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Clinical and Surgical Perspectives on Left-Sided Inferior Vena Cava: A Systematic Review and Cadaveric Case Report

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Graf, L; Mandler, EM; Hirtler, L.

Corresponding author:

Lena Hirtler

lena.hirtler@meduniwien.ac.at

Author Affiliation:

Medical University of Vienna.

ADMINISTRATIVE INFORMATION**Support** - None.**Review Stage at time of this submission** - Preliminary searches.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202670100**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 25 July 2026 and was last updated on 25 July 2026.**INTRODUCTION**

Review question / Objective To systematically identify, categorize, and analyze the clinical presentations of left-sided inferior vena cava, distinguishing between symptomatic vascular syndromes and incidental discoveries across radiological, surgical, and interventional contexts.

Condition being studied Prevalence of left-sided vena cava inferior.

METHODS

Search strategy "left-sided inferior vena cava" OR "left sided IVC" OR "persistent left IVC" OR "left IVC" OR "LIVC") AND ("Venous Thrombosis" OR "thrombosis" OR "Intraoperative Complications" OR "surgery" OR "surgical" OR "intervention" OR "incidental finding" OR "unexpected" OR "nutcracker syndrome" OR "clinical presentation" OR "symptoms" OR "complication".

Participant or population All patients with the diagnosis of left-sided vena cava inferior.

Intervention N/A.

Comparator N/A.

Study designs to be included Case Series and Retrospective Cohort Studies.

Eligibility criteria Inclusion: Human subjects of any age confirmed to have an isolated left-sided infrarenal or complete left-sided inferior vena cava via imaging, surgery, or autopsy. Exclusion criteria: Mixed congenital anomalies where LIVC cannot be isolated (e.g., severe Situs Inversus totalis, Situs ambiguus, heterotaxy syndromes).

Information sources Electronic databases (PubMed, Embase).

Main outcome(s) Prevalence, symptoms and other challenges of left sided vena cava inferior.

Quality assessment / Risk of bias analysis The methodological quality and risk of bias of the included studies will be independently assessed by two reviewers using appraisal tools appropriate to the study design. The McGill University Mixed Methods Appraisal Tool (MMAT) will be used to evaluate the methodological quality of studies across domains such as study design appropriateness, data collection, participant selection, and interpretation of findings. Studies will additionally be assessed using the Newcastle Ottawa Scale (NOS), which evaluates selection of participants, comparability of study groups, and ascertainment of outcomes or exposures. Any disagreements between reviewers will be resolved through discussion or consultation with a third reviewer. The results of the quality assessment will be presented in tabular form and incorporated into the interpretation of findings to inform the overall strength and reliability of the evidence.

Strategy of data synthesis This systematic review will follow the PRISMA guidelines for the synthesis and reporting of evidence. Data extracted from eligible studies will be entered into a standardized data extraction table. Extracted information will include study characteristics (authors, year, country, and study design), patient characteristics, details on the specific variant and accompanying symptoms. Extracted data will be checked for completeness and consistency prior to synthesis. A narrative synthesis will be conducted for all included studies. The synthesis will summarize and compare study findings, highlighting patterns, consistencies, and discrepancies across studies. Summary tables and figures will be used to present study characteristics and findings in a structured manner.

Subgroup analysis N/A.

Sensitivity analysis N/A.

Country(ies) involved Austria.

Keywords Left vena cava inferior; variant diagnosis; hemodynamic changes in anatomical variants.

Contributions of each author

Author 1 - Lena Graf.

Email: lena.graf@meduniwien.ac.at

Author 2 - Elisabeth Mandler.

Email: elisabeth.mandler@meduniwien.ac.at

Author 3 - Lena Hirtler.

Email: lena.hirtler@meduniwien.ac.at