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Large Cell Neuroendocrine Carcinoma (LCNEC) of the Colon Arising from a Tubulovillous Adenoma: A Case Report and Literature Review*

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Abstract

A 66-year-old man was found to have a 4 cm mass in the distal transverse colon that was biopsied on a diagnostic colonoscopy performed for occult anemia. Pathology showed incomplete removal of a tubulovillous adenoma with high-grade dysplasia. The patient underwent surgical resection, with final pathology demonstrating two 5 mm foci of large cell neuroendocrine carcinoma (LCNEC) within a background of tubulovillous adenoma, and 1 of 8 positive lymph nodes. Poorly-differentiated neuroendocrine tumors (NET) are termed neuroendocrine carcinoma (NEC), and are extremely rare. Colorectal LCNEC have been identified in synchronicity or association with adenomas and adenocarcinomas (AC). There are several theories that attempt to explain the pathogenesis of colorectal tumors with concurrent neuroendocrine and adenomatous pathology: (1) mixed tumors are a neuro-endocrine phenotype of dedifferentiated adenocarcinoma; (2) these tumors originate from a common multipotent stem cell then simultaneously differentiate into glandular or neuro-endocrine lineages; or, (3) a common genetic alteration predisposes an individual to the development of both tumor types. More work is needed to delineate the true pathogenesis of colorectal tumors with concurrent neuroendocrine and adenomatous pathology. There are no agreed-upon management guidelines for colorectal NEC, although given its highly aggressive nature, standard oncologic resection and adjuvant platinum-based chemotherapy are generally recommended for patients with resectable disease.

Key words: large cell neuroendocrine carcinoma, neuroendocrine tumor, colon cancer, colon adenoma