Singapore Med J 2010; 51(10) : e176

Triple synchronous gastrointestinal malignancies: a rare occurrence

Chong V H, Idros A, Telisinghe P U

ABSTRACT

Gastrointestinal cancer is common, and is a significant cause of morbidity and mortality. The synchronous occurrence of two different malignancies is not uncommon, but that of more than two malignancies is extremely rare. Such occurrences often pose diagnostic and therapeutic challenges. We report the case of an elderly man who was previously treated for gastric cancer 13 years ago, and who was later diagnosed with synchronous triple gastrointestinal malignancies consisting of hepatocellular carcinoma, a gastric collision tumour with adenocarcinoma and a large B cell lymphoma. The patient's condition progressed rapidly, and he died four weeks after the diagnosis.

Keywords: collision tumour, gastric cancer, lymphoma, synchronous tumour

Singapore Med J 2010; 51(10): e176-e178

INTRODUCTION

Gastrointestinal (GI) malignancies are common and important causes of morbidity and mortality. It is not unusual for patients to have multiple malignancies in their lifetime, but most of these occur metachronously. The synchronous occurrence of two different malignancies has been reported, but remains rare.[1-4] Occurrences such as these pose challenges to clinicians in terms of diagnosis and subsequent management. We report a case of an elderly man who was diagnosed with synchronous triple GI malignancies that consisted of a hepatocellular carcinoma, a gastric adenocarcinoma and a lymphoma collision tumour.

CASE REPORT

An 80-year-old Chinese man was referred from the district hospital for endoscopic evaluation of weight loss and positive faecal occult blood test. His relevant past medical history included Billroth II gastrectomy for gastric adenocarcinoma performed 13 years ago, and hypertension. Prior to the latest admission, the patient had been previously admitted to the surgical service with left-sided abdominal pain and subacute bowel obstruction. Colonoscopy showed diverticulae in both the right and left colon. In addition, there was a feature that was suggestive of splenomegaly. However, this was not further investigated.

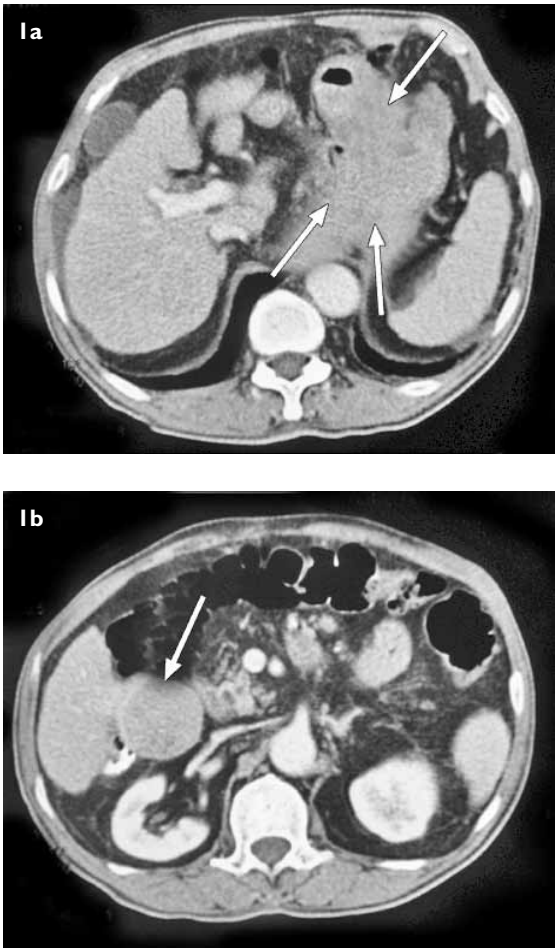

Fig. 1 Axial CT images show (a) a mass in the stomach region (arrow) and (b) mildly enhancing lesions in the liver (arrow).

The patient was admitted with a two-month history of increasing abdominal discomfort, leg oedema, loss of appetite and weight loss. He had also been passing out black stool. On examination, a midline epigastric scar from a previous surgery and slight epigastric tenderness were noted. Endoscopy revealed a small hiatus hernia with grade A oesophagitis, and a large ulcerated area with

Department of Medicine,
Raja Isteri Pengiran Anak Saleha Hospital,
Bandar Seri Begawan, BA 1710,
Brunei Darussalam

Chong VH, MRCP, FRCP, FAMS
Consultant

Idros A, MBChB
Medical Officer

Department of Pathology

Telisinghe PU, MBBS, FRCPath
Consultant

Correspondence to:
Dr Chong Vui Heng
Tel: (673) 877 8218
Fax: (673) 224 2690
Email: chongvuih@yahoo.co.uk

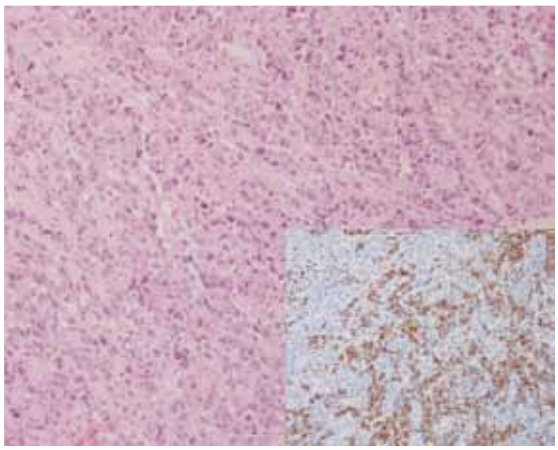

Fig. 2 Photomicrograph shows a collision tumour consisting of an admixture of poorly differentiated adenocarcinoma and large B cell lymphoma (Haematoxylin & eosin, × 20). Insert shows the uptake of epithelial membrane antigen (EMA) stain by adenocarcinoma cells and not by the lymphoma cells (EMA, ×10).

a necrotic base located in the remnant body extending to the anastomosis. The initial suspicion was that of gastric carcinoma. Laboratory investigations, however, only revealed mild anaemia, marked hypoalbuminaemia (21 gm/L) and coagulopathy (international normalised ratio of 1.4). Viral markers were positive for chronic hepatitis B infection. Staging computed tomography (CT) imaging showed an irregular mass in the stomach near the anastomosis site, as well as two enhancing lesions of the liver: a 25-mm lesion in segment 7 and a 54-mm exophytic mass on the inferior surface of the liver (Fig. 1). The CT image also showed that the liver was cirrhotic with splenomegaly. There was no evidence of lymphadenopathies.

The biopsies of the stomach mass later revealed the admixing of two types of malignant cells. One cell type was positive for leukocyte common antigen and B cells staining consistent with diffuse large B cell high-grade lymphoma. The other cell type was consistent with diffuse infiltrating adenocarcinoma. Due to the presence of two distinct cell types admixed together, the diagnosis of a gastric collision tumour was made (Fig. 2). The histology also revealed *Helicobacter pylori* and fungal hyphae.

In view of the cirrhosis and chronic hepatitis B infection, the hepatic lesions were suspected to be primary hepatocellular carcinoma, and this was later confirmed by an ultrasonography-guided biopsy of the lesions. In view of the patient's age and poor pre-morbid condition, no specific therapy for any of the malignancies was offered. The patient's condition continued to deteriorate, and he eventually died 30 days after the diagnosis.

DISCUSSION

The synchronous occurrence of multiple GI cancers, although rare, has been reported in the literature.[2,3,5-7] As the population ages, the incidence of synchronous multiple malignancies is likely to increase. The true incidence of this occurrence is possibly underestimated, as it is not uncommon for the other cancers to be misdiagnosed as metastatic diseases. Furthermore, other synchronous malignancies may be early or occult, and unless thoroughly investigated, can be easily missed. In fact, in most of the reported cases of multiple synchronous GI malignancies, the synchronous tumours were usually early lesions that were detected incidentally while undergoing staging evaluation for index malignancy.

Compared to other reported cases, our case is unique. Firstly, the combination of multiple synchronous GI malignancies included a gastric collision tumour, which to our knowledge, has not been previously reported. Collision tumours are different tumour types that are found admixed together within a tumour mass.[8] The most commonly reported gastric collision tumours include a combination of an adenocarcinoma with a gastrointestinal stromal tumour or a neuroendocrine tumour.[8-10] Secondly, the combination of adenocarcinoma and lymphoma as a collision tumour has also not been previously reported. Finally, most reported cases of multiple synchronous GI malignancies included lesions that are early tumours. In our case, all the lesions were locally advanced.

The risk factors that are associated with the occurrence of multiple malignancies are not exactly known, but are probably multiple. Genetic abnormalities are likely to be important and have previously been reported.[6] However, most reported cases to date have not shown any particular genetic aberration to account for the multiple malignancies. Environmental factors, such as smoking and chemicals, are also likely to be important. Smoking is known to increase the risk for many upper aerodigestive tract malignancies. In our case, the presence of *Helicobacter pylori* is probably an important factor. *Helicobacter pylori* infection is a known risk factor in both gastric adenocarcinoma and mucosal-associated lymphoid tissue lymphoma.[11,12] The presence of liver cirrhosis has been reported to increase the risk of breast cancer. However, it is uncertain whether it would likewise increase the risk for GI cancers.[13] Age is probably the single most important factor, as all the cases of multiple malignancies reported in the

literature have occurred in elderly patients.[1-10]

In conclusion, our case highlights a rare occurrence of triple GI malignancies in a patient with multiple risk factors. As the population ages, it is very likely that simultaneous occurrence of multiple malignancies will be encountered more frequently than before. Therefore, clinicians should be aware of this possibility when confronted with patients who have multiple lesions. As the treatment for synchronous malignancies differs from the standard treatment for individual malignancy, thorough investigation of patients with synchronous malignancies is important.

REFERENCES

1. Iqbal FR, Sani A, Gendeh BS, Aireen I. Triple primary cancers of the larynx, lung and thyroid presenting in one patient. Med J Malaysia 2008; 63:417-8.
2. Iioka Y, Tsuchida A, Okubo K, et al. Metachronous triple cancers of the sigmoid colon, stomach, and esophagus: report of a case. Surg Today 2000; 30:368-71.
3. Tamura M, Shinagawa M, Funaki Y. Synchronous triple early cancers occurring in the stomach, colon and gallbladder. Asian J Surg 2003; 26:46-9.
4. Rai RS, Deb P, Rai R, Gupta E, Panayach JS. Synchronous primary triple neoplasia (renal cell carcinoma and prostate cancer in combination with thyroid neoplasm). Report of an unusual case. Minerva Urol Nefrol 2007; 59:451-4.
5. Nishihara K, Tsuneyoshi M, Shimura H, Yasunami Y. Three synchronous carcinomas of the papilla of Vater, common bile duct and pancreas. Pathol Int 1994; 44:325-32.
6. Leong BD, Ramu P, Kumar VM, Chuah JA. Synchronous adenocarcinoma of caecum, transverse colon and jejunum. Med J Malaysia 2008; 63:148-9.
7. Sato K, Maekawa T, Yabuki K, et al. A case of triple synchronous cancers occurring in the gallbladder, common bile duct, and pancreas. J Gastroenterol 2003; 38:97-100.
8. Villias C, Gourgiotis S, Veloudis G, Sampaziotis D, Moreas H. Synchronous early gastric cancer and gastrointestinal stromal tumor in the stomach of a patient with idiopathic thrombocytopenic purpura. J Dig Dis 2008; 9:104-7.
9. Bi R, Sheng W, Wang J. Collision tumor of the stomach: gastric adenocarcinoma intermixed with gastrointestinal stromal tumor. Pathol Int 2009; 59:880-3.
10. Jang KY, Moon WS, Lee H, Kim CY, Park HS. Gastric collision tumor of large cell neuroendocrine carcinoma and adenocarcinoma - a case report. Pathol Res Pract 2010; 206:387-90.
11. Suzuki H, Iwasaki E, Hibi T. Helicobacter pylori and gastric cancer. Gastric Cancer 2009; 12:79-87.
12. Zullo A, Hassan C, Andriani A, et al. Eradication therapy for Helicobacter pylori in patients with gastric MALT lymphoma: a pooled data analysis. Am J Gastroenterol 2009; 104:1932-7.
13. Sørensen HT, Friis S, Olsen JH, et al. Risk of breast cancer in men with liver cirrhosis. Am J Gastroenterol 1998; 93:231-3.