. This tailored approach allowed complete resection of the bronchiectatic areas responsible for hemoptysis while avoiding unnecessary lobectomy (Fig. 2).

The procedure was completed without intraoperative complications.

Postoperative Course

No major surgical complications, such as prolonged air leak or postoperative bleeding, were observed. The patient developed postoperative pneumonia, which responded well to medical treatment. Hemoptysis resolved completely, and the patient was discharged in stable condition.

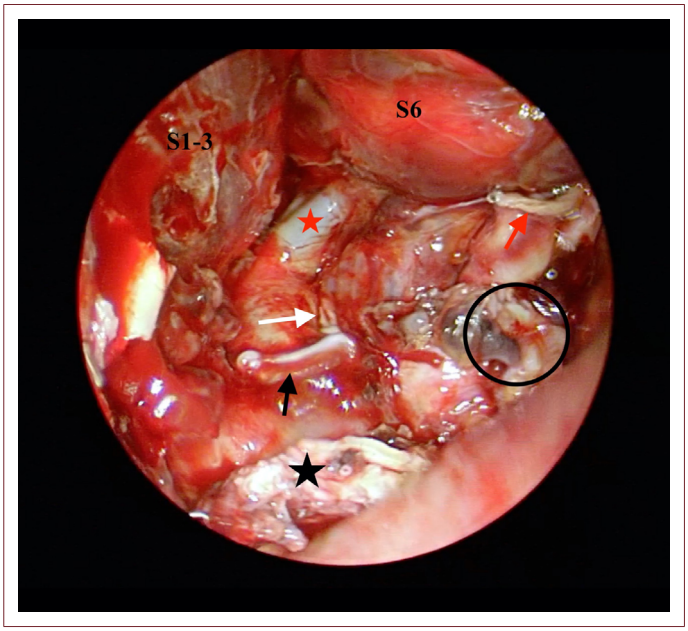


Figure 2: Intraoperative hybrid video-assisted thoracoscopic view showing the surgical field during combined lingulectomy and lower lobe multibasal segmentectomy. The preserved superior segment (S6), adjacent segmental structures, and bronchovascular anatomy are demonstrated after adhesiolysis and parenchyma-sparing dissection.

Written informed consent was obtained from the patient for the publication of this case report and any accompanying images.

DISCUSSION

Hemoptysis secondary to bronchiectasis remains a challenging clinical condition, particularly in patients of advanced age or with a history of previous thoracic surgery. Although lobectomy provides definitive disease control, it may represent overtreatment when bronchiectatic involvement is limited to specific segments.

In the present case, disease distribution allowed combined lingulectomy and lower lobe multibasal segmentectomy, achieving complete removal of the affected parenchyma while preserving healthy lung tissue. Preservation of the superior segment of the lower lobe was particularly important for maintaining postoperative pulmonary function.

Hybrid VATS offers several advantages in such complex scenarios. It facilitates safe adhesiolysis, improves visualization of distorted anatomy, and reduces surgical trauma compared with full thoracotomy. When performed in appropriately selected patients, hybrid VATS enables complex parenchyma-sparing resections with acceptable morbidity.[4,5]

This case demonstrates that combined and multisegmental resections can be safely performed using a hybrid minimally invasive approach, even in the presence of dense pleural adhesions and prior thoracic surgery.

CONCLUSION

Hybrid video-assisted thoracoscopic surgery enables the safe and effective performance of parenchyma-sparing resections, such as combined lingulectomy and lower lobe multibasal segmentectomy, in selected patients with bronchiectasis-related hemoptysis. When disease distribution permits, this tailored approach may reduce surgical morbidity while preserving pulmonary function.

Disclosures

Ethics Committee Approval: This is a single case report, and therefore ethics committee approval was not required in accordance with institutional policies.

Informed Consent: Written informed consent was obtained from the patient included in this study.

Conflict of Interest: The authors declare that there is no conflict of interest.

Funding: The authors declares that no financial support was received for the research, authorship, and/or publication of this study.

Use of AI for Writing Assistance: No artificial intelligence (AI) tools were used in the design, data collection, analysis, interpretation, or writing of this manuscript. The entire study and manuscript preparation were conducted solely by the authors.

Authorship Contributions: Concept – GB, MZÖ, HÇ; Design – GB; Supervision – TA; Materials – MZÖ, HÇ; Data Collection and/or Processing – GB, TA; Analysis and/or Interpretation – GB, MZÖ; Literature Search – HÇ, TA; Writing – GB, MZÖ, HÇ; Critical Reviews – TA.

Peer-review: Externally peer-reviewed.

REFERENCES

1. Agasthian T, Deschamps C, Trastek VF, Allen MS, Pairolero PC. Surgical management of bronchiectasis. Ann Thorac Surg 1996;62:976–80.
2. Coutinho D, Fernandes P, Guerra M, Miranda J, Vouga L. Surgical treatment of bronchiectasis: A review of 20 years of experience. Rev Port Pneumol (2006) 2016;22:82–5.
3. Ceylan KC, Batıhan G, Kaya ŞÖ. Usluer O, Gürsoy S. Treatment of bronchiectasis in the era of minimally invasive surgery: 10-year experience in a single center. Indian J Surg 2021;83:1511–8.
4. Xu X, Dai J, Jin K, Liu X, Yang Y, Ge T, et al. Surgery for bronchiectasis-destroyed lung: feasibility of video-assisted thoracoscopic surgery, and surgical outcomes. Interdiscip Cardiovasc Thorac Surg 2024;38:ivad175.
5. Zhang P, Zhang F, Jiang S, Jiang G, Zhou X, Ding J, et al. Video-assisted thoracic surgery for bronchiectasis. Ann Thorac Surg 2011;91:239–43.