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Total mesopancreas excision is the better staging tool of the mesopancreas in pancreatic head carcinoma

Peparini N. Mesopancreas staging in pancreatic head carcinoma

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Abstract

Preoperative imaging staging based on tumor, node, metastasis classification cannot be effective to avoid R1 resection because only further improvements in imaging technologies will allow the precise assessment of perineural and lymphatic invasion and the occurrence of microscopic tumour deposits in the mesopancreas. However, waiting for further improvements in imaging technologies, total mesopancreas excision remains the only tool able to precisely assess mesopancreatic resection margin status, maximize the guarantee of radicality in cases of negative (R0) mesopancreatic resection margins, and stage the mesopancreas.

Key Words: Pancreatic head carcinoma; Mesopancreas; Total mesopancreas excision; Staging; Preoperative imaging; Surgery

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Core Tip: To date, among all therapeutic tools, total mesopancreas excision remains the only tool able to precisely assess mesopancreatic resection margin status, maximize the

guarantee of radicality in cases of negative (R0) mesopancreatic resection margins, and stage the mesopancreas.

TO THE EDITOR

We read with great interest the article by Feng *et al*[1]. The authors note that most R1 resections are related to the insufficient removal of retroperitoneal tissue of the anatomical space recognized as the mesopancreas, and total mesopancreas excision (TMpE) has been proposed to increase the R0 rate of pancreaticoduodenectomies. Consequently, precise preoperative imaging evaluation of pancreatic head carcinoma should include all the nerves, lymphatic vessels, and fatty tissue in the mesopancreas (particularly the structures around the celiac artery and superior mesenteric artery) instead of only traditional masses, vascular invasion, lymph nodes and distant metastasis evaluation. The authors noted that unfortunately, further research is needed to identify the mesopancreas by imaging. To date, neither computed tomography nor magnetic resonance imaging has allowed preoperative evaluation of extrapancreatic perineural invasion, which is important for effective TMpE.

It has been reported that mesopancreatic fat stranding on preoperative multidetector CT scans predicts mesopancreatic cancerous infiltration, which is a significant indicator for incomplete surgical resection and worse overall survival[2].

We think that the following issues should be considered: Imaging evaluation of the mesopancreas facilitates the avoidance of R2 resection risk but not R1 resection risk; Tumour deposits (TDs), i.e., macroscopic or microscopic nests or nodules found in the lymph drainage area of a primary carcinoma without evidence of residual lymph node in the nodule, may occur in pancreatic cancer as well as other digestive carcinomas; TMpE has been conceived to obviate the impossibility of preoperative detection of perineural and lymphatic invasion as well as microscopic TDs in the mesopancreas and to minimize the likelihood of R1 resection or else of "not radical" R0 resection (*i.e.*, unidentified residual TDs after resection with negative margins)[3].

Preoperative imaging staging based on tumor, node, metastasis (TNM) classification cannot be effective to avoid R1 resection because only further improvements in imaging technologies will allow the precise assessment of perineural and lymphatic invasion and the occurrence of microscopic TDs in the mesopancreas. To date, among all

therapeutic tools, TMpE remains the only tool able to precisely assess mesopancreatic resection margin status, maximize the guarantee of radicality in cases of negative (R0) mesopancreatic resection margins, and stage the mesopancreas.

Moreover, the occurrence of TDs, the pathologic and prognostic significance of which remains to be determined (T, discontinuous primitive tumour; N, regional nodal metastasis; M, distant metastasis or something else?), underscores the need to overcome the preoperative staging and consequent treatment strategies based on pathological categorization of T, N, and M per the TNM classification system. In the staging and treatment of pancreatic head carcinoma, other pathological pathways and factors beyond T, N, and M that are involved in the modulation of tumour spread should be taken into account.

Precise preoperative imaging evaluation should include all the anatomical structures within the mesopancreas. However, waiting for further improvements in imaging technologies, TMpE remains the better staging tool of the mesopancreas.

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