Chemotherapy-Induced Perforation of Gastric Burkitt Lymphoma; A Case Report and Review of the Literature

Shahram Bolandparvaz1, Sina Jelodar2, Mina Heidari Esfahani3, Sam Moslemi4*

1Trauma Research Center, Shahid Rajaee (Emtiaz) Hospital, Shiraz University of Medical Sciences, Shiraz, Iran
2Shiraz Medical School, Shiraz University of Medical Sciences, Shiraz, Iran
3Pathology Department, Shiraz University of Medical Sciences, Shiraz, Iran
4Colorectal Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

ABSTRACT

Burkitt lymphoma of stomach is among the most rapidly growing gastric cancers associated with several gastrointestinal symptoms including hematemesis, anorexia, vomiting and etc. Gastric perforation in patients with Burkitt lymphoma of stomach is a very rare condition especially after chemotherapy. We herein present a 21-year old man who was known case of gastric Burkitt lymphoma who had undergone chemotherapy and presented with acute onset gastric pain and tenderness. He was diagnosed to suffer from perforated gastric lymphoma for which laparotomy and total gastrectomy was performed. Treatment was continued by chemotherapy. Closed observation is thus recommended for those patients with gastric Burkitt lymphoma undergoing chemotherapy.

Keywords: Burkitt lymphoma; Gastric cancer; Chemotherapy; Gastric perforation; Gastrectomy.

Introduction

Burkitt lymphoma is a non-Hodgkin lymphoma with B-cells origin being the most rapidly growing tumor in mankind; it responds dramatically to chemotherapy [1]. According to the etiology and pathogenesis, Burkitt lymphoma is classified as endemic, sporadic and immunodeficiency related. The prevalence of the disease is 25 times higher in endemic areas compared to sporadic areas, making it the leading cancer of malaria endemic areas in children below 18 years [2-5]. Male gender demonstrates the higher prevalence when compared female, with a peak incidence at 6 years old in endemic areas and 3 and 12 years in sporadic cases during childhood [6,7]. During adulthood, it is an uncommon disease with a 59% incidence above 40 years of age [8]. Sporadic variant is seen mainly in abdominal cavity as an ileocecal disease, and presents mostly with gastrointestinal symptoms such as distension, nausea, vomiting and gastrointestinal bleeding. The other most common spot for this disease is head and neck, where it presented as lymphadenopathy, nasal, oropharyngeal, tonsillar or sinus disease [9-11]. As
in children, during adulthood also, it is associated with immunodeficiency, and manifests mainly as abdominal mass with constitutional symptoms [12]. Stomach is considered a relatively rare location of Burkitt lymphoma which is mainly treated by chemotherapy unless complicated [1,2]. We herein present a case of gastric Burkitt lymphoma who developed chemotherapy-induced perforation.

Case Report

A 21-year old man presented to our emergency department of Nemazee hospital, a tertiary healthcare center affiliated with Shiraz University of Medical Sciences, with severe abdominal pain since 12 hours prior to admission. The patient was a known case of histopathologically confirmed Burkitt lymphoma of the stomach. He had undergone upper gastrointestinal endoscopy revealing huge necrotic mass in greater curvature of the stomach (Figure 1). Chemotherapy using Cyclophosphamide, Vincristine and Adriamycin had been started for the patients after the histopathological diagnosis. 10-hour after receiving the first session of the chemotherapy, the patient developed acute severe abdominal pain. On examination he had epigastric tenderness, along with abdominal guarding. He was hemodynamically unstable (BP: 90/60 mmHg; PR: 122/min; RR: 26/min; Temperature: 39.1°C) and laboratory investigations revealed leukocytosis (WBC: 12,000/mm³) along with elevated ESR and positive CRP. Abdominopelvic sonography was requested which revealed moderate free fluid in the abdominal cavity. He was transferred to emergency operation room and underwent exploratory laparotomy. During laparotomy, 3*2 cm gastric perforation at site of mass like lesion was detected. Total gastrectomy and roux-en-y esophagojejunostomy was performed for the patient. The patient was then transferred to ICU for 2 days and then was transferred to a surgical ward. He had an uneventful postoperative course and was discharged from the hospital with favorable condition. Chemotherapy was started for him 1 week later without any other complication.

Discussion

Burkitt lymphoma arises from B-cells, either mature or immature. It is uncommon during adulthood and may occur at any age, but most common age in adults is 40 years and above. In both adult and children it may be associated with HIV infection and immunodeficiency [10]. Burkitt lymphoma is well known for its rapid duplication and aggressive characteristic especially in adults. In adults, it usually presents as a rapidly growing mass in the abdomen which is associated with weight loss, night sweating and unexpected fever, extra nodal involvement including bone marrow and CNS, may also be seen as another common presentation [10]. Sporadic form of this diseases presents mostly as extra-nodal, intra-abdominal lesion. All intra-abdominal organs are susceptible to this disease, but bowel (especially distal ileum and ileocecal region), intra-abdominal lymph nodes, spleen, kidney, pancreas and liver are the most susceptible organs. Apart from abdominal organs, breasts and ovaries are other targets for this disease [11]. Since it grows as a mass in the wall of involved abdominal viscera, intestinal obstruction, abdominal distension or intussusceptions may occur [13-15].

Currently best treatment for Burkitt lymphoma is intense chemotherapy with an excellent prognosis.
Perforation of abdominal viscera is possible, may be due to necrosis caused by high rate of proliferation, therefore any patient with Burkitt lymphoma who develops abdominal pain should be suspected of bowel perforation unless proved otherwise. Due to this complication, patient may develop peritonitis and die during the course of disease or treatment [16–19].

Recently, Mihara K and et al. reported their case with advanced gastric cancer that presented with acute gastric perforation at site of tumor on day 15 of chemotherapy [20] but in our case, perforation of abdominal viscera is possible, may be due to necrosis caused by high rate of proliferation, therefore any patient with Burkitt lymphoma who develops abdominal pain should be suspected of bowel perforation unless proved otherwise. Due to this complication, patient may develop peritonitis and die during the course of disease or treatment [16–19].

In conclusion, perforation of gastric Burkitt lymphoma is a very rare but condition with a dramatic scenario. Preoperative evaluation of mass like lesions is very important and surgical resection before induction of chemotherapy is highly recommended for intramural huge mass to avoid spontaneous rupture.

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References