中文題目：三重原發性癌(肝癌、大腸癌及胃癌)
英文題目：Triple primary cancer of liver, colon and stomach
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Multiple primary malignancies (MPM) is rare but increasingly encountered due to better screening, detection, and treatment of cancer. Management of MPM is challenging and the multidisciplinary approach is of paramount importance. We reported a rare case of 55-year-old male who synchronously had hepatocellular carcinoma (HCC), adenocarcinoma of sigmoid colon, and neuroendocrine tumor (NET) of stomach. Transarterial embolization (TAE) for HCC followed by laparotomy sigmoidectomy for colon cancer were sequentially performed to achieve complete remission, but the patient hesitated to receive gastrectomy for gastric NET. To date, there was neither recurrence of HCC and colon cancer nor progression of gastric NET for 12 months.

Introduction:

Multiple primary malignancies(MPMs) are two or more malignancies arising independently of one another in the same or different organs. The survival rate of cancer patients has increased, so as the occurrence of MPMs. But triple or more primary cancers are still relative rare. Here we presented a case with three primary malignant tumors involving liver, colon and stomach synchronously.

Case presentation:

A 55-year-old man, a heavy smoker, was referred to our outpatient department of gastroenterology and hepatology due to hepatitis C virus (HCV) infection and anemia with positive fecal occult blood test. The laboratory test revealed white blood cell：7080/uL (normal range：4100 - 10500)、hemoglobin：8.3g/dL (13.4 - 17.2)、MCV：65.1fl (83.4 - 98.5)、platelet count：147000/uL (160000 - 370000/)、AST：25U/L (13 - 39)、ALT：19U/L (0 - 40)、ALP：67U/L (34 - 104)、γ-GT：51U/L (8 - 60)、total bilirubin：1.9mg/dL (0.3 – 1.0)、albumin：4.0g/dL (3.5 – 5.7)、creatinine：0.79mg/dL (0.7 – 1.3)、prothrombin time：11.8sec (control：11.7)、α-fetoprotein：7.9ng/ml (< 10.0)、PIVKA-II：31.04mAU/mL (11.12 – 32.01)、CEA：29.2ng/mL (< 5.0)、CA-199：42.34U/mL (< 35)、HCV genotype 2、HCV RNA：40900 IU/mL. Upper abdomen sonography disclosed cirrhosis with splenomegaly and a 3.3cm isoechoic to hyperechoic tumor in left lobe of liver. Tri-phase liver computed tomography scan showed a 3.3cm tumor at S2/3 with hyperenhancement in arterial phase(figure-A) but no washout in porto-venous phase and incidental findings of a 1.4cm enhancing nodule at stomach and focal asymmetrical wall thickening at sigmoid colon. The magnetic resonance imaging showed a 2.8cm tumor with hyperenhancement in arterial phase but no washout in porto-venous phase and other two tumors, 1.1cm at S6, 1.3cm at S8, with hyperenhancement in arterial phase and washout in porto-venous phase. Further Sono-guided

biopsy of S2 tumor proved grade II trabecular type hepatocellular carcinoma. Colonoscopy showed a 5cm ulcerative mass at sigmoid colon(figure-B), and biopsy proved moderately differentiated adenocarcinoma. Gastroscopy showed several polypoid nodules up to 3cm at gastric body and a 2cm subepithelial tumor(figure-C) at greater curvature of middle body. The subepithelial tumor was shown to be hypoechoic and located at second layer of gastric wall by endoscopic ultrasound(figure-D), and digging biopsy proved grade 1 neuroendocrine tumor. Patient sequentially received TAE and laparotomy sigmoidectomy for HCC and sigmoid colon cancer with the diagnosis of HCC T2N0M0 stage II BCLC A and sigmoid colon cancer T3N0M0 stage IIa. However, he still hesitated to received gastrectomy for curative treatment of gastric NET, but there was fortunately no progression for 12 months so far. There was no recurrence of HCC and colon cancer as well.

Discussion:

MPMs is a rare condition can be defined as synchronously (different primary tumor diagnosed within 6 months) or metachronous (different primary tumor diagnosed 6 months afterwards). Diagnostic criteria included the following: (1) each tumor must present a definite picture of malignancy; (2) each tumor must be histologically distinct; and (3) the possibility that one is a metastasis of another must be excluded [1]. Double primary cancers can be seen in 3-5% cancer patients; triple primary cancers occur in <0.5% of patients with cancer. The more common cancers involving MPMs were genitourinary cancers and breast cancers [2,3]. Our patient had diagnosed with three different primary malignancies within 5 months. Synchronous triple primary tumors in one GI systems were extremely rare conditions.

The mechanisms for development of MPMs are not yet to be fully elucidated. Possible factors included chemo- and/or radiotherapy, genetic factor, exposure to asbestos, smoking, and alcohol consumption [4,5]. The patient described in this report had smoking history and underline disease of HCV infection. Chronic HCV infection is a major cause of HCC. HCV infection was also known to have multiple extrahepatic manifestations including malignancy. The most well-known extrahepatic malignancy related to HCV was lymphoma, mainly B-cell non-Hodgkin lymphoma [6]. GI tract solid cancers had been investigated in several studies but did not confirm significant associations with HCV infection [7,8,9].

The treatment for MPMs are varies from case to case. Treatment option should be considered with different primary cancer types, staging, response to treatment and patient's health status. Therefore, a multidisciplinary team is needed to offer a comprehensive treatment plan to each type of tumors. When managed properly, multiple primary cancers have much better survival rates than metastatic cases [4,10].

Conclusion: Our case report described a rare condition of triple primary cancers, involving liver, colon

and stomach synchronously. Different mechanisms have been implicated in developing of MPMs. As treatment plan was different from metastasis disease, each tumor should be distinct from metastasis histologically.

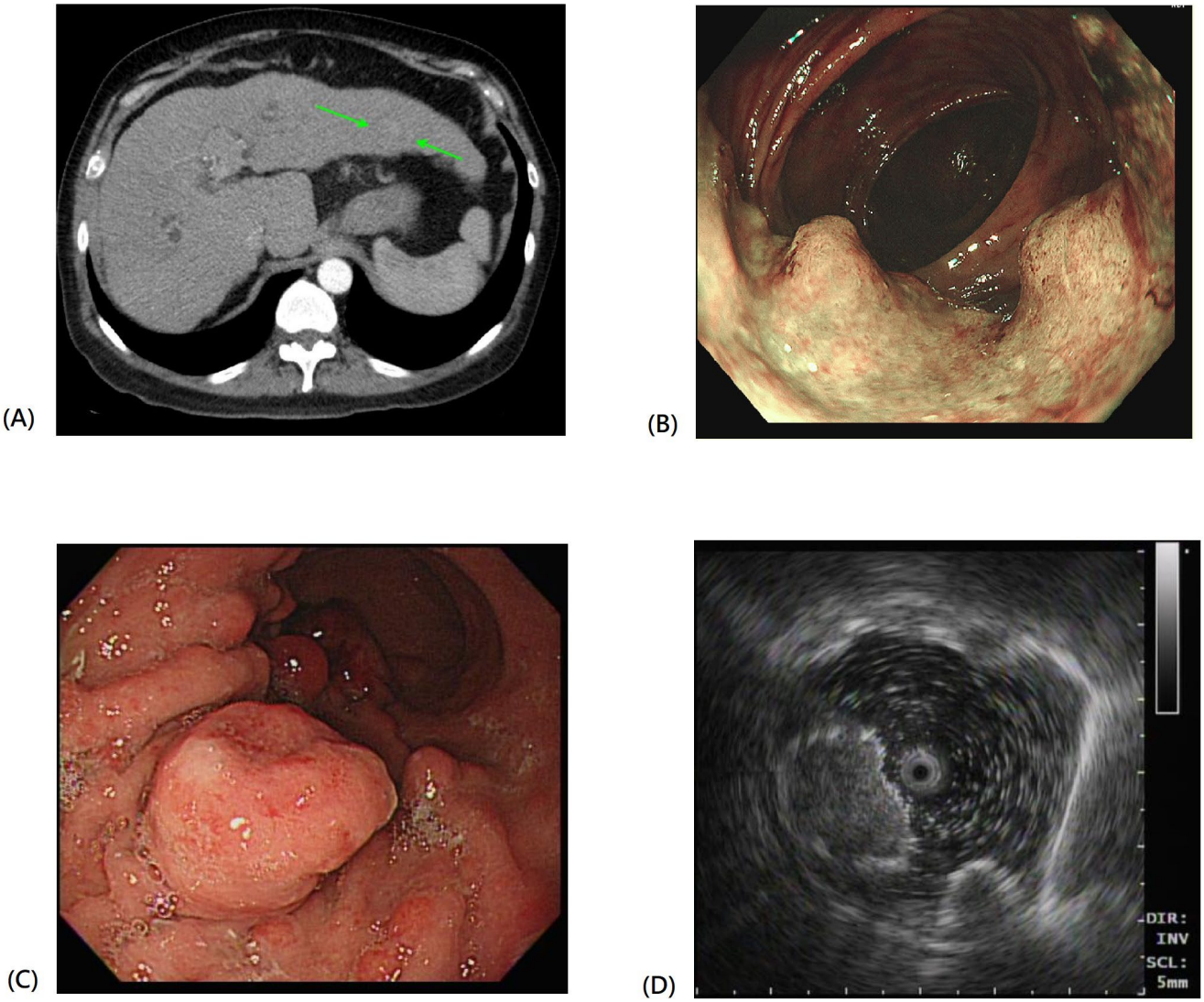

Figure: (A) A 3.5 cm hyperdense liver tumor on arterial phase of CT scan(arrow). (B) Colonoscopic finding showing 5cm ulcerative mass at sigmoid colon. (C) Gastroscopy showing a 2cm protruding mass at greater curvature side of middle body. (D) Endoscopic ultrasound showing a 2.5cm heterogenous lesion originated from second layer of gastric wall

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