Journal of Current Hematology & Oncology Research

Case Report

DOI: 10.51271/JCHOR-0048

Kikuchi-Fujimoto disease: a rare cause of fever and lymphadenopathy in a 19-year-old male

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Cite this article: Çiftciler R, Çiftciler AE, Selim C, Çelik M. Kikuchi-Fujimoto disease: a rare cause of fever and lymphadenopathy in a 19-year-old male . *J Curr Hematol Oncol Res.* 2024;2(4): 95-97.

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Received: 02/08/2024 ◆ **Accepted**: 06/09/2024 ◆ **Published**: 14/11/2024

ABSTRACT

Kikuchi-Fujimoto disease (KFD) is also known as histiocytic necrotizing lymphadenitis or Kikuchi disease. The disease is a rare, self-limiting condition of an undetermined cause that manifests as protracted lymphadenopathy with or without systemic symptoms. Painful cervical lymphadenopathy accompanied by fever, leukopenia, and an increased erythrocyte sedimentation rate are its defining features. We reported a 19-year-old male was admitted to the hematology outpatient clinic with cervical lymphadenopathy and B symptoms. He was diagnosed with Kikuchi disease from a lymph node biopsy. He was successfully treated with intravenous immunoglobulin and steroids. The patient's complaints regressed and disappeared. Histopathological features, including lymph node necrosis and histiocytic growth, are used to diagnose KFD. It is regarded as a benign condition. To avoid incorrect diagnoses and needless treatments, medical professionals must be aware of Kikuchi disease while making a differential diagnosis for cervical lymphadenopathy.

Keywords: Kikuchi-Fujimoto, fever, lymphadenopathy, lymphoma

INTRODUCTION

Kikuchi-Fujimoto disease (KFD) is a rare self-limiting condition of undetermined cause that manifests as protracted lymphadenopathy (LAP) with or without systemic symptoms. It is also known as histiocytic necrotizing lymphadenitis or Kikuchi disease.[1] The exact role that microbial infection and non-infectious stimuli play in its etiopathogenesis is yet unknown. The majority of patients have firm to rubbery cervical LAP with sporadic fever; more severely afflicted individuals have leucopenia, splenomegaly, weight loss, and high erythrocyte sedimentation rate.[1] Young individuals of both genders are primarily affected, however the prevalence varies. Patients between the ages of 6 and 80 have been documented to have it, with a mean age of 30 at presentation; however, the majority of those affected were younger than 40 in most investigations.[2] The most prevalent signs and symptoms were LAP (100%), fever (35%), erythematous rash (10%), arthritis (7%), exhaustion (7%), and hepatosplenomegaly in 3% of patients.[3] It has also been noted that splenomegaly is a rare characteristic of KFD. The fever is usually low grade and sporadic, lasting around one week (occasionally up to one month; median length 9 days), and is the main symptom in 30–50% of individuals. A longer clinical course may be seen by patients with bigger lymph nodes, leucopenia, and fevers greater than 39.0 °C.[4,5] Due in large part to a lack of knowledge about this unusual disease, patients with KFD, particularly in its proliferative phase, have frequently been misdiagnosed as having non-Hodgkin or Hodgkin lymphoma, prompting thorough examinations and, in certain circumstances, aggressive treatment with cytotoxic medicines. The differential diagnosis of KFD includes infectious mononucleosis, tuberculous lymphadenitis, systemic lupus erythematosus, and cat scratch disease, in addition to lymphoma. In this study, we presented a 19-year-old male patient who presented with symptoms like lymphoma and was diagnosed with KFD and was successfully treated with intravenous immunoglobulin (IVIG) and steroids.

CASE

A 19-year-old male was admitted to the hematology outpatient clinic with cervical LAP and night sweats. Additionally, he had lost more than 10% of his weight in the last 6 months and had a fever of up to 39°C. He also had complaints of joint pain for about 1.5 months. He used amoxicillin and clavulanic acid for 2 weeks with the preliminary diagnosis of lymphadenitis. However, there was no improvement in the patient's complaints. On physical examination, fixed painful LAP was detected, reaching approximately 2 cm in the right and left cervical chains and extending to the supraclavicular region on the left. Laboratory tests revealed C reactive protein 28 mg/L, ferritin 562 ng/ml, hemoglobin 12.3 g/dl, leukocyte $3x10^3/mm^3$, neutrophil 1.3 $x10^3/mm^3$, platelet $209x10^3/mm^3$

and lactate dehydrogenase level 348 U/L. Contrast-enhanced neck magnetic resonance imaging revealed multiple lymph nodes in the right cervical chain, the largest of which was at level 5, 18x17 mm in size, some of them round in appearance and with increased cortical thickness. It was also reported that multiple LAPs around 1 cm were observed in the left cervical triangle. Abdominal ultrasonography revealed a spleen size of approximately 140 mm. He was admitted to the hospital for further diagnosis. Due to the patient's B symptoms and multiple pathological LAP, an excisional lymph node biopsy was performed with the preliminary diagnosis of lymphoma.

Histopathologic examination of the lymph node revealed multifocal coagulative necrosis in the paracortical area, abundant nuclear debris, and large mononuclear cells (histiocytes, plasmacytoid dendritic cells, and activated T cells) forming a pale area in the periphery (**Figure 1**). Immunohistochemically, widespread CD-68-positive histiocytes were observed around the necrosis foci (**Figure 2A**). CD-20 was immunopositive in follicular areas (**Figure 2B**), and CD-3 was immunopositive in paracortical areas. CD-8 showed more positive staining than CD-4 (**Figure 2C, 2D**). No staining with EBV was observed. Histomorphological and immunohistochemical findings were reported as compatible with 'Kikuchi Disease'. Because the patient had night sweats, painful LAP, and widespread ongoing joint pain, the patient was treated with methylprednisolone at 1 mg/kg and intravenous immune globulin (IVIG) at 400 mg/kg for 3 days. The patient, whose treatment was completed, was followed up in the hematology outpatient clinic. The patient's complaints regressed and disappeared.

DISCUSSION

Histopathological features, including lymph node necrosis and histiocytic growth, are used to diagnose KFD. It is regarded as a benign condition.[6] On the other hand, chronic and even lethal instances have been documented in the literature.[7] Hemophagocytic syndrome, rheumatic illnesses, viral diseases, neurologic disorders, lymphoma, and interstitial lung disease have all been linked to KFD.[8-11] In the case we presented, there were no laboratory or clinical findings that could be associated with these diseases. There is no set course of therapy because the signs and symptoms normally go away on their own in one to four months without causing any major problems. Fever often goes down after the afflicted lymph node is removed, indicating that excisional biopsy may be beneficial therapeutically in addition to being diagnostic since it removes the source of the inflammation.[1] Usually, the goals of pharmacotherapy are to lower morbidity and avoid problems. In moderate instances, nonsteroidal anti-inflammatory medicines are generally adequate to relieve fever and soreness in the lymph nodes. Immunomodulators, systemic corticosteroids (prednisolone 1-2 mg/kg body weight) alone or in combination, high dose corticosteroids, and IVIG have been used to treat patients with prolonged fever, severe or symptoms that have persisted for more than two weeks, and recurrent disease. This is particularly the case for patients who present with extranodal

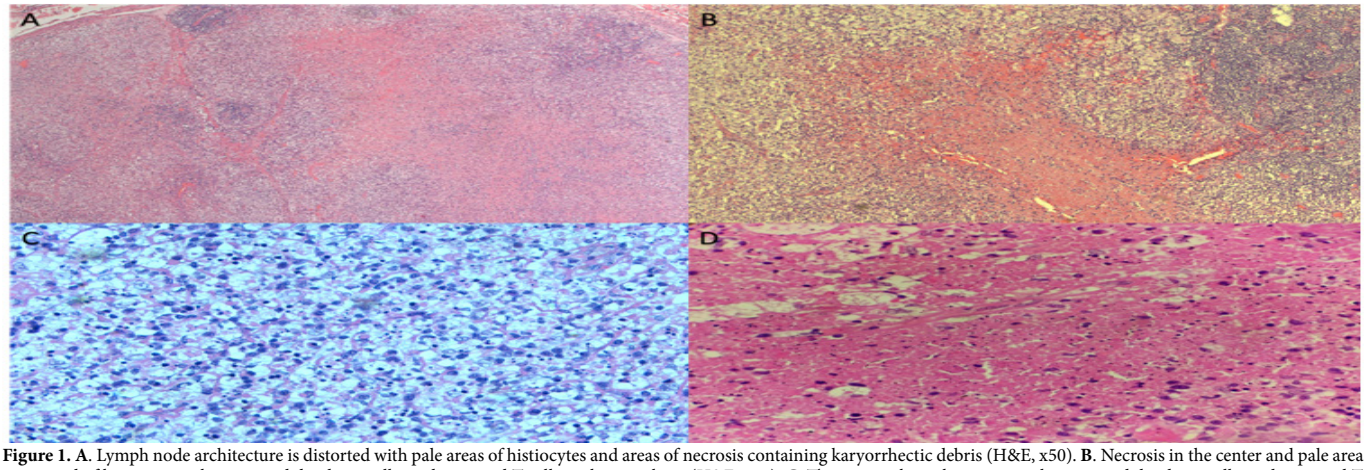

Figure 1. A. Lymph node architecture is distorted with pale areas of histiocytes and areas of necrosis containing karyorrhectic debris (H&E, x50). **B**. Necrosis in the center and pale area composed of histiocytes, plasmacytoid dendritic cells, and activated T cells in the periphery (H&E, x50). **C**. This image shows histiocytes, plasmacytoid dendritic cells, and activated T cells, which are the predominant lesional cells in Kikuchi lymphadenitis (H&E, x400). **D**. The necrotic foci in Kikuchi lymphadenitis show abundant eosinophilic karyorrhectic debris (H&E, x400).

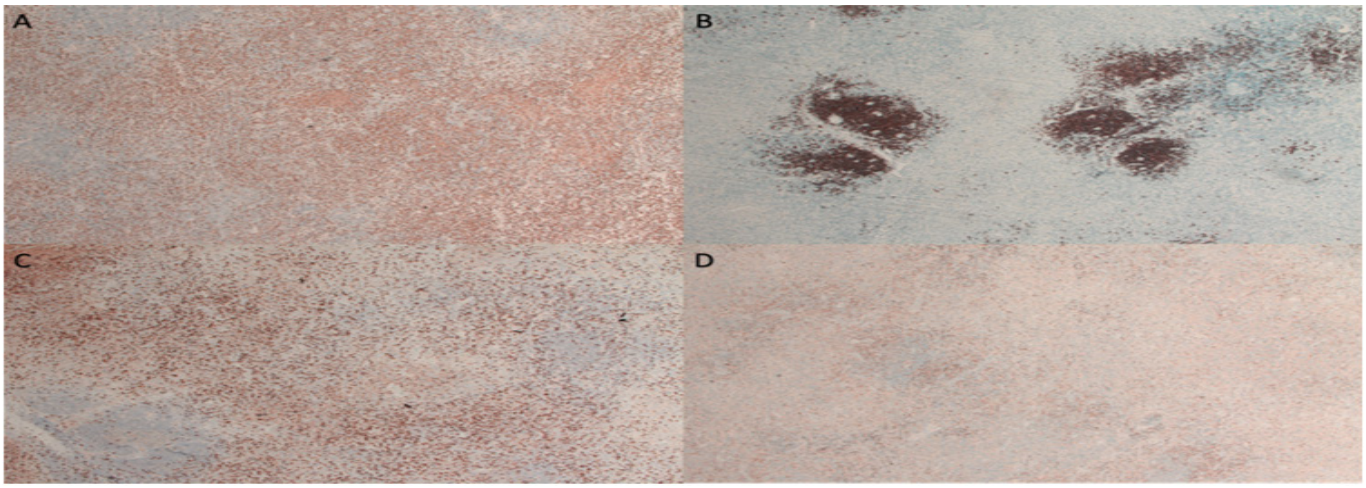

Figure 2. A. CD-68 positive in numerous histiocytes around areas of necrosis. **B**. CD-20 immunopositive in follicular areas outside of karyorrhectic areas. **C**. Many T cells in this field are CD-8 immunopositive. **D**. CD-4 immunopositive with few cells.

or generalized severe disease or hemophagocytic syndrome with good therapeutic results.[12-14]

CONCLUSION

In our case, he had lost more than 10% of his weight in the last 6 months and had a fever of up to 39 °C. Since he had constitutional symptoms and these complaints did not resolve spontaneously, the patient was treated with methylprednisolone at 1 mg/kg and IVIG at 400 mg/kg for 3 days. The patient's constitutional symptoms regressed. The lymph node shrank. The patient was followed up in the hematology outpatient clinic. To avoid incorrect diagnoses and needless treatments, medical professionals must be aware of Kikuchi disease while making a differential diagnosis for cervical lymphadenopathy.

ETHICAL DECLARATIONS

Informed Consent

The patient signed and free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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