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Clinical Image

Pulmonary Venous Anatomical Variation: V6 and Middle Lobe Vein Forming an Independent Trunk

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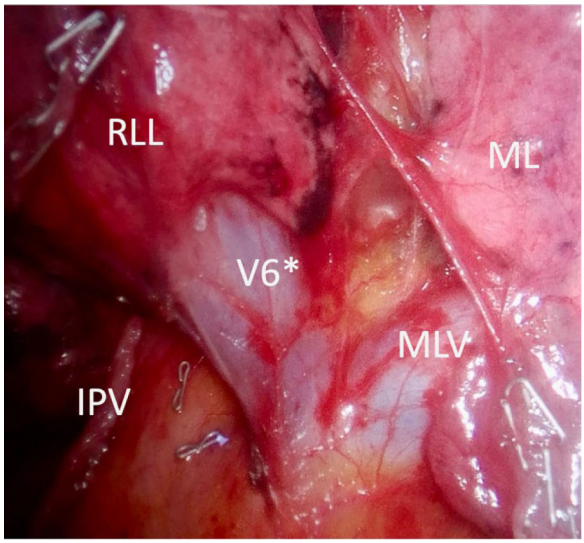

Fig. 1. Intraoperative thoracoscopic view during right lower lobectomy showing an anomalous venous drainage pattern, with an independent trunk formed by the segment VI vein (V6, asterisk) and the middle lobe vein (MLV), draining directly into the left atrium. IPV: inferior pulmonary vein; RLL: right lower lobe; ML: middle lobe.

During a right lower lobectomy by video-assisted thoracoscopic surgery, after division of the inferior pulmonary vein (IPV), we identified an uncommon venous pattern: an independent trunk formed by the segment VI vein (V6*) together with the middle lobe vein (MLV) (Fig. 1). This variant had not been recognized on preoperative computed tomography. Classically, V6 is a tributary of the IPV, with drainage into the right superior pulmonary vein (RSPV) being the most frequent variation. The configuration of a common V6–MLV trunk with direct outflow into the left atrium is exceptionally rare. Venous anatomy is considerably more variable than arterial: V6 may drain into the left atrium in up to 7.9% of cases, while the MLV usually drains into the RSPV (68%) but may also drain directly into the left atrium in 7.9–20.7% [1,2]. Recognition of such variants is crucial to avoid vascular injury or inadvertent transection compromising venous return.

Author contributions

Álvaro Fuentes-Martín: Conceptualization, Clinical Management, Writing – Original Draft, Supervision, Figure Preparation, Writing – Review & Editing. Natalia Cenci Nizzo; Ángel Cilleruelo Ramos: Literature Review, Writing – Review & Editing.

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Ethical disclosures

The authors declare that this work complies with the ethical standards of the journal. Written informed consent was obtained from the patient for publication of the intraoperative image. No experiments were performed on humans or animals for this study.

AI declaration

During the preparation of this work, the authors used generative pre-trained transformer 5 (GPT-5) in order to check grammar and translation. After using this tool, the authors reviewed and edited the content as needed and take full responsibility for the content of the publication.

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Conflicts of interest

The authors state that they have no conflict of interests.

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