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EDITORIAL – THORACIC ONCOLOGY

Minimally Invasive Resection for Oncologically Borderline Distant Lymph Node Metastasis in Esophageal Cancer: Is This Extended or Less-Invasive Surgery?

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Neoadjuvant treatment (chemoradiotherapy or chemotherapy) followed by esophagectomy delivered using the Chemoradiotherapy for Esophageal Cancer followed by Surgery Study (CROSS), fluorouracil, leucovorin, oxaliplatin, and docetaxel (FLOT), or docetaxel, cisplatin and 5-fluorouracil (DCF) regimen has become the standard therapy for resectable, locally advanced esophageal cancer (mainly stage II–III) and provides favorable survival outcomes.[1–3] On the other hand, with stage IV disease, the cancer is no longer localized and requires systemic nonsurgical treatments: chemotherapy and chemoimmunotherapy with or without radiation therapy. A subsequent esophagectomy is only performed if a small amount of cancer remains at the end of the nonsurgical treatment. Esophagectomy is generally not indicated in cases with distant organ metastasis, but the situation is slightly different in cases with distant lymph node (LN) metastasis. So, what is the difference between regional LN and distant LN metastasis? Notably, whether a LN is defined as regional or distant will depend on one's country or region. For example, a metastatic supraclavicular LN was recently defined as distant metastasis in the Japanese Classification of Esophageal Cancer, which is consistent with the American Joint Committee on Cancer (AJCC) staging system; nonetheless, it is still targeted for dissection (three-field LN dissection) in Japan, although this is not so in the USA or Europe. On the other hand, pretracheal LNs [paratracheal LNs (4R) in the AJCC classification] and LNs on the dorsal side of the aorta are defined as distant LNs in the Japanese classification but as regional mediastinal LNs in the AJCC classification. Despite these differences, one thing that can be said with certainty is that, in this era of preoperative adjuvant treatment, distant LN metastasis can be eliminated or downstaged before surgery, and an increasing number of cases are eligible for R0 surgery. It can therefore be said that preoperative treatment reduces the weight of distant LN metastasis.

In this issue of *Annals of Surgical Oncology*, Prof. Daiko and colleagues from the National Cancer Center Hospital, Japan focused in part on the survival outcomes of 80 patients with resectable distant LN metastasis without distant organ metastasis.[4] Survival analysis of patients with resectable LN metastasis showed a 3-year survival rate of 76.7%, equivalent to the survival outcomes among patients without distant LN metastasis. The reported prognostic factors were metastatic LNs in two different regions at initial diagnosis, ypN2/3 status after neoadjuvant treatment, and two or more ypM1(distant) LN metastases.

The authors proposed that four sites of metastatic distant LNs—supraclavicular LNs, pretracheal LNs, posterior thoracic paraaortic LNs, and LNs around the abdominal aorta (the upper border of the celiac axis or left adrenal gland, lower border of the left renal vein, lateroposterior border of the perirenal adipose tissue, and internal border of the descending aorta)—were potentially susceptible to curative resection. Here I will call this "oncologically borderline distant LN metastasis." I want to emphasize that minimally invasive surgery (MIS) was used to dissect these oncologically borderline, distant LN metastases. Pretracheal LNs

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were dissected via the right thoracic cavity. Although not routinely resected, posterior thoracic paraaortic LNs were dissected via the left thoracic cavity using only three 5-mm ports. Furthermore, LNs around the abdominal aorta were laparoscopically dissected just after mobilization of the stomach. MIS has made distant LN metastasis dissection less difficult to perform by providing a good visual field and reducing patient stress. While the current trend in surgery for cancer is moving from extended resection to MIS, the use of MIS for distant LN resection is an extended resection that maintains minimal invasiveness and is truly a new trend.

Conversion surgery is surgical treatment aiming at an R0 resection after nonsurgical therapy of tumors that were initially unresectable. There is no consensus that conversion therapy is preferable for initially unresectable esophageal cancer. We still need to confirm that conversion therapy improves outcomes for esophageal cancer patients as compared with continuous systemic treatment and determine the indications for conversion surgery. The recent rapid spread of the use of immune checkpoint inhibitors has significantly changed the first-line treatment of esophageal cancer, making it more powerful. Without a doubt, this field will continue to advance significantly, with the development of new anticancer drugs and the spread of high-precision radiotherapy. Moreover, with the rapid development of robot-assisted surgery, we are entering an era in which less invasive and advanced surgeries can be performed in a gentler manner. It is no exaggeration to say that advances in both nonsurgical treatment and MIS are leading to the expansion of surgery for esophageal cancer with oncologically borderline distant LN metastasis.

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