CASE REPORT

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Plasmablastic lymphoma as a rare cause of subocclusive events – case report and review of the literature

Plazmablastni limfom kao redak uzrok subokluzivnih smetnji

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Abstract

Introduction. The most common causes of subocclusive disorders are the adhesion, Crohn's disease and small bowel neoplasms. Plasmablastic lymphoma (PBL) is an aggressive distinct subtype of diffuse large B-cell non-Hodgkin lymphoma initially reported in the oral cavity of the HIV infected individuals. **Case report.** We presented a male patient with PBL of the small intestine as a rare cause of intestinal subocclusion, without HIV infection and negative serology for hepatitis C, hepatitis B, and Epstein-Barr infection. A 73-year-old male was admitted to our Center due to the one-year history of abdominal pain, weigh loss, non-bloody diarrhea, night sweating and pruritus. The patient underwent the ileocolonoscopic examination with the accompanying biopsy specimens. The results, based on the histopathological and immunohistochemical pattern, confirmed a diagnosis of PBL. Following the chemotherapy treatment, our patient underwent the resection of ileum. The postoperative histopathological report confirmed PBL as the final diagnosis. The patient was treated for the following 6 months with the chemotherapy according to the cyclophosphamide, doxorubicin, vincristine, and prednisolone (CHOP) protocol. Fatal outcome was due to acute myocardial infarct. **Conclusion.** PBL of the small intestine is a rare and unusual cause of subocclusive events. In our patient, an accurate histopathological verification of the detected changes in the ileum was of crucial importance for further treatment.

Key words:
crohn disease; diagnosis, differential; immunohistochemistry; intestinal neoplasms; intestinal obstruction; lymphoma, large b-cell, diffuse; plasmablastic lymphoma; treatment outcome.

Apstrakt

Uvod. Najčešći uzroci subokluzivnih poremećaja u adheziji, Kronova bolest i neoplazme tankog creva. Plazmablastni limfom (PBL) je tip agresivnog difuznog krupnoćelijskog B nehočkinskog limfoma, koji je prvi put opisan u usnoj duplji kod HIV pozitivnih bolesnika. **Prikaz bolesnika.** U radu je prikazan bolesnik sa PBL tankog creva kao retkim uzrokom subokluzije, bez HIV infekcije i sa negativnom serologijom za hepatitis B, hepatitis C i infekciju Epštajn-Barovim virusom. Muškarac, star 73 godine, primljen je u naš Centar zbog jednogodišnje istorije bolova u trbuhu, gubitku telesne mase, dijareje (bez krvi), noćnog znojenja i svraba. Bolesniku je urađena kolonoskopija sa terminalnom ileoskopijom, pri kojoj je uzeta biopsija sluznice terminalnog ileuma. Rezultati patohistološkog i imunohistohemijskog ispitivanja su potvrdili dijagnozu PBL. Posle hemioterapije, bolesniku je urađena resekcija ileuma. Rezultat postoperativne patohistološke analize je potvrdio dijagnozu PBL. Bolesnik je lečen po protokolu CHOP (ciklofofamid, doksorubicin, vinkristin i prednizolon) tokom šest meseci. Fatalan ishod je nastupio zbog infarkta miokarda. **Zaključak.** Mada redak i neuobičajen, uzrok subokluzivnih tegoba može biti PBL ileuma. Kod našeg bolesnika krucijalni značaj za dalje lečenje je imala tačna patohistološka verifikacija promena aktiviranih u ileumu.

Ključne reči:
kronova bolest; dijagnoza, diferencijalna; imunohistohemija; creva, neoplazme; creva, opstrukcija; limfomi, b-krupnoćelijski, difuzni; limfom, plazmablastni; lečenje, ishod.

Introduction

Small bowel obstruction is a major cause of morbidity in hospitals around the world. The etiology of small bowel obstruction includes the adhesions (74%), Crohn's disease (7%), neoplasia (5%), hernia (2%), radiation (1%), and miscellaneous (11%)[1]. Plasmablastic lymphoma (PBL), a rare subtype of diffuse large B cell lymphoma, usually occurs in the patients with HIV infection and is primarily found in the oral cavity[1–4]. There are also reported cases of PBL in the immunocompetent individuals involving the cervical lymph nodes, stomach, lungs, cavity, small and large bowel, and liver[5–15]. This rare lymphoproliferative disorder is characterized by its plasmablastic morphology and immunohistochemical panel.

In this case report, we described a patient with symptoms of subocclusion and suspected Crohn's disease of terminal ileum on the endoscopy examination. Since the histopathological findings of the terminal ileum biopsy did not confirm Crohn's disease, an immunohistochemical examination was required. Upon the immunohistochemical analysis, PBL was diagnosed, isolated locally on the terminal ileum. Our patient had the negative serology tests for HIV, Epstein-Barr virus, hepatitis B and hepatitis C, and did not receive immunosuppressive therapy or suffered from any chronic disease.

The Ethics Committee approval for this report was obtained by the Ethics Committee of our Center.

Case report

A 73-year-old male was admitted to our Center with the one-year history of abdominal pain, weight loss, reported non-bloody diarrhea (six times a day), night sweating, and pruritus. His medical history revealed the laparoscopic cholecystectomy in 2012, sinus arrhythmia, hypertension, and benign prostatic hyperplasia. There was no family history of malignancies. The patient was an ex-smoker and had no recent consumption of beverages or drugs.

Six months prior to the admission to our Center, the patient was examined in a regional hospital. However, the results of the previous examinations were unmarkable, except the finding on the radiographic examination of the small intestine which raised suspicion of Crohn's disease of the terminal ileum.

Upon the admission in our center, the general physical examination revealed an abdominal tenderness in the lower abdomen, with no palpable lymphadenopathy or hepatosplenomegaly. The patient had an arrhythmic heartbeat with a heart rate of 55–90 beats/min, sinus arrhythmia in electrocardiogram, an atrioventricular block type I and a suspected sick sinus syndrome.

The laboratory data included hemoglobin concentration [113 g/L (normal range: 138–172 g/L)], and normal values for the white blood cell and platelet counts, β2 microglobulin, lactate dehydrogenase, total proteins and albumins. The C-reactive protein (CRP) values (28.2 mg/L) and the erythrocyte sedimentation rate (ESR) (32 mm/h) were elevated (normal range – CRP: less than 5 mg/L; ESR under 20 mm/h). A serum protein electrophoresis did not show the presence of monoclonal protein. Both the serum carcinoembryonic antigen and CA 19-9 were within the normal range. The serological tests for HIV, hepatitis B, hepatitis C, and Epstein-Barr virus were negative. The purified protein derivative (PPD) skin test was also negative. The analyses of stool samples were negative for *Campylobacter jejuni*, *Yersinia enterocolitica*, and *Clostridium difficile*.

The conventional chest X-ray, abdominal ultrasonography and computed tomography (CT) scan showed no abnormalities. Due to the clinical presentation and radiographic signs of subocclusion, the patient was examined by a surgeon who recommended further investigation and conservative treatment. An esophagogastroduodenoscopy revealed a small hiatal hernia and no macroscopic abnormalities of the esophagus, stomach and duodenum. The colonoscopy examination and an accompanying biopsy revealed a normal colon. Endoscopy of terminal ileum showed diffuse erythema and vascular congestion of the mucosal architecture in the terminal ileum with ulcerations as the "skip lesions" between macroscopically normal presented areas of mucosa of terminal ileum.

Relative improvement of clinical symptoms including reduction of abdominal pain and decreasing number of liquid stools was achieved using mesalamine and methylprednisolone. The laboratory data, however, revealed an elevated ESR (66 mm/h) and the fibrinogen values [7.5 g/L (normal range 2–4 g/L)]. Although the histopathology report did not confirm Crohn's disease, the findings of multiple endoscopic biopsies revealed the diffuse infiltration of lymphoid cells. Re-biopsies of terminal ileum and immunohistochemical examination of the terminal ileum were therefore required. The endoscopic features of the terminal ileum during the repeated endoscopy revealed inflamed mucosa with the irregular nodular and polypoid pattern, spontaneous bleeding, and multiple large ulcers (Figure 1).

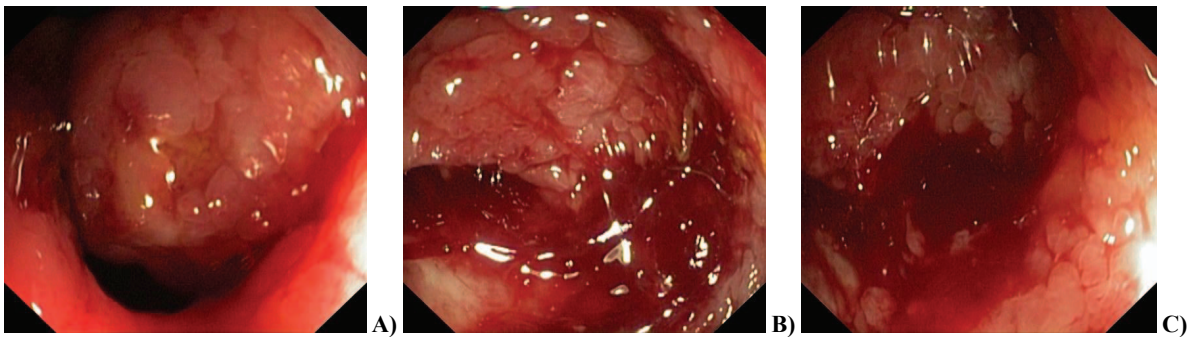

Fig. 1 – The endoscopic features of the terminal ileum during ileocolonoscopy: A) ulcer; B) the polypoid altered mucosa and spontaneous bleeding; C) the nodular alterated mucosa.

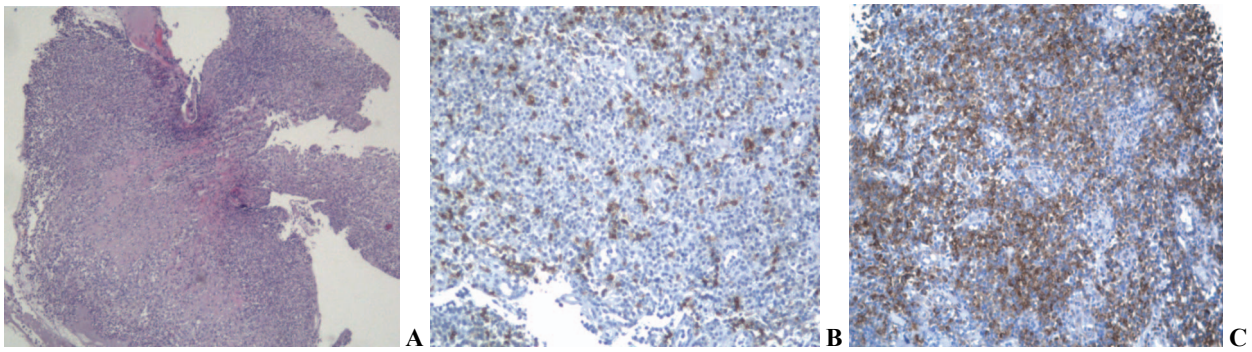

Fig. 2 – The histopathological examination of tumor tissue in the terminal ileum: A) Hematoxylin and eosin staining – diffuse neoplastic infiltration of ileum with the atypical large lymphoid cells; B) The immunohistochemical (IHC) analysis of CD20 – the lymphoid tumor cells are negative, while normal B lymphocytes are positive for the CD20 expression; C) The IHC analysis for CD38 – the lymphoid tumor cells were positive for the CD38 expression.

The histopathological examination revealed the abundancy of atypical large lymphoid cells. The immunohistochemical analyses of the biopsied tissue were positive for MUM1, CD38, and CD138, and negative for Pax5, CD20, CD3, bcl2, bcl6, CD56, and CD10; Ki67 was approximately 30% (Figure 2). The results based on the histopathological and immunohistochemical patterns confirmed a diagnosis of PBL. The patient was sent for further hematological investigation and treatment. After completing the clinical staging procedures, the patient received cyclophosphamide, doxorubicin, vincristine, and prednisolone (CHOP) chemotherapy. Due to the persistence of abdominal pain, the patient was transferred to the surgery department, where an ileum resection (50 cm in length) was performed. The postoperative histopathology report confirmed PBL as the final diagnosis.

After the postoperative recovery, the patient was receiving chemotherapy according to the CHOP protocol for the following 6 months, when the fatal outcome occurred due to acute myocardial infarction and consequently cardiac insufficiency.

Discussion

Our case report on localized PBL of the ileum presents a rare cause of subocclusive events. The patient was initially admitted to our hospital for further investigation to exclude previously suspected Crohn's disease. Due to the patient's persistent abdominal pain and radiographic signs of subocclusion, a surgical treatment was discussed without previous ileocolonoscopy.

Crohn's disease is the second most common etiological factor of intestinal obstruction that can require a surgical treatment [1]. According to the available literature, approximately 80% of patients with Crohn's disease will undergo an operation during their lifetime [2]. For the patients with Crohn's disease of the small intestine, an intestinal obstruction is the primary surgical indication [3]. During an ileocolonoscopy, the endoscopic features of Crohn's disease of the terminal ileum were described in our patient. The patient was therefore treated with mesalamine and corticosteroids. An explanation for the relative clinical improvement is that prednisolone is also included in the CHOP therapy. The final PBL diagnosis was based on the histopathology and immunohistochemical analysis with the additional confirmation by the postoperative findings. The case report of our patient once again proves the importance of histopathology and immunohistochemistry in order to establish the final diagnosis.

Although PBL was initially described in the patients with acquired immunodeficiency syndrome (AIDS) predominantly in the oral cavity, the clinical spectrum of this malignancy has since been expanded [4].

In the largest cohort study so far, conducted on 135 patients with PBL, the most of them were immunocompromised – either HIV-positive, transplanted or previously treated for systemic diseases and carcinoma [16].

However, there have been a number of patient series and reports including the HIV-negative cases and extraoral localizations**.** Over one-third of all PBL cases were first noted at extraoral locations, predominantly within the gastrointestinal tract. According to the relevant literature, the HIV-negative patients can have PBL in the stomach, small bowel, and colon [6, 9, 10, 13, 14]. PBL of the small intestine is extremely rare. Some Korean authors described the PBL cases of the small intestine associated with other locations, such as the oral cavity, jejunum and thorax [9]. According to a study conducted by some Chinese authors, the patients with localized PBL of the small intestine were immunocompromised from hepatitis B infections and had a recent radiotherapy for maxillary sinus cancer [11]. Our case report is specific because the illness, causing the small bowel obstruction, was localized to 50 cm of ileum in the immunocompetent patient with no previous medical history of radiotherapy or use of immunosuppressant drugs.

A group of Chinese authors analyzed 114 HIV negative patients with PBL from 52 published papers and concluded that PBL was localized in the gastrointestinal tract in only 15.79% of cases [17].

In a study conducted by the US authors, of 61 patients with PBL, the gastrointestinal tract was affected in 12 patients, of whom only 3 patients were immunocompetent [18].

Although the studies of other authors suggest a very low diagnostic yield terminal ileum intubation during colonoscopy, our case report points to the importance of insisting on the exploration of the small intestine in a patient with subocclusive symptoms in order to establish the final diagnosis [19, 20]. Also, in our patient, the crucial importance for further treatment was an accurate histopathological verification of the detected changes in the ileum.

Conclusion

The differential diagnosis of subocclusive events can also include PBL of the small intestine, as a rare and unusual site of the disease, in the HIV-negative patients without a previous medical history of immunosuppression.

Conflicts of interest

The authors state that they have no conflict of interest.

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R E F E R E N C E S

1. *Miller G, Boman J, Shrier I, Gordon PH*. Etiology of small bowel obstruction. Am J Surg 2000; 180(1): 33–6.
2. *Bernell O, Lapidus A, Hellers G*. Risk factors for surgery and recurrence in 907 patients with primary ileocaecal Crohn's disease. Br J Surg 2000; 87(12): 1697–701.
3. *Sands BE, Arsenault JE, Rosen MJ, Alsahli M, Bailen L, Banks P,* et al. Risk of early surgery for Crohn's disease: implications for early treatment strategies. Am J Gastroenterol 2003; 98(12): 2712–8.
4. *Delecluse HJ, Anagnostopoulos I, Dallenbach F, Hummel M, Marafioti T,Schneider U,* et al. Plasmablastic lymphomas of the oral cavity: a new entity associated with the human immunodeficiency virus infection. Blood 1997; 89(4): 1413–20.
5. *Lin F, Zhang K, Quiery AT Jr, Prichard J, Schuerch C*. Plasmablastic lymphoma of the cervical lymph nodes in a human immunodeficiency virus-negative patient: a case report and review of the literature. Arch Pathol Lab Med 2004; 128(5): 581–4.
6. *Mihaljevic BS, Todorovic MR, Andjelic BM, Antic DA, Perunicic Jovanovic MD*.Unusual presentation of gastric plasmablastic lymphoma in HIV-negative patient. Med Oncol 2012; 29(2): 1186–9.
7. *Lin Y, Rodrigues GD, Turner JF, Vasef MA*. Plasmablastic lymphoma of the lung: report of a unique case and review of the literature. Arch Pathol Lab Med 2001; 125(2): 282–5.
8. *Gaidano G, Cerri M, Capello D, Berra E, Deambrogi C, Rossi D,* et al. Molecular histogenesis of plasmablastic lymphoma of the oral cavity. Br J Haematol 2002; 119(3): 622–8.
9. *Cha JM, Lee JI, Joo KR, Jung SW, Shin HP, Lee JJ*, et al. A case report with plasmablastic lymphoma of the jejunum. J Korean Med Sci 2010; 25(3): 496–500
10. *Brahmania M, Sylwesterowic T, Leitch H*. Plasmablastic lymphoma in the ano-rectal junction presenting in an immunocompetent man: a case report. J Med Case Rep 2011; 5: 168.
11. *Wang HW, Yang W, Sun JZ, Lu JY, Li M, Sun L*. Plasmablastic lymphoma of the small intestine: case report and literature review. World J Gastroenterol 2012; 18(45): 6677–81.
12. *Castillo JJ, Reagan JL*. Plasmablastic lymphoma: a systematic review. ScientificWorldJournal 2011; 11: 687–96.
13. *Hashimoto M, Inaguma S, Kasai K, Kuwabara K, Noda N, Hayakawa M,* et al. Plasmablastic lymphoma of the stomach in an HIV-negative patient. Pathol Int 2012; 62(11): 763–70.
14. *Mansoor M, Alani FS, Aslam MB, Kumar SN, Sahasrabudhe N, Khan D*. A case report of cecal plasmablastic lymphoma in a HIV-negative patient. Eur J Gastroenterol Hepatol 2012; 24(3): 332–5.
15. *Tani J, Miyoshi H, Nomura T, Yoneyama H, Kobara H, Mori H*, et al. A case of plasmablastic lymphoma of the liver without human immunodeficiency virus infection. World J Gastroenterol 2013; 19(37): 6299–303.
16. *Tchernonog E, Faurie P, Coppo P, Monjanel H, Bonnet A, Algarte Génin M*, et al. Clinical characteristics and prognostic factors of plasmablastic lymphoma patients: analysis of 135 patients from the LYSA group. Ann Oncol 2017; 28(4): 843–8.
17. *Liu M, Liu B, Liu B, Wang Q, Ding L, Xia C*, et al. Human immunodeficiency virus-negative plasmablastic lymphoma: a comprehensive analysis of 114 cases. Oncol Rep 2015; 33(4): 1615–20.
18. *Loghavi S, Alayed K, Aladily TN, Zuo Z, Ng SB, Tang G*, et al. Stage, age, and EBV status impact outcomes of plasmablastic lymphoma patients: a clinicopathologic analysis of 61 patients. J Hematol Oncol 2015; 8: 65.
19. *Jeong SH, Lee KJ, Kim YB, Kwon HC, Sin SJ, Chung JY*. Diagnostic value of terminal ileum intubation during colonoscopy. J Gastroenterol Hepatol 2008; 23(1): 51–5.
20. *Yoong KK, Heymann T*. It is not worthwhile to perform ileoscopy on all patients. Surg Endosc 2006; 20(5): 809–11.

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