Gastric cancer and cytomegalovirus association: an incidental diagnosis of common variable immunodeficiency

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Abstract: Common variable immunodeficiency (CVID) is an immunodeficiency disease with an increased risk of malignancy, including gastric adenocarcinoma. We describe a case of a 41-year-old Caucasian man admitted in our department with a 3-month complaint of epigastric pain, asthenia, and weight loss. Esophagogastroduodenoscopy (EGDS) showed a bleeding ulcerative lesion in the greater gastric curve and biopsies revealed poorly differentiated adenocarcinoma cells. A sub-total gastrectomy was performed. Histology revealed a pT1b-pN0 gastric adenocarcinoma. Postoperative course was marked by prolonged fever, radiological and EGDS controls were negative. Immunohistochemically proven cytomegalovirus gastrointestinal disease was found. At multidisciplinary board a CVID diagnosis was given. At 22 months a new adenocarcinoma was diagnosed at 3 cm of the previous anastomosis. A total gastrectomy was performed. Histology revealed an gastric adenocarcinoma classified as rpT2-pN0. At 2 years of follow up patient is alive without recurrence. To conclude our case suggest us to perform a close follow up in patient with CVID.

Keywords: Gastric cancer; common variable immunodeficiency syndrome; gastrectomy; cytomegalovirus; follow-up

Received: 29 August 2016; Accepted: 02 November 2016; Published: 17 January 2017.

doi: 10.21037/jxym.2017.01.01

View this article at: http://dx.doi.org/10.21037/jxym.2017.01.01

Introduction

Common variable immunodeficiency (CVID) is an immunodeficiency disease with an increased risk of malignancy, including gastric adenocarcinoma. (1) There are some reports of gastric cancer presenting at a young age in patients with CVIDs (2-4). Early investigation with gastroscopy in CVID patients, including in young patients is recommended, in view of the high incidence of gastric adenocarcinoma and lymphoma in these patients (2).

Since 1988 multifocal adenocarcinoma of the stomach in CVID patient was described (4).

Case presentation

Here we describe a case of a 41-year-old Caucasian man admitted in our department with a 3-month complaint of epigastric pain, asthenia, and weight loss. Past medical history was negative, and physical exam was negative. Esophagogastroduodenoscopy (EGDS) showed a bleeding ulcerative lesion in the greater gastric curve, and biopsies revealed poorly differentiated adenocarcinoma cells. Considering the histology and patient's age, we performed a sub-gastrectomy according to a macroscopical safe margin between the tumor and the future anastomosis. Macroscopically, an ulcerative lesion (3 cm) arising from the greater curve was observed. Histology revealed a gastric adenocarcinoma classified as pT1b pN0 (UICC2009). None metastatic regional lymph nodes for adenocarcinoma were observed. Postoperative course was marked by prolonged fever (<38 ℃), radiological and EGDS control were negative. The patient had no diarrhea. Immunohistochemically a cytomegalovirus gastrointestinal infection was found (*Figure 1*). We presented the patient case in our multidisciplinary team and a deficiency of serum immunoglobulin was observed, a CVID diagnosis was given. The patient was treated initially with intravenous ganciclovir and oral prophylaxis at home.

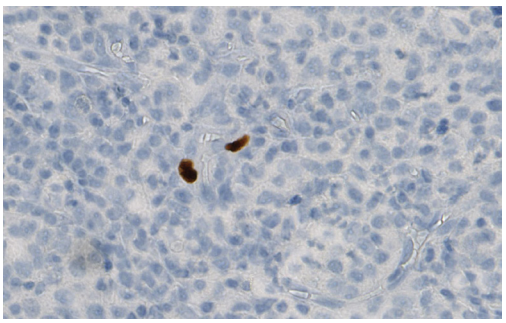

Figure 1 Immunohistochemically cytomegalovirus gastrointestinal diseases (magnification, ×40).

The patient was born in an east European country and had no history of clinical manifestation suggesting a primary immunodeficiency before our observation for a gastric cancer. At first surgery preoperative computed tomography no other aspects was found. He had no previous infections.

We decided to perform a tree monthly EGDS control. At 22 months a new adenocarcinoma was diagnosed. This tumour was at 3 cm of the previous anastomosis, a multifocal adenocarcinoma was diagnosed at posterior. A total gastrectomy was performed. Histology revealed a gastric adenocarcinoma classified as rpT2 pN0 (UICC2009). At three years of follow-up patient is alive without recurrence.

Discussion

CVID is an immunodeficiency disease characterized by B-cell deficiency, leading to hypogammaglobinemia, mainly IgG and IgA. CVID is the most common form of hypogammaglobinemia. The mean age of diagnosis is between the ages of 20 and 40 years, but approximately 20% are under the age of 20 (5). The diagnosis in our patient was latter as he never went to a physician before. Incidence of malignancies in CVID appears to have increased (6,7), incidence of stomach cancer may be increased as well, but recent comparative data appear to show a reduced incidence over prior studies (7,8). The CMV infection was in our opinion for our patient an opportunistic disease. Generally CVID diagnosis is made before a malignancy occurrence. In our case the patient was in another country and came only to a medical observation for gastric pain. Patients with CVID have an increased risk of malignancy, especially lymphoma and gastric cancers. In those patients periodic monitoring has been debated (1-2). In case of diarrhea and/or weight loss patient should have appropriate upper and/or lower endoscopy with examination for *H. pylori* or other mucosal changes (7). In our case CVID diagnosis was made in a second time after a subtotal gastrectomy in a young patient. The close follow up in these patients may suggest if a gastric tumor is observed to perform a total gastrectomy for the high risk of multifocal gastric cancer/relapse. In case of well know CVID a 6 months blood exams and 12 months EGDS should be performed.

Conclusions

Cytomegalovirus associated with a gastric cancer and a postoperative fever suggests to the surgeon or gastroenterologist a possible diagnosis of primary antibody defects, as CVID. In patient with CVID a close follow up should be done and if a gastric tumor is observed we suggest to performed a total gastrectomy.

Acknowledgments

Funding: None.

Footnote

Conflicts of Interest: All authors have completed the ICMJE uniform disclosure form (available at http://dx.doi.org/10.21037/jxym.2017.01.01). The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee(s) and with the Helsinki Declaration (as revised in 2013). Written informed consent was obtained from the patient for publication of this manuscript and any accompanying images.

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doi: 10.21037/jxym.2017.01.01
Cite this article as: Lepiane P, Levi Sandri GB, Macciomei MC, Ettorre GM. Gastric cancer and cytomegalovirus association: an incidental diagnosis of common variable immunodeficiency. J Xiangya Med 2017;2:2.