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12 years, disease-free survival after major hepatectomy and sub-total gastrectomy for gastric adenocarcinoma with synchronous multiple liver metastasis

Surgery

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ABSTRACT

Long-term survivors after liver resection for gastric metastases are very rare and treatment is usually based on chemotherapy alone. The aim of this study is to describe a patient who presented with gastric adenocarcinoma with synchronous, liver metastases. More than 11 years after surgery, the patient is alive without any evidence of recurrence.

In August 2005, a 37 years old male patient presented with gastric antral adenocarcinoma and synchronous liver metastases and pre-operative staging did not reveal any extrahepatic disease.

The patient underwent two stages surgical treatment with a total gastrectomy and an extended liver resection (Left hemi-hepatectomy and right bisegmentectomy). The post-operative course was uneventful. In January 2017, follow-up assessment did not show any evidence of recurrence.

Surgery for liver metastases of gastric origin should be considered as an option to treat selected patients, including those with bilobar, synchronous disease.

KEYWORDS

BACKGROUND:

Gastric cancer (GC) is the fourth most common malignancy worldwide [1]. Despite improvements in surgical and multimodal therapy, GC still has poor prognosis. The 5-year survival depends on tumour stage, lymph nodes involvement and the presence of distant metastases. Long term survival in the presence of distant metastases is very rare [2].

Resection has been widely accepted as an effective treatment for liver metastasis arising from colorectal cancer [3-4]. By extrapolation, indications of liver resection have been extended to metastasis of non-colorectal origin including gastric, pancreatic and numerous other primaries [5-6-7]. However, the benefits of such a surgical approach for patients with metastatic gastric cancer remain unclear. Moreover, there are few long term survivors in the presence of synchronous liver metastases, mainly in Asian series [8].

We present a case of a patient who presented with synchronous multiple, metastatic liver disease from gastric adenocarcinoma. Treatment comprised near total gastrectomy and a two stage liver resection. The patient is currently alive and disease free more than 11 years after surgery.

CASE PRESENTATION:

A 37 years old, male patient presented with epigastric abdominal pain, dyspepsia, and weight loss. Previous medical history was unremarkable. Their past history revealed fatigue, anorexia, weight loss of 15 kg in three months (~15% of basal body weight).

INVESTIGATIONS:

Hematological and biochemical investigations revealed a microcytic anaemia with hemoglobin level at 10g/dl (Normal range 13-16g/dl); albumin level was 28 g/l (Normal range: 35-50 g/l). Liver function tests showed mild elevation of alkaline phosphatase and Gamma glutamyl transferase but normal transaminase and bilirubin levels. Carcinoembryonic antigen level was 41mcg/l (Normal range :< 2.5 mcg/l) whilst; Alpha-foetoprotein levels wereas 10 ng/ml (N<15 ng/ml).

Esophagogastroduodenoscopy showed a 7 x 11 cm diameter, ulcerated mass, located in the distal gastric antrum, which was biopsied. Histology revealed a well differentiated adenocarcinoma.

Computerized Tomography (CT) scan showed a circumferential parietal antropyloric lesion with multiple coeliac and mesenteric lymph nodes.

Additionally, there were three low-density, heterogeneous, liver lesions located in segments 3, 4 and 7 measuring 10, 5, and 4 cm diameter respectively (Fig 1). CT thorax and head did not show any other metastatic disease.

Open Left hemi-hepatectomy (i.e., segments 2, 3, and 4) was performed combined with a D2, total gastrectomy with Roux en Y gastro-jejunal anastomosis. Postoperative course was uneventful.

Histological exam revealed well differentiated, mucosecretant, antral adenocarcinoma. The tumor was rated T2N1M+ (i.e., subserosal with one metastatic node out of 21 harvested). Liver resection specimen showed more than 1-cm negative resection margins.

Postoperative, the patient received six cycles of IV chemotherapy. The modified FOLFIRI regimen consisted of Irinotecan 150 mg/m2 in a 90-minute intravenous infusion on day 1, leucovorin (LV) 20 mg/m2 and 5- fluorouracil (5-FU) 400 mg/m2 as a bolus followed by 600 mg/m2 as a 22-hour infusion on days 1 and 2 every 2 weeks.

After the completion of the chemotherapy, Positron emission tomography (PET) Scanning was undertaken and showed persistence of the right hepatic lesion activity but without evidence of any other disease. Therefore, Rright postero-lateral bisegmentemtomy (i.e., segments 6 and 7) with enbloc resection of the adjacent diaphragm was performed six months after primary surgery (Fig 2).

The surgery was uncomplicated and histology confirmed a 3 cm diameter, well differentiated, metastasis of gastric adenocarcinoma with uninvolved resection margins.

OUTCOME AND FOLLOW-UP:

Follow-up comprised clinical and CT assessment every 6 months the first 2 years and then yearly.

In January 2017, the patient was seen for his latest follow-up assessment. Clinical and biological evaluation was within normal range and thoraco-abdominal CT scanning showed no evidence of recurrent disease (Fig 3).

DISCUSSION:

Liver metastases of gastric origin have a very poor prognosis [9] and are often multiple and bilobar [6]. Consequently, even in cases of potentially resectable disease, many authors are reluctant to consider radical surgical as the treatment of choice [10] and patients are offered palliative chemotherapy [11]. Current evidence suggests prolonged survival amongst these patients is very rare [12-13] and to the best of our knowledge, our patient is one of the longest survivors who has received radical therapy for synchronous liver metastases from gastric cancer.

A number of factors could influence the prognosis of patients with metastatic gastric cancer including tumour depth, lymph nodes metastases, incidence of tumour emboli, histological types, tumor markers, presence of peritoneal carcinomatosis (PC) and liver metastases size[5- 9-14-15]; Of these, a solitary liver metastasies and the absence of peritoneal carcinomatosis were found to be independent favourable prognostic factors [16]. The current evidence base suggests that, the criteria of selection of patients for liver resection in such cases comprise unique lesions [17], metachronous disease [9], and absence of locally advanced primary tumour {i.e., serosal invasion, PC, venous or lymphatic spreading} [5].

Other authors emphasized the importance of the diameter of the liver lesion noting that smaller diameter improves prognosis and increases the chance of long term survival [18]. Ambiru et al reported significant better survival in patients with metachronous disease as compared to those with synchronous disease [9]. IN contrast, Cheon et al did not find survival differences among patients with synchronous or metachronous metastases [19]. Whilst, Koga et al [13] demonstrated that solitary liver metastases and the absence of serosal invasion were favourable independent prognostic factors howevere no patient with multiple liver lesions survived beyond three years. In a large review of the literature, Yasuhiro et al [20] noted that in addition to the number of liver metastases, features of the primary tumor including the presence of serosal invasion, the presence of lymphatic invasion, the clinical stage, the tumour diameter, and capsular formation were important prognostic factors.

Yoshito Kiyasu[12] presented a case of a patient who survive more than 18 years ; the patient had moderately differentiated gastric adenocarcinoma invading the serosal layer with both lymphatic and venous vessels, two infrapyloric metastatic lymph nodes associated with two segment five liver lesions. Gastrectomy was done without treating the liver lesions initially up until 2 years after the primary surgery when biologic markers increased and the liver lesions enlarged with a new apparent lesion in segment 7. Hepatectomy was done and removed subsegments 5, 6, 7. As adjuvant chemotherapy, the patient had Mitomycin C intravenously at the day of the gastrectomy and oral chemotherapy started ten days postoperatively which has been stopped after one month for intolerance and drug toxicity and No chemotherapy were given after.

In this report of long term survival, the patient had bilobar synchronous liver metastases with a metastatic periduodenal lymph node.

Further studies are needed to clarify the most relevant prognostic factors for long term survival in patients with metastatic gastric cancer.

Gastric cancer with liver metastases is usually considered unresectable and is associated with poor outcome. However, liver metastases should not necessarily be considered as an absolute contraindication for surgery and selected patients with specific criteria could benefit from radical surgery. However, having a complete resection (R0) which is the major key point of the therapeutic strategy [21-22-23] and represent an important condition for successful results.

Liver metastases from gastric cancer should not be always considered as an absolute contraindication for surgery, especially in patients with no extrahepatic disease, no serosal, lymphatic or venous infiltration,

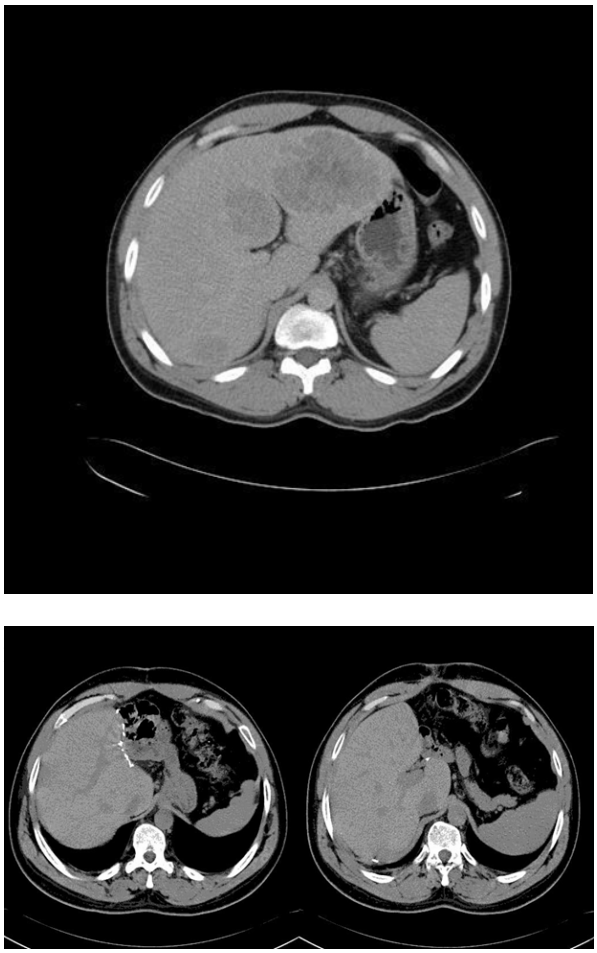

Figure 3: Images of January 2017. shows liver hypertrophy with no evidence of recurrence and the normal gastro-jejunal anastomosis.

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