ASO AUTHOR REFLECTIONS

ASO Author Reflections: Prognostic Impact of Budding Grade on Patients with Residual Liver Recurrence of Colorectal Cancer After Initial Hepatectomy

Takuji Noro, MD, PhD

Department of Surgery, Dokkyo Medical University Saitama Medical Center, Saitama, Japan

PAST

Hepatectomy for colorectal liver metastases (CRLM) has been long known to improve the prognosis of affected patients. However, the incidence of recurrence in the remnant liver or other organs remains high. Repeat hepatectomy (RH) has been considered a valuable treatment option for the early recurrence, with its usefulness reported about 1990. In the past, a decision to conduct a hepatectomy or RH for CRLM was based on certain risk score systems that considered the following prognostic factors: serosa invasion of the primary lesion, surgical margin, disease-free interval, number of tumors, the largest diameter of tumor, and value of the tumor marker.¹ In addition, RH has been indicated using the same criteria as for initial hepatectomy.

PRESENT

Treatment strategies for CRLM have changed due to the development of modern surgical techniques and chemotherapy. Consequently, a greater number of patients benefit from hepatic resection. However, the recurrence rate after initial hepatectomy remains high. Therefore, current research efforts are focusing on new prognostic factors (e.g., tumor-budding or RAS mutations). Tumor-budding is a morphologic feature at the invasive tumor edge associated with epithelial-mesenchymal transition (EMT).² During EMT, epithelial cells lose their polarity and adhesiveness and acquire the ability to migrate and invade. As a result, cancer cells spread to other organs via the bloodstream.

Moreover, EMT is associated with signaling-suppressing apoptosis and with rendering resistance to anticancer drugs and radiation. Therefore, EMT is a marker of malignancy.

FUTURE

Tumor-budding together with other new pathologic factors will be applied in a clinical setting with molecular meaning and has potential to be of great clinical importance.^{3,4} Research on these factors will facilitate and advance the individualization of CRLM treatment. To date, RH remains the most effective clinical strategy for CRLM patients. New prognostic factors, however, might enable more accurate selection of patients who will benefit the most from this procedure.⁵

DISCLOSURE There are conflicts of interest.

REFERENCES

1. Fong Y, Fortner J, Sun RL, et al. Clinical score for predicting recurrence after hepatic resection for metastatic colorectal cancer: analysis of 1001 consecutive cases. *Ann Surg*. 1999;230:309–18; discussion 318–21.
2. Bronsert P, Enderle-Ammour K, Bader M, et al. Cancer cell invasion and EMT marker expression: a three-dimensional study of the human cancer-host interface. *J Pathol*. 2014;234:410–22.
3. Ueno H, Konishi T, Ishikawa Y, et al. Histologic categorization of fibrotic cancer stroma in the primary tumor is an independent prognostic index in resectable colorectal liver metastasis. *Am J Surg Pathol*. 2014;38:1380–6.
4. Ueno H, Shinto E, Shimazaki H, et al. Histologic categorization of desmoplastic reaction: its relevance to the colorectal cancer microenvironment and prognosis. *Ann Surg Oncol*. 2015;22:1504–12.
5. Noro T, Nishikawa M, Hoshikawa M, et al. Prognostic impact of budding grade in patients with residual liver recurrence of colorectal cancer after initial hepatectomy. *Ann Surg Oncol*. 2020. <https://doi.org/10.1245/s10434-020-08684-3>.

© Society of Surgical Oncology 2020

First Received: 16 June 2020;
Published Online: 7 August 2020

T. Noro, MD, PhD
e-mail: tnoro@dokkyomed.ac.jp

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.