Case Report

Rectal adenocarcinoma with extensive choriocarcinomatous differentiation: Report of a rare occurrence

Kavita Mardi, Saurabh Gupta[1], Neelam Gupta, Vidisha Mahajan

Department of Pathology, Indira Gandhi Medical College, Shimla, Himachal Pradesh, India, [1]Pgy3, Internal Medicine Resident, John H Stroger Hospital of Cook County, Chicago, IL, United States

ABSTRACT

We report a rare case of choriocarcinomatous differentiation of tumor cells in the rectal adenocarcinoma of a 54-year-old female who presented with pain abdomen and passage of bloody stools. CT scan was suggestive of a malignant tumor in the rectum. Histologic examination of the tumor revealed a minor component of moderately differentiated adenocarcinoma that showed extensive trophoblastic differentiation. Positive immunostaining for beta-hCG of tumor cells in these areas confirmed the diagnosis. Since such tumors behave aggressively and confer bad prognosis, they constitute a distinct clinical entity of a gastrointestinal tumor.

Key words: Adenocarcinoma, choriocarcinomatous differentiation, colon, rectum, trophoblastic differentiation

INTRODUCTION

Trophoblastic differentiation of tumor cells in the rectal adenocarcinoma is an extremely rare phenomenon.[1,2] The histological features with immunohistochemical identification of beta-hCG expression confirms the diagnosis.[1] It is important to recognize this phenomenon, as it is associated with aggressive behavior and bad prognosis for the patient. We report one such rare case of adenocarcinoma with extensive trophoblastic differentiation in the rectum of a 54-year-old female.

CASE REPORT

A 54-year-old female patient presented with pain in the abdomen with passage of blood and mucous in the stools since eight months. She also complained of loss of weight and appetite since six months. On CT scan, there was a circumferential asymmetric thickening of the wall of rectum with maximum thickness of 17 mm with narrowing of the lumen measuring 10 cm in craniocaudal extension. There were multiple homogeneous enhancing pelvic lymph nodes. Radiological diagnosis of carcinoma rectum with pelvic lymphadenopathy was given. Per-operatively, there was a hard nodular growth present at the junction of the rectum and sigmoid colon measuring about (7 × 5) cm. On gross examination, an ulceroinfiltrative growth measuring 7 × 2 cms was identified 10 cm away from anal. Cut section of the growth was yellowish and was involving up to the serosa. On microscopic examination, sections from growth showed a biphasic tumor. Moderately differentiated adenocarcinoma constituted the minor component of the tumor. Pre-dominant component of the tumor comprised of highly pleomorphic, bizarre tumor giant cells having single to multiple vesicular nuclei with conspicuous eosinophilic nucleoli. The cytoplasm was abundant, vacuolated, and deeply eosinophilic [Figure 1]. The tumor cells showed prominent emperipolisis with prominent eosinophilic globules. There were extensive areas of hemorrhage, necrosis, foci of dystrophic calcification. The tumor showed extension up to the serosa and perineural invasion. Diagnosis of moderately differentiated adenocarcinoma with choriocarcinomatous differentiation was given. Immunohistochemically, the

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Address for correspondence: Dr. Kavita Mardi, 12-A, Type V Quarters, IAS Colony, Kasumpti, Shimla, Himachal Pradesh, India.
E-mail: kavitamardi@yahoo.co.in

tumor cells showing trophoblastic differentiation were positive for Beta-hCG [Figure 2]. Serum hCG checked postoperatively was as high as 4,568 IU/L, but the serum carcino-embryonic antigen (CEA) was normal.

DISCUSSION

Trophoblastic differentiation can occur focally in colorectal adenocarcinomas, as it does in stomach and gall bladder.[3] Non-gestational choriocarcinoma occurs in the lung, mediastinum, kidney, stomach, and small intestine, but rarely appears in the large intestine.[4] They are characterized by a biphasic tumor growth with separated areas of adenocarcinomatous and choriocarcinomatous differentiation.[5]

Such tumors are more common in the age range of 28 to 74 years, with a median age of 45 years. There is female predominance. Most of the lesions have been reported in the rectosigmoid area. The tumors range in size from 2 cm to 10 cm. Histologically, most are combinations of choriocarcinoma and adenocarcinoma. All of these cases reported were rapidly fatal, with a median survival of 4.5 months from the development of symptoms. All of the patients died within 12 months.

Verbeek, *et al*.[5] used comparative genomic hybridization (CGH) and fluorescence *in situ* hybridization to elucidate the genetic relationship of adenocarcinoma and choriocarcinoma in this neoplasm. They found genetic changes characteristic for colorectal adenocarcinomas, a loss of chromosomal regions 8p21-pter as well as 18q21-pter, and a gain of 5p and 20q, in both tumor parts. This provides evidence for the common origin of both components. A differential pattern of additional genetic changes suggests a clonal evolution from a common ancestor cell.

Human chorionic gonadotropin (hCG) has been detected in ovarian, stomach, and colon adenocarcinomas, pancreatic adenocarcinomas as well as in squamous cell carcinoma of the esophagus.[6] There are reports of adenocarcinoma of the colon, which showed choriocarcinomatous differentiation in the metastatic deposits.[7] This and other similar cases of mixed tumors suggest that unexpected trophoblastic differentiation may result from aberrant differentiation of locally proliferating cells, rather than originating in ectopic germ cells or in foci of embryonic totipotent cells.

Choriocarcinomatous differentiation of adenocarcinoma of the colon or of the rectum is very rare and is aggressive. Although radical resection and chemotherapy are performed, the clinical outcome is very disappointing.[2]

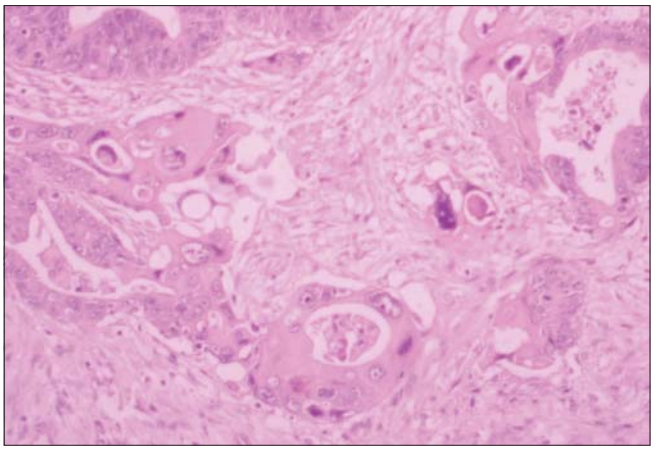

Figure 1: Histologically, most of the tumor is composed of choriocarcinoma along with a moderately differentiated adenocarcinoma (H and E, ×200)

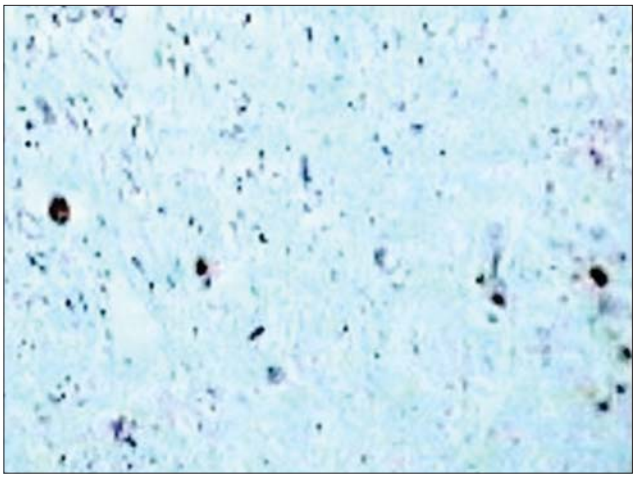

Figure 2: Human chorionic gonadotropin (hCG) is expressed in choriocarcinomatous component (Immunostaining for anti-β-hCG antibody, ×400)

In conclusion, even though rare, these tumors should be considered in the differential diagnosis of a colorectal carcinoma. Despite the rarity of the condition and the obscurity of the histogenesis, reports of similar cases and the occurrence of the tumors in the digestive tract suggest that the condition constitutes a clinical entity of a colonic tumor.

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