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The Impact of Resection Margins on the Overall and Disease-free Survival of Hepatic Colorectal Metastases

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Abstract

Background: Liver resection for colorectal liver metastasis (CRLM) represents a valid therapeutic option. It can offer a chance of good long-term survival, with a 5 year survival of 25- 40%. Recent studies have shown that achieving a minimum of 1 cm surgical margin is not essential for long-term survival, and a microscopic free liver resection margin can be sufficient. The aim of this study is to evaluate the impact of the resection margin on recurrence, disease free survival and the overall survival.

Materials and Method: All the primary liver resections with curative intention for CRLM at our surgical division between 2000 and 2010 were retrospectively reviewed. The liver resection margins were stratified according to their width. The positive and negative prognostic factors were analyzed in a univariate analysis.

Results: A total of 130 patients met the study inclusion criteria. Twenty-four patients underwent major hepatectomies, while 106 patients underwent minor hepatectomies. On statistical analysis, surgical margin width ($p=0.045$), advanced age ($p<0.001$), metachronous metastasis ($p=0.018$) and multiple tumours ($p=0.019$) were associated with lower long-term survival rates. In addition, advanced age ($p=0.0004$), rectal tumour ($p=0.004$), metachronous metastases ($p=0.026$), multiple tumours ($p=0.017$), lower width in surgical margin ($p=0.002$) were linked to a reduced disease-free survival.

Conclusion: Our study confirms that the extent of the resection margin is a powerful factor influencing prognosis after hepatectomy for CRLM. According to our experience, resection margin width is significantly associated with a higher risk of intra and extra-hepatic recurrence and less disease-free survival. However, the impossibility of achieving a resection margin greater than or equal to 10 mm should not be considered as a contraindication to surgery.

Key words: hepatic resection, margins, width. liver metastases, histologic measurement, colon, rectum, colorectal, cancer