Editorial

Lateral pelvic lymph node dissection in the management of locally advanced low rectal cancer

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The management of rectal cancer has seen major developments over the last few decades (1) with increasing use of pre-operative imaging for local staging, more clear role for neoadjuvant chemoradiotherapy (nCRT) (2) and standardization of radical local resection with total mesorectal excision (TME) surgery which resulted in reduction of local recurrence rate to less than 10% (3). However, it has been increasingly recognized that patients with locally advanced low rectal cancer represent a particular challenge in terms of local disease control (4). This subgroup of patients is now known to have lateral pelvic lymph node (LPLN) metastasis in 15% to 20% which results in poor survival rates due to an increased risk of local and distant recurrence (5).

In the Western world, patients who have LPLN on initial staging scans are considered to have distant metastasis and offered nCRT followed by TME resection (6). However, in Japan these patients are considered to have local disease and therefore they are offered TME surgery with bilateral LPLND (4). Unfortunately, each of those treatment strategies has its own shortcomings. On one hand, there are studies to suggest that nCRT does not completely eradicate LPLN metastasis (7) with some evidence to show an almost linear relationship between lymph node size on the initial staging scans and local recurrence rates (4). Moreover, radiation therapy is associated with risks of radiation enteritis and secondary cancers (6). On the other hand, LPLND increases the morbidity from surgery with increased operating time, intraoperative blood loss, higher possibility of urinary and sexual dysfunction with lack of definitive evidence of better oncologic outcomes following such morbid procedure (8).

There is an ongoing debate on what should be considered as suspicious lymph nodes and what criteria to use to make such diagnosis (4). Most of the studies use a size and/or morphology criteria to diagnose suspicious lymph nodes in the context of low rectal cancer (9). However, there is no agreement on the cut off size to what should be called suspicious LPLN on preoperative imaging as this ranges from 5 to 10 mm in the short axis between various studies (6). Morphological criteria for suspected LPLN metastasis include lymph nodes contour irregularity and signal intensity disparity (10). There is some evidence to support that lymph node size greater than 1cm in short axis in pre-treatment imaging is a better predictive of LPLN metastasis more than morphological features (11,12).

There are evolving imaging modalities to improve the accuracy of predicting suspicious LPLN on staging scans which include magnetic resonance diffusion-weighted imaging (DWI), lymph node-specific contrast agents and positron emission tomography computed tomography (PET-CT) (9). DWI could be a reliable predictor of yN0 status following nCRT with positive predictive value of 24% and the negative predictive value of 100% (13). MRI with a lymph node-specific contrast agent has shown high negative predictive value for of LPLN metastasis (14). PET CT can predict the presence of LPLN metastasis with increased accuracy and therefore it could be used to select patients that might benefit from LPLND (15).

The exact role of LPLND in the management of locally advanced low rectal cancer has to be defined. Should we offer routine 'prophylactic' LPLND in all patients with locally advanced disease (4) or only use selective approach to treat patients with suspicious LPLN on preoperative imaging (5). Also, it is not clear if patients should be offered LPLND based on the findings on the initial staging scans

regardless the findings on restaging imaging (5) or only for patients who have persistent suspicious LPLN on restaging scans following nCRT (7). There is some evidence to suggest that involved LPLN in preoperative MRI increases local recurrence rates despite clinical or pathological response seen on re-staging scans after nCRT (16). However, there is also contradicting data to suggest that disease-free survival is not different between those who were suspected to have LPLN metastasis and those who were not following standard TME surgery if the patients had nCRT (7). Therefore some believe that LPLN metastasis is not an independent risk factor in low rectal cancer but it is rather a reflection of an adverse feature of the disease.

The traditional open approach for LPLND seems to declining with growing number of publications using minimally invasive approach for LPLND including laparoscopic (17-19), robotic (20,21) and transanal robotic (22) with increasing emphasis on nerve preserving surgery (23). However, it is clear from the available literature that experience in the Western world with LPLND is still limited (24).

It is likely that the next decade will witness a better agreement on the prognostic significance of LPLN, imaging criteria on what should be considered as suspicious LPLN, whether LPLND should be offered routinely or selectively, better delineation on the interface between LPLND and nCRT as well as the optimal operative approach for the procedure.

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