Case Report

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

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ABSTRACT

Burkitt lymphoma of stomach is among the most rapidly growing gastric cancersassociated with several gasterointestinal 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 kwon 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.

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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 gastricBurkitt 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). Chemotherapyusing 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/mm^3) along with elevated ESR and positive CRP. Abdominopelvic sonography was requested which revealed moderate free fluid in the abdominal cavity. Hewas 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 lymphomais 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.

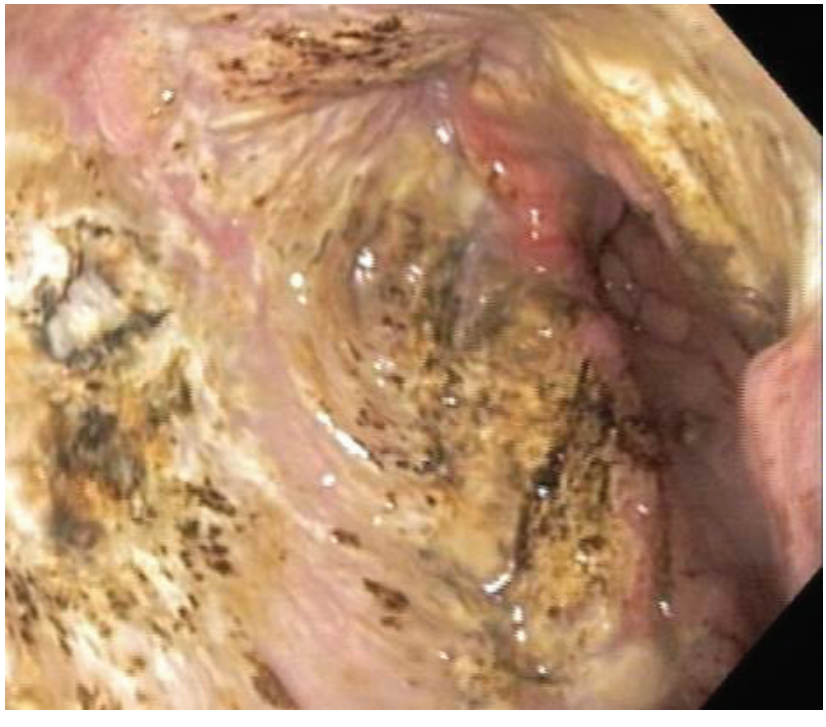

Fig 1. Upper gastrointestinal endoscopy revealing huge necrotic mass in greater curvature of stomach.

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 induced just one day after chemotherapy. In other report, Meltem Ergun and *et al*. published a case of primary gastric lymphoma with acute perforation after 2 sessions of chemotherapy as the first case with this dramatic presentation [21] but we found our case after just first dose of inducted chemotherapy.

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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Conflict of Interest: None declared.

References

1. Burkitt DP. Etiology of Burkitt lymphoma--an alternative hypothesis to a vectored virus. *J Natl Cancer Inst*. 1969;**42**(1):19-28.
2. Molyneux EM, Rochford R, Griffin B, Newton R, Jackson G, Menon G, et al. Burkitt's lymphoma. *The Lancet*. 2012;**379**(9822):1234-44.
3. Jaffe ES. The 2008 WHO classification of lymphomas: implications for clinical practice and translational research. *Hematology Am Soc Hematol Educ Program*. 2009:523-31.
4. Orem J, Mbidde EK, Lambert B, de Sanjose S, Weiderpass E. Burkitt's lymphoma in Africa, a review of the epidemiology and etiology. *Afr Health Sci*. 2007 Sep;7(3):166-75.
5. Cardy AH, Sharp L, Little J. Burkitt's lymphoma: A review of the epidemiology. *Kuwait Medical Journal*. 2001;33(4):293-306.
6. Mwanda OW, Rochford R, Moormann AM, Macneil A, Whalen C, Wilson ML. Burkitt's lymphoma in Kenya: geographical, age, gender and ethnic distribution. *East Afr Med J*. 2004(8 Suppl):S68-77.
7. Burkitt DP. Epidemiology of Burkitt's lymphoma. *Proceedings of the Royal Society of Medicine*. 1971;**64**(9):909.
8. Perkins AS1, Friedberg JW. Burkitt lymphoma in adults. *Hematology Am Soc Hematol Educ Program*. 2008:341-8.
9. Patte C1, Philip T, Rodary C, Zucker JM, Behrendt H, Gentet JC, et al. High survival rate in advanced-stage B-cell lymphomas and leukemias without CNS involvement with a short intensive polychemotherapy: results from the French Pediatric Oncology Society of a randomized trial of 216 children. *J Clin Oncol*. 1991;9(1):123-32.
10. Patte C1, Auperin A, Michon J, Behrendt H, Leverger G, Frappaz D, et al. The Société Française d'Oncologie Pédiatrique LMB89 protocol: highly effective multiagent chemotherapy tailored to the tumor burden and initial response in 561 unselected children with B-cell lymphomas and L3 leukemia. *Blood*. 2001;**97**(11):3370-9..
11. Hesseling P1, Molyneux E, Kamiza S, Israels T, Broadhead R. Endemic Burkitt lymphoma: a 28-day treatment schedule with cyclophosphamide and intrathecal methotrexate. *Ann Trop Paediatr*. 2009;**29**(1):29-34.
12. Blum KA, Lozanski G, Byrd JC. Adult Burkitt leukemia and lymphoma. *Blood*. 2004;**104**(10):3009-20.
13. Gupta H, Davidoff AM, Pui CH, Shochat SJ, Sandlund JT. Clinical implications and surgical management of intussusception in pediatric patients with Burkitt lymphoma. *J Pediatr Surg*. 2007;**42**(6):998-1001; discussion 1001.
14. Bakir T, Gümüştekin E, Bozalioğlu H, Teziç T, Ozoran Y. Gastric involvement in childhood non-Hodgkin's lymphoma: a case report. *Turk J Pediatr*. 1991;**33**(1):43-7.
15. Yadav S, Gupta R, Oak SN, Rathi P, Kulkarni BK, Sawant P. Primary gastric lymphoma in a boy. *Indian J Gastroenterol*. 1997;**16**(3):112-3.
16. Goldberg SR, Godder K, Lanning DA. Successful treatment of a bowel perforation after chemotherapy for Burkitt lymphoma. *J Pediatr Surg*. 2007;**42**(3):E1-3.
17. Olinici CD, Vasiu R. Gastric Burkitt's lymphoma. Case report and review of the literature. *Morphol Embryol (Bucur)*. 1990;**36**(1):39-41.
18. Guven A, Demirbag S, Atabek C, Ozturk H. Spontaneous gastric perforation in a child with Burkitt lymphoma. *J Pediatr Hematol Oncol*. 2007;**29**(12):862-4.
19. Cairo MS, Sposto R, Perkins SL, Meadows AT, Hoover-Regan ML, Anderson JR, et al. Burkitt's and Burkitt-like lymphoma in children and adolescents: a review of the Children's Cancer Group experience. *Br J Haematol*. 2003;**120**(4):660-70.
20. Mihara K, Egawa T, Kemmochi T, Irino T, Okamura A, Inaba Y, et al. A case report-highly advanced gastric cancer leading to perforation during neoadjuvant chemotherapy with docetaxel, cisplatin and S-1. *Gan To Kagaku Ryoho*. 2011;38(12):2357-9.
21. Ergün M, Cindoruk M, Akyürek N, Akyol G, Ünal S. A case of primary gastric Burkitt-like lymphoma with chemotherapy-induced perforation. *Turk J Gastroenterol*. 2012;**23**(3):299-300.