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Letter to the Editor

Comment on "Distribution of Splenic Arterial Flow and Segmental Spleen Volume for Partial Splenic Arterial Embolization"

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To the Editor:

The article by Ueda et al.[1], entitled "Distribution of Splenic Arterial Flow and Segmental Spleen Volume for Partial Splenic Arterial Embolization," presents important and insightful findings. The authors' use of quantitative CT analysis to delineate the volume ratios of the spleen, divided into three segments based on splenic arterial distribution, represents a meaningful contribution to current understanding of partial splenic arterial embolization (PSE) planning.

One of the most striking findings was that the segmental spleen volume ratios—approximately 35%, 37%, and 28% for the upper, middle, and lower segments, respectively—remained constant regardless of the presence of liver cirrhosis. This observation is particularly intriguing, as previous studies on portal hypertension–associated splenomegaly suggest that hemodynamic alterations in cirrhosis do not necessarily produce uniform changes across splenic regions.

For example, Hu et al.[2], using three-dimensional CT volumetry, demonstrated that splenomegaly in cirrhosis reflects multiple hemodynamic abnormalities, including congestion, increased portal venous inflow, and enlargement of the splenic vein. Bradley et al.[3] similarly showed through quantitative MRI analysis that splenic perfusion decreases with the progression of cirrhosis, implying that perfusion may not be uniformly distributed across splenic tissue.

Furthermore, Karimov et al.[4] reported dynamic changes in portal hemodynamics following splenic artery embolization, with portal pressure decreasing markedly from 428 to 342 mmH_2O post-procedure and subsequently rising again over six months due to collateral vessel development; new collateral channels were clearly depicted in their **Figure 2**. These findings indicate that blood flow redistribution and collateral proliferation can lead to considerable variation in regional splenic inflow and congestion.

In addition, as Bolognesi et al.[5] have highlighted splanchnic vasodilation and hyperdynamic circulation as hallmarks of cirrhosis, emphasizing that visceral circulation—including that of the spleen—undergoes multifaceted and dynamic alterations. Consistent with this, Radu et al.[6] have underscored that the progression of cirrhosis is accompanied by the formation of portosystemic collaterals and associated changes in splenic–portal hemodynamics.

Taken together, existing literature suggests that splenic blood flow and congestion in cirrhosis are not uniformly altered. Against this background, the finding by Ueda et al. that segmental spleen volume ratios remain constant regardless of underlying disease is particularly compelling and may indicate an inherent structural or developmental consistency in splenic hypertrophy.

Regarding regional assessment of splenic perfusion, although indocyanine green (ICG) fluorescence imaging has gained wider application in recent years, the EAES consensus[7] notes that evidence supporting its use in the spleen remains limited to case reports, and standardized recommendations could not be formulated. This underscores the present value of the authors' high-resolution CT–based quantification of splenic segments.

Overall, this study provides valuable data on splenic arterial distribution and anatomy, while offering relevant clinical implications for PSE strategy. The demonstrated constancy of splenic segmental ratios is a noteworthy finding that invites further reflection on splenic structure and pathophysiology. I look forward to the authors' continued contributions to this important field.

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