Borderline Resectable Pancreatic Cancer

Jason B. Fleming
MD Anderson Cancer Center, Houston, TX

Despite the introduction of the concept of borderline resectable disease by the National Comprehensive Cancer Network as early as 2003, only several single institution series—all retrospective studies—are available to provide knowledge on the topic. No data from prospective trials have been generated to guide the evaluation or management of patients with this stage of disease. Given this context, this presentation will use available data and our institutional experience at MDACC to address the following questions:

What is the Definition of Borderline Resectable PDAC?
The success of any future trial relies on the adoption of a single objective definition of borderline resectable PDAC.
At present, two definitions have been proposed. We developed the MDACC definition in an attempt to identify patients with primary tumor anatomy, cancer biology, or patient physiology which places them at the limits of compatibility with favorable results after neoadjuvant therapy and surgical resection. This definition was introduced within the context of a strong institutional preference for the administration of neoadjuvant therapy to all patients with localized PDAC and an opinion that tumor involvement of the superior mesenteric vein and/or portal vein (SMV-PV) (in the absence of arterial involvement) is consistent with potentially resectable anatomy. The criteria for borderline resectable disease were therefore meant neither to justify the role of neoadjuvant therapy among a subset of patients with localized cancers, nor to estimate their potential need for venous resection and reconstruction. The MDACC anatomic definition differs from that recently proposed by the American Hepato-Pancreato-Biliary Association (AHPBA), Society of Surgical Oncology (SSO), and Society for Surgery of the Alimentary Tract (SSAT), particularly with regards to the classification of tumors with minimal vein involvement. Indeed, the AHPBA/SSO/SSAT definition classifies primary cancers with any degree of vein involvement—from slight abutment to outright venous occlusion—as borderline resectable. Moreover, in contrast to our group, the AHPBA/SSO/SSAT uses the borderline resectable definition as the basis for recommendations regarding treatment sequencing: surgery is recommended as the standard initial approach for resectable patients, and neoadjuvant therapy (and a heightened awareness of the potential need for SMV-PV resection) is recommended for borderline resectable patients. Whatever definition is ultimately adopted, it must be objective, clear, and—most importantly—consistently applied.

What Treatment Algorithms Can be Used and How?
It is generally accepted that the neoadjuvant treatment sequencing is a rational approach for treating borderline resectable PDAC. However, it is unknown whether preoperative chemotherapy, chemoradiation, or a combination is best; and the role of additional postoperative therapy, if any, is entirely undefined. At MDACC, the potential oncologic and selective advantages of preoperative therapy are leveraged over a prolonged period of time; in general, we administer systemic chemotherapy first, then consolidating chemoradiation, and finally surgery.
Session 2: Pancreatic Cancer

Only patients who complete a 4- to 6-month course of nonoperative therapy without disease progression ultimately undergo pancreaticoduodenectomy. Although this strategy has a sound rationale, its benefit over other sequencing patterns (e.g., neoadjuvant chemoradiation followed by chemotherapy or chemotherapy alone) has not been demonstrated. At present, existing data support the study of preoperative chemoradiation-containing regimens in prospective clinical trials.

What Criteria Should be Met to Proceed to Laparotomy?
Uniform criteria for proceeding to resection upon completion of neoadjuvant therapy must be established. At MDACC and other institutions, resection is offered to all patients with borderline resectable PDAC who have no evidence of cancer progression (either local or distant) on presurgical restaging studies. We do not require radiographically evident downstaging to bring patients to the operating room. Such a policy may not be observed at all centers, but its use is rational based on our high rate of R0 resection among patients with borderline resectable PDAC, particularly when viewed in light of the low rate of radiographic downstaging that is clinically observed.

What Surgical Standards are Needed?
Although the use of neoadjuvant therapy has been emphasized, the critical importance of a well-performed operation for patients with borderline resectable PDAC must not be overlooked. Given the frequent need for segmental resection and reconstruction of the SMV, PV, or hepatic artery to achieve negative resection margins among these patients, their care must be provided by surgeons who are comfortable with techniques of vascular resection and reconstruction at pancreaticoduodenectomy. Moreover, particularly in this group in whom the primary cancer may abut the superior mesenteric artery, meticulous dissection along the periadventitial plane of the vessel at pancreaticoduodenectomy is absolutely essential to maximize the potential for a margin-negative resection. The importance of this technical detail must be reemphasized, given recent evidence that use of a stapling device to remove the surgical specimen may be routine in many centers. Accurate reporting of such details, preferably using a standard format of documentation, is also critical.

References
Session 2: Pancreatic Cancer


