C-52

A Minimally Invasive Approach for the Surgical Management of Neuroendocrine Tumors of the Ileum (i-NETs)

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BACKGROUND: Neuroendocrine tumors of the ileum (i-NETs) are the most common small bowel malignancy. They have unique features that include small size, multifocality, and mesenteric adenopathy/fibrosis that make diagnosis and treatment challenging. The role of minimally invasive surgery (MIS) is poorly defined for i-NETs. We previously presented how MIS can successfully accomplish the goals of i-NET surgery, and we now present an update with an expanded cohort of patients.

METHODS: We performed a retrospective review of our SI-NET database at a tertiary-care medical center (2005-2018). Our study included 78 patients with i-NETs who underwent their initial resection at our institution. Surgeries were performed with an open or minimally invasive approach. A hand-assisted device was used during MIS to permit palpation of the small intestine.

RESULTS: Of the 78 study patients, 36 (46.2%) patients had open surgery and 42 (53.8%) patients had MIS. The average number of lymph nodes retrieved per patient was 12.8 with open surgery and 16.8 with MIS. The majority of patients (52, 66.7%) had primary tumors of unknown origin, and all unknown primary tumors were identified by either open surgery (n = 26) or MIS (n= 26). Approximately half of patients (39) had multifocal primary tumors that were found with open surgery (n=20) or MIS (n=19). 15 patients (34.9%) who

underwent MIS required conversion to open to safely resect the mesenteric adenopathy/fibrosis.

CONCLUSION: The goals of i-NET surgery can be successfully achieved with MIS and include an oncologic resection of all primary tumor(s) and mesenteric adenopathy/fibrosis and thorough staging. Use of a hand-assisted device permits identification of unknown and multifocal primary tumors, and conversion to open surgery can be safely performed when necessary. Our study supports MIS for the surgical management of i-NETs, and it suggests that MIS should be considered as the standard approach for many patients with i-NETs.