February 2008

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CASE REPORT

Metachronous Primary Cancers of Colon and Stomach

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ABSTRACT

Synchronous or metachronous occurrence of esophageal, gastric and colonic cancers is a very rare occurrence, although there are several case reports in literature. A case of a 41 years old man with metachronous cancers of colon and stomach is reported.

Key words: *Metachronous. Synchronous. Gastric carcinoma. Colon carcinoma. Adenocarcinoma.*

INTRODUCTION

Synchronous (concomitant) and metachronous (occurring one after other) cancers in the gastrointestinal (GI) tract are an extremely rare occurrence. There are no case series and only few case reports have been published in literature describing such cases.[1,2] The case of a 41 years old patient with metachronous occurrence of right colon and gastric carcinomas is reported. No such case has been reported earlier in local literature.

CASE REPORT

This patient, was an Afghan, presented for the first time in the gastroenterology clinic at AKU in September, 2002 with complaints of suspected peptic ulcer disease. He was 36 years of age at that time. He underwent upper GI endoscopy and biopsies were taken at the time from gastric antrum and duodenum, both of which, on histopathology, showed mild non-specific inflammation. *Helicobacter* or *giardia* were not seen. He again presented in the GI clinic at AKU in late November, 2002 with complaints of lower abdominal pain and mass on the right side of abdomen. Colonoscopy showed an ulcerated area in ascending colon. Biopsies were taken, histopathology showed an infiltrating adenocarcinoma, with tumour cells forming an acinar pattern. He underwent resection in December 2002. The right hemicolectomy specimen, on opening was identified as a hard grey lesion in the ascending colon measuring 4 x 4 x 3 cms, representative sections were submitted. The lesion was reported as a moderately differentiated adenocarcinoma forming a predominantly glandular pattern and infiltrating full thickness of the bowel wall into the serosal fat. Both peripheral excision margins were free. Thirty-seven lymph nodes were recovered, all of which were tumour-free. Pathological staging done on the resection specimen was T3 NO MX. Metastatic workup was negative.

The patient was fine for several years, however, in April, 2007, he presented again at the gastroenterology clinic, AKU, with complaints of progressive dysphagia. On examination, tenderness and swelling were noted in the epigastrium and left hypochondrium. Barium swallow examination and CT scan of abdomen were performed and were unremarkable. Upper GI endoscopy was then performed and showed a mass in the fundus of the stomach, which was extending to the gastroesophageal junction. Lower esophageal mucosa appeared edematous and friable while gastric antrum showed hyperemia. Biopsies were taken from the gastric antrum, fundal mass and the gastroesophageal junction. The biopsy from gastric antrum on histopathology showed moderate active *Helicobacter* associated antral gastritis with foci of intestinal metaplasia. Biopsies from both fundal mass and gastroesophageal junction showed on histopathology a well to moderately differentiated infiltrating adenocarcinoma composed of acini lined by tumour cells showing nuclear pleomorphism and hyperchromasia. On special stains for mucin (PAS AB $\pm$), tumour cells showed positivity for acid mucin. Immunohistochemistry showed positivity for cytokeratin 7 while cytokeratin 20 was negative (Figure 1).

The slides of the previous operation (colonic carcinoma diagnosed in 2002) were then retrieved and reviewed to determine whether the present positive tumour represented a second primary or a re-awakened metastases from the previous colonic adenocarcinoma. Immunohistochemistry was performed on the colon carcinoma using cytokeratins 7 and 20. The tumour cells of the colonic carcinoma showed positivity for CK20, while they were negative for CK7 (Figure 2).

The patient underwent resection for the tumour situated at the gastroesophageal junction in early May. The

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Received June 01, 2007; accepted January 12, 2008.

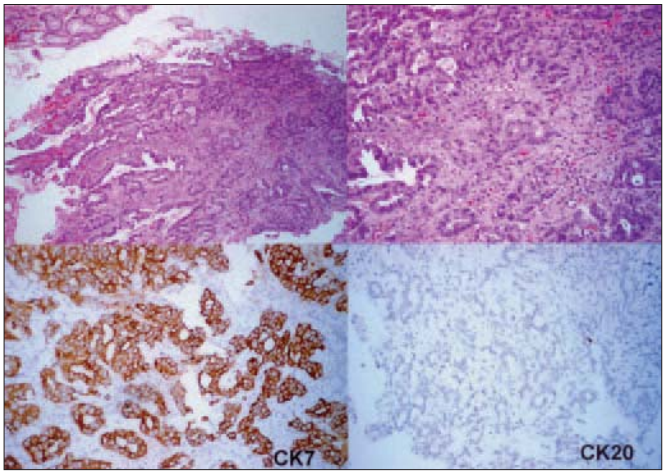

Figure 1: Micrographs of gastric adenocarcinoma (H and E x 10), and immunohistochemical stains (CK7 Positive and CK20 Negative).

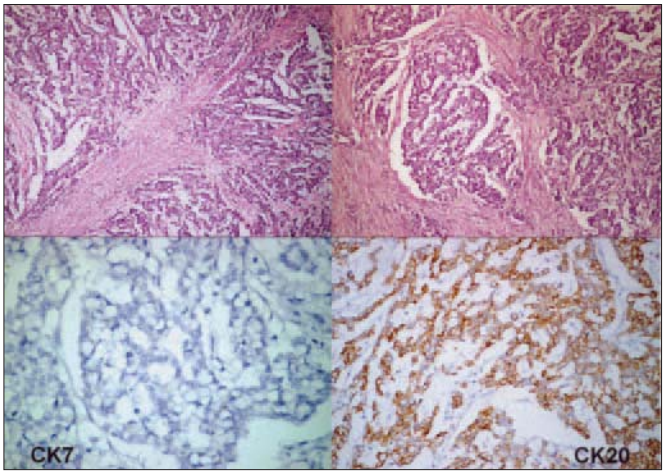

Figure 2: Micrographs of colonic adenocarcinoma (H and E x 10) and immunohistochemical stains (CK7 Negative and CK20 Positive).

resected specimen was composed of distal esophagus, cardia and fundus of stomach. Together the entire specimen measured 13 x 8 cms in dimension. Proximal esophageal and distal gastric excision margins were sent as separate doughnuts. On grossing the main specimen, a lesion was identified involving the gastroesophageal junction and the gastric fundus. It measured 4.5 x 4 x 1.4 cms, representative sections were taken from the lesion while the proximal and distal excision margins were submitted entirely.

Microscopic examination showed a moderately differentiated infiltrating adenocarcinoma infiltrating through the muscularis propria of the stomach into the subserosal fat and reaching the inked outer margin of excision. The tumor was also seen to infiltrate laterally into the muscle wall of the distal esophagus. However, overlying stratified squamous epithelium of the esophagus was free. Vascular invasion was seen. The proximal esophageal and distal gastric resection margins were free. Three out of 14 recovered lymph nodes showed metastatic tumour deposits. Pathologic TNM stage of the tumour was PT3N1MX. Metastatic workup was done, which apart from positive lymph nodes was negative.

The patient recovered well following surgery and was discharged.

DISCUSSION

The synchronous or metachronous occurrence of right colonic and gastric adenocarcinoma is extremely rare. The patient was diagnosed with a gastric adenocarcinoma 4-1/2 years after he was diagnosed with right colonic adenocarcinoma.

The immunohistochemical profile of the gastric adenocarcinoma in this patient was CK7 positive, CK20 negative; while that of the colonic adenocarcinoma was CK7 negative, CK20 positive. The CK7/CK20 expression patterns of gastric carcinoma vary considerably; approximately 70% cases are CK7 positive and 20% are CK20 positive.[3] On the other hand, 95% colorectal carcinomas are CK7 negative, CK20 positive; a CK7 negative, CK20 positive profile overwhelmingly favours a large bowel primary, whereas a CK7 positive and CK20 negative profile favours a metastasis.[4]

There have been several case reports in literature describing multiple metachronous and synchronous cancers of the gastrointestinal tract. Iioka *et al.*[5] reported a case with metachronous triple cancers of the sigmoid colon, stomach and esophagus. Oncol *et al.*[4] reported a patient with metachronous gastric, colonic and thyroid cancers. Although patients with multiple cancers are not common, it is still important that the clinicians consider the possibility of second and third cancers in patients who have been treated for a primary cancer. Mukai *et al.*[2] described a patient who had several years after treatment developed metachronous triple cancers of esophagus, colonic conduit, and kidney. Tamura *et al.*[7] reported the development of synchronous triple cancers of the stomach, colon and gallbladder in a 70 years old man. Pricop *et al.*[1] reported a case of metachronous primary cancers of colon and stomach in a 69 years old woman. They also emphasized the importance of considering the possibility of development of metachronous cancers in patients who have been treated for a primary malignant tumour. Another case of synchronous transverse colon cancer and early gastric cancer was reported by Nakata *et al.*[8]

Although, there is no evidence for a hereditary cancer syndrome in this case (nor have other writers who have reported such cases), the possibility of such a syndrome cannot be totally ruled out in this case and other such cases.

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