Symposium II

Surgical Management of Pancreatic Cystic Neoplasms

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There are certain basic principles for the surgical treatment of cystic neoplasms.

While not all tumors will be amenable to resection, surgery can be curative for many. Growth by displacement, which is usually the case, instead of invasion into adjacent structures, favors resection.

A distal pancreatectomy is the traditional treatment for body and tail lesions. A Whipple procedure (pancreaticoduodenectomy) is usually needed for head lesions. Total pancreatectomy can be considered for IMPNs with diffuse dysplasia. Central pancreatectomy can be performed for body lesions, particularly at the neck, with pancreaticoenteric reconstruction. A variety of limited pancreatectomies have been proposed, but there are no long-term data verifying the efficacy of these procedures.

In past years, it was recommended that all cystic neoplasms be resected due to the difficulty in predicting which lesions were malignant. At present, given the large number of tumors that are incidental findings and studies that have demonstrated that many tumors have a very low malignant potential, other treatment strategies need to be considered at times.

Serous Neoplasms

Surgical treatment is not indicated for serous neoplasms unless the patient has obstructive symptoms or symptoms from local compression of surrounding structures. Acceptable growth of serous neoplasms is approximately 0.6 cm per year. Larger tumors that are more than 4 cm in size may increase as much as 2 cm per year and start to cause local symptoms. Therefore, in excellent surgical candidates without significant comorbidities, surgical resection is a reasonable option for tumors that are 4 cm or greater.

Mucinous Neoplasms

All MCNs must be considered premalignant and can undergo malignant transformation at any time. Their progression toward malignancy is thought to mirror that of pancreatic intraepithelial neoplasia, albeit at a much more indolent rate. Therefore, the general recommendation is to resect all mucinous tumors, given the patient is an acceptable surgical risk. Because more than 90% of mucinous neoplasms are found in the body or tail of the pancreas, a distal pancreatectomy is the usual treatment.

Intraductal Papillary Mucinous Neoplasms

In 2006, the International Association of Pancreatology published revised guidelines for the management of IPMNs in which they listed the following indications for surgery: (1) main pancreatic duct type IPMN (includes mixed type tumors); (2) branch duct IPMNs with cyst diameters of over 30 mm or cyst diameter of 10 to 30 mm with a mural nodule; (3) IPMNs with a dilated main pancreatic duct >6 mm and/or (4) cytology-positive.

Because the main duct variant of IPMNs has a much greater tendency to become malignant, a more aggressive surgical approach is indicated. In general, all main duct IPMNs should be resected. A pancreaticoduodenectomy or distal pancreatectomy is the proper treatment based on tumor location.

Frozen Sections

Intraoperative frozen sections are not usually necessary with MCNs, as they usually have discernible borders and microscopic extension is not likely.

Frozen sections can be used to rule out invasive cancer if the margins are firm and abnormal appearing. On the other hand, frozen sections are recommended during the resection of IPMNs. In the case of IPMNs, microscopic extension beyond visible disease is common. In addition, IPMNs are frequently multiple and can be spread throughout pancreas in a non-contiguous fashion. Tanaka and colleagues11 published these guidelines for treatment of positive margins on frozen section: (1) IPM adenoma—no further resection due to minimal risk of progression; (2) IPMN with borderline atypia—further resection if feasible; and (3) IPMN with carcinoma in situ or invasive cancer—complete resection whenever feasible.

Limited Resection

About 90% of cystic lesions are non-invasive. Limited pancreatectomy is possible for premalignant lesions, in situ carcinomas and symptomatic benign lesions, as well as for cysts located in the pancreatic head with no other signs of malignancy

Laparoscopic Pancreatectomy

Distal (left) pancreatectomy is the most commonly performed laparoscopic pancreatic resection. When anatomically and biologically possible, splenic preservation during left pancreatectomy has been shown to be associated with reduced postoperative overall and infectious complications.

References

1. Surg Clin N Am 90 (2010) 411-46.
2. Scandinavian Journal of Gastroenterology, 2011; Early Online, 1–16.