



Is the oncological impact of vascular invasion more important in right colon cancer?

Gyung Mo Son

Department of Surgery, Pusan National University Yangsan Hospital, Pusan National University School of Medicine, Yangsan, Korea

Vascular invasion is an unfavorable prognostic factor for the recurrence and systemic metastasis of colon cancer. An interesting study in this issue evaluate the difference in the oncological impact of vascular invasion according to tumor side in colon cancer. The authors suggest that the oncological impact of vascular invasion could be worse in nonmetastatic right colon cancer than in nonmetastatic left colon cancer. Herein, hematoxylin-eosin staining was used to detect vascular invasion. In a recent study, elastin staining could detect more venous invasion. It is expected that the molecular pathologic characteristics of colon cancer can be identified precisely and the oncological outcomes of colon cancer can be improved in the future.

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Corresponding author

Gyung Mo Son

Department of Surgery, Pusan National University Yangsan Hospital, 20 Geumo-ro, Mulgeum-eup, Yangsan 50612, Korea

Tel: +82-55-360-2124

Fax: +82-55-360-2154

E-mail: skm1711@pusan.ac.kr

ORCID:

<https://orcid.org/0000-0002-8861-6293>

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Attention to side-related differences in colon cancer has increased based on the molecular pathways of carcinogenesis and oncological outcomes [1]. Vascular invasion is an unfavorable prognostic factor for recurrence and the systemic metastasis of colon cancer. Therefore, even in early colon cancer without lymph-node metastasis, vascular invasion is accepted as an indication for adjuvant chemotherapy [2,3].

Shalkamy et al. [4] evaluate the difference in the oncological impact of vascular invasion according to tumor side in colon cancer. The authors suggest that the oncological impact of vascular invasion could be worse in nonmetastatic right colon cancer than in nonmetastatic left colon cancer [4].

The cause of molecular biological differences according to the sidedness of colon cancer has not yet been clearly elucidated. However, the differences in the dominant clinicopathological characteristics of right colon cancer such as female, advanced stage, poor oncologic outcomes, microsatellite instability, and

mucinous adenocarcinoma raise many questions [5]. Although the vascular invasion shown in this study had a similar frequency for both right and left colon cancer, it is quite interesting that it was analyzed as a poorer prognostic factor in right colon cancer [4].

The authors suggest several possibilities for the prognostic impact of vascular invasion of right colon cancer. The vascular anatomy of the right colon is more complicated and variable than that of the left colon [4]. Moreover, manipulation of the tumor and its vasculature during surgery is more frequent for the right colon and it might result in the dissemination of tumor cells into the blood and lymphatic systems [6]. The presence of vascular invasion under these surgical conditions might result in increased dissemination of tumor cells into the vasculature, which could explain the poor prognosis of right colon cancer with vascular invasion. To evaluate this possibility, intraoperative cancer cell dissemination using cell-free DNA and circulating tumor cells

can be considered a laboratory landmark for the prognostic challenge affect by colon cancer surgery. Liquid biopsy for detecting traces of cancer cells in the blood has recently been spotlighted, and these new diagnostic techniques can help create important prognostic indexes in the future [7].

This study uses hematoxylin-eosin staining to detect vascular invasion. In a recent study, elastin staining was able to detect more venous invasion [8]. Venous invasion—confirmed by elastin staining—was considered a powerful predictor of poor disease-free survival beyond lymph-node metastases when limited to the pericolic area. Therefore, there is a need to consider elastin staining for future studies on vascular invasion.

Recently, the National Comprehensive Cancer Network (NCCN) guidelines recommended applying a vascular endothelial growth factor receptor (VEGFR) antibody such as bevacizumab as a targeted therapy for metastatic right colon cancer. The oncological results of the more effective VEGFR antibody in right colon cancer suggest that the biologic properties may differ depending on the tumor sidedness [9]. Currently, with the development of molecular biology, research is being conducted to establish the molecular stage of colon cancer and to elaborate new strategies of targeted treatment for metastatic colon cancer. It is expected that the molecular pathologic characteristics of colon cancer can be identified precisely and the oncological outcomes of colon cancer will be improved in the future [10].

NOTES

Conflict of interest

The author has no conflicts of interest to declare.

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