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Identification of Unknown Primary Tumors in Patients with Neuroendocrine Liver Metastases

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Background: For patients with neuroendocrine tumor (NET) liver metastases, resection of the primary tumor may prevent local complications (obstruction, ischemia, bleeding) and improve survival. Despite extensive evaluation, the primary tumor location may remain unknown.

Methods: We performed a retrospective cohort analysis of a pathology database at a tertiary academic medical center from January 1, 1993 to August 15, 2008 and identified 123 patients with NET liver metastases. We sought to determine the utility of pre-operative evaluation for detecting the primary tumor in patients with well-differentiated NET liver metastases and whether laparoscopic or open exploration is effective for identifying an occult primary tumor.

Results: Computed tomography (34.6%) and OctreoScan® (26.2%) were not sensitive in locating primary NETs in the gastrointestinal tract. Colonoscopy was sensitive in detecting colonic NETs (86.7%). Seventeen patients (13.8%) had occult primary tumors, and 15 underwent surgical exploration. The primary tumor was located in 13 cases (86.7%) in the small intestine and resected in 11. Primary tumors in the small intestine found during surgical exploration were significantly smaller than those identified pre-operatively (1.38 vs 1.91 cm, $P = 0.03$) and were often multifocal (54.2%).

Conclusions: For patients with NET liver metastases and unknown primary, surgical exploration effectively identifies and resects occult primary tumors that are often located in the small intestine. Primary tumors are usually small and multifocal, so careful palpation of the small intestine is essential. Before patients are considered for surgery, a multidisciplinary team assessment and evaluation consisting of computed tomography, OctreoScan, and upper/lower endoscopy should be done.