

BELIEFS ABOUT ANATOMICAL LIVER RESECTION: DOES ANATOMICAL LIVER RESECTION ALWAYS ENSURE ADEQUATE SURGICAL MARGINS?

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Background : Anatomical liver resection (ALR) is regarded as the gold standard for achieving sufficient surgical margins in hepatocellular carcinoma (HCC). However, its superiority over nonanatomic resection (NAR) in ensuring oncological outcomes remains controversial. This study evaluates the impact of resection type and margin adequacy on survival outcomes.

Methods : A retrospective cohort study was conducted on patients undergoing liver resection for HCC between 2005 and 2021. Inclusion criteria included ALR or NAR for tumors in right lobe, with margin and survival data available. Tumors were grouped by size (≤ 3 cm (n=485) or > 3 cm (n=529)), and sufficient margins were defined as ≥ 1 cm. Multivariate analysis identified independent prognostic factors, including tumor size, margin adequacy, and resection type.

Results : Survival outcomes were significantly better in patients with sufficient margins, regardless of resection type. ALR with sufficient margins showed comparable survival to NAR with sufficient margins, while groups with insufficient margins had poorer outcomes irrespective of resection type. Multivariate analysis revealed that tumor size (HR: 2.50 for > 5 cm, $p < 0.001$) and sufficient margin achievement (HR: 0.60, $p = 0.009$) were significant prognostic factors for survival. Resection type ($p = 0.18$) was not independently associated with oncologic outcomes, underscoring the importance of margin adequacy over the choice of ALR or NAR.

Conclusions : Achieving adequate margins is a more important determinant of survival than the type of resection. A tailored NAR approach can achieve similar results to ALR when margins are appropriate. Tumor size and margin adequacy should guide individualized surgical strategies to optimize patient outcomes in HCC.

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