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Rectal Cancer in Patient with Chronic Lymphocytic Leukemia Association with Brucellosis: The First Case Report

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Abstract **Introduction:** Colorectal cancer is the fourth most common cancer in men and the third most common in women. Brucella infections in immune compromised hosts (like CLL) are relatively rare. Herein, we reported first case report, a patient have been diagnosed as simultaneous CLL and brucellosis during his follow up that she indicated a subsequent neoplasm after CLL according to our knowledge. **Case Report:** A 77-year-old male, presented to his primary care provider with complaint of weakness and fatigue. After analysis with bone marrow aspiration and biopsy, there was heavy infiltration with well-differentiated small lymphocytes so we diagnosed CLL for her problems. Then he was treated with prednisolone and cyclophosphamide with allopurinol. During the treatment period (about one year after the first visit), the patient was suffering from brucellosis that treated with cotrimoxazole + rifampicin regimen. In the continued his treatment, he had been treated with danazol and then intravenous immunoglobulin for a few attack of severe pneumonia. Recently he suffer of complaint of hematochezia, then refer for rectosigmoidoscopy with rectal mass lesion. In pathology reported well differentiation rectum adenocarcinoma. He had chemo irradiation with capecitabine and then with adjuvant regimen of CAPOX (Xeloda with oxaliplatin). At now he is alive with classic follow up. **Conclusion:** In patients with CLL and brucellosis we suggest that treatment for infection and leukemia simultaneously and we have enough notice about the patient's conditions because it may be created second non hematological malignancy. These clinical procedures make life more for the patient.

Keywords: *Brucellosis, CLL, Hematochezia, Rectal cancer*

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1. Introduction

Colorectal cancer (CRC) is the fourth most common cancer in men and the third most common in women [1]. Asymptomatic B cell Chronic Lymphocytic Leukemia (CLL), diagnosed on peripheral blood markers or symptomatic presentation. B cell CLL has been described synchronously with rectal cancer [2]. Several studies from Western countries have indicated a significantly increased risk of subsequent neoplasms in patients with CLL. Though the precise etiology remains unclear, it has been suggested that concurrent defective immunity may play a central role in the development of subsequent neoplasms [3]. Brucellosis may cause serious infections in healthy individuals living in countries that are endemic for the infection. However, reports of brucella infections in immune compromised hosts are relatively rare [4]. Herein, we reported first case report, a patient have been diagnosed as simultaneous CLL and brucellosis during his follow up that she indicated a subsequent neoplasm (rectal cancer) after CLL according to our knowledge.

2. Case Report

A 77-year-old male was presented to his primary care provider with complaint of weakness and fatigue. Laboratory work demonstrated an absolute white blood cell count was 22 cells/mm^3, a platelet count was 199 × 109/ml and hemoglobin was 12.9 g/ml. On the biochemical examination, normal values of serum bilirubin, amylase, BUN, uric acid. After analysis with bone marrow aspiration and biopsy, there was heavy infiltration with well-differentiated small lymphocytes so we diagnosed CLL (Figure 1) for her problems. He also suffered of B-symptom, that it had most common indication of his treatment. Then he was treated with prednisolone and cyclophosphamide with allopurinol.

Dizziness and leg pain were the side effects of drugs but number of white blood cells exchanged to normal value. His B symptoms subside significantly. During the treatment period (about one year after the first visit), the patient was suffering from brucellosis that treated with cotrimoxazole + rifampicin regimen. In the continued his treatment, he had been treated with danazol and then intravenous immunoglobulin for a few attack of severe pneumonia. Recently he suffer of complaint of hematochezia, then refer for rectosigmoidoscopy with rectal mass lesion. In pathology reported well differentiation rectum adenocarcinoma. After rectal surgery observed extension to serosa in tumor size of 3 cm in length * 1.5 cm in thickness and all 30 explored lymph nodes were free. He had chemo irradiation with capecitabine and then with adjuvant regimen of CAPOX (Xeloda with oxaliplatin). At now he is alive with classic follow up.

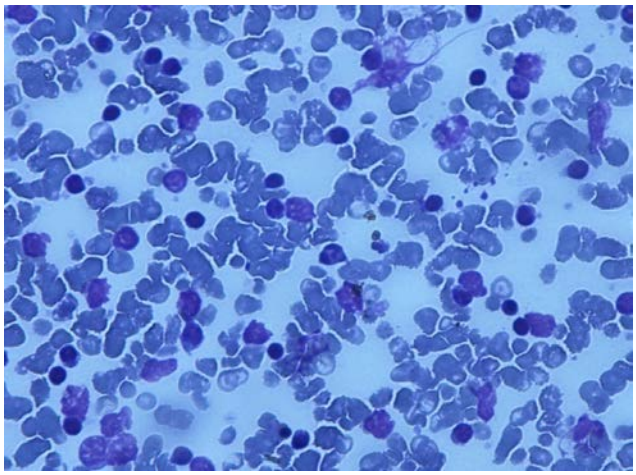

Figure 1. Lymphocytosis with many apparently mature lymphocytes and smudge cells

3. Discussion

CLL has been the most common type of leukemia in adults worldwide, and the most common type of leukemia in adults worldwide [5]. CRC is the third most common neoplastic disease in world wide. It is one of the leading causes of cancer mortality, accounting for about 10% of all cancer deaths, with approximately 40%-50% of all cases diagnosed as metastatic [6]. Brucella species are small Gram-negative, aerobic and non-motile intracellular coccobacilli that can be isolated from the genitourinary tracts of many wild and domestic animals [4]. Our Patients as rare case had all of three diseases (CLL, rectal cancer and brucellosis) concurrently. This synchronous relationship has been explained in terms of immunosuppression over a prolonged period due asymptomatic B cell CLL and a subsequent development of colorectal cancer, in fact, in a metachronous manner. This is consistent with the observed increase in the long term risk of solid organ malignancies in a patient diagnosed with B cell CLL [7]. Given the very early stage of the presumed B cell CLL in our patient it would seem unlikely that immunosup- pression has played a significant role in the development of the primary rectal carcinoma [2]. Different antibiotic regimens have been employed in the treatment of brucellosis including the following in various combinations: TMP/SMZ, rifampicin, doxycycline, ciprofloxacin, gentamicin and streptomycin [4]. Combination antibiotic regimen for our patient in during his treatment period was cotrimoxazole + rifampicin. There are a lot of studies in word that CLL patients have treated with different kinds of medicines in chemotherapy for the first-line therapy [5]. Combination of prednisolone to chlorambucil had a better complete response compared to chlorambucil alone [8]. Many advances have been made in the diagnosis and management of rectal cancer. These include clinical staging with imaging studies such as endorectal ultrasound and pelvic magnetic resonance imaging, operative approaches such as transanal endoscopic microsurgery and laparoscopic and robotic assisted proctectomy, as well as refined neoadjuvant and adjuvant therapies [9]. In this case patient for CLL malignancy was treated with prednisolone and cyclophosphamide with allopurinol. Also complaint of hematochezia, he was refered for rectosigmoidoscopy.

4. Conclusion

In patients with CLL and brucellosis we suggest that treatment for infection and leukemia simultaneously and we have enough notice about the patient's conditions because it may be created second non hematological malignancy. These clinical procedures make life more for the patient.

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