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Kikuchi Disease Mimicking Tuberculosis: Case Report

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ABSTRACT
Kikuchi-Fujimoto Disease (KFD) is a rare cause of lymphadenopathy due to necrotizing lymphadenitis. It is relevant in Asia; however, many areas in the world report such diagnosis. This disease usually affects females at 20-40 year of age. KFD often manifest as cervical lymphadenopathy. It is a self-limited disease with a period ranging from few weeks to 6 months. The clinical picture is quite close to systemic lupus erythematosus (SLE), lymphoma or tuberculosis. We report one of three cases of KFD diagnosed in our hospital over a period of three years. Our patient is a 27-year-old man of African ethnicity. We will discuss the presenting symptoms, our differential diagnosis, radiographic findings, and pathology of this case, and we review the literature to assist physicians in diagnosing this benign and uncommon entity.
Keywords- *Kikuchi, Fujimoto, necrotizing granuloma, cervical lymphadenopathy, Histocytic lymphadenitis.*

INTRODUCTION

Kikuchi–Fujimoto disease is a self-limiting subacute necrotizing lymphadenitis. It has been observed in many ethnic groups, but Asian women is a typical example [1]. There is no known cause, and no incidence was reported in in Europe [2]. It presents with fever, fatigue, and lymph node enlargement particularly cervical lymphadenopathy [3]. Patients may have leukopenia, elevated ESR, and anemia.

We report an unusual presentation in a young adult with cervical lymphadenopathy, night sweating and fever misdiagnosed as tuberculosis (TB).

CASE PRESENTATION

A 27-year-old non-smoker male patient referred to our Hospital with a two months history of painless, stationary cervical lymphadenopathy with hectic fever, chills, weight loss, night sweat and anorexia. The only remarkable point in his history was contacting with a known TB patients; his brother's wife as well as two cousins. His sister has a history of systemic lupus erythematosus (SLE) and TB as well. Apart from generalized lymphadenopathy (left neck longitudinal group, left supraclavicular, bilateral axillary and bilateral inguinal lymph nodes), the patient was 'healthy' on clinical examination.

The patient had multiple medical advice before consulting us. Management plan included broad spectrum antibiotics and antipyretic (paracetamol) with no improvement.

The patient was admitted prior to our consultation; serial qualitative and quantitative investigations

were done. These included complete blood count (CBC), blood film, serology (EBVAbIgM, CMVAbIgM, HIV, Brucella, malarial film, Anti-HBc antibody, Anti- HCV, HBs Ag), Sputum acid-fast bacilli, C3 and C4 Complement level, anti-ds DNA antibody and lupus anti-coagulant profile. These previous studies were either negative or within normal limits for age and sex, but antinuclear antibody (ANA) test was positive, anti-cardiolipin was equivocal, and erythrocyte sedimentation rate (ESR) was 55.

His chest X-ray and abdominal ultrasound were unremarkable. Abdominal and chest computerized tomography (CT) scan showed multiple axillary lymph nodes more significant on the left.

The patient received a broad-spectrum antibiotic (amoxicillin + sulbactam) after admission to the referring facility, mild decrease in lymph node size was associated with prolonged febrile condition and uprising of ESR to 77. Histopathological examination of a biopsied lymph node showed necrotizing granulomatous lymphadenitis. Diagnosis of TB was made, and anti-tuberculous medications were administered but less tolerated by the patient. The patient remained feverish; weight loss continued, and his ESR surged to 105.

After that, referral and admission to our hospital with additional complaints; nausea and vomiting which can be emphasized by drugs side effects. The patient was volume-depleted as evident by physical exam and demonstrated on laboratory tests.

Management plan of ours included continuation of anti-TB medications and re-investigate all previous markers as shown in (Table 1).

Table 1: Investigations at our facility

TEST NAME	On Admission	On discharge	**Refrence Range**
HBC-AB TOTAL	Negative	----	----
HBC AB (IGM)	Negative	----	----
HBE AB	Negative	----	----
HBE AG	Negative	----	----
HBS AB	257.52 mIU/ml	----	----
HBS AG	Negative	----	----
HIV SCREENING	Negative	----	----
AFB (SPUTUM) X3	Negative	----	----
Blood Culture (Anaerobic)	Negative	----	----
Blood Culture (Anaerobic)	Negative	----	----
EBV IGG	Reactive	----	----
EBV IGM	Non-Reactive	----	----
CMV IGM	Negative	----	----
CRP	6.11	6.11	**<0.8 mg/dL**
ESR	98	123	**0 - 10 mm/hr**
Folate	4.22	----	**2.8 - 17.8 ng/mL**
Vitamin B12	450	----	**210 - 911 pg/mL**
Complement C3	180	----	**88 - 201 mg/dL**
Complement C4	41.5	----	**16 - 47 mg/dL**
MCH	29	28	**27-33 picograms (pg)/cell**
RBC	4.1	3.7	**4.5-5.9 x 10^{12}/L**
Platelet count	175	208	**150-400 x 10^9/L**
Hematocrit	33%	30.3%	**43 - 52 %**
MCV	80	83	**80-96 fL**
White blood cell	3.1	5.6	**4-10 x 10^9/L**
Hemoglobin	11.9	10.2	**14-16.5 g/dL**
Anti-ds DNA abs	12.3	----	**<30.0 IU/mL (negative)**
ANA	positive	----	
Albumin	1.32	1.16	**3.5-5.5 g/dL**
Alkaline phosphatase	223	289	**50-100 U/L**
ALT(GOT)	59	57	**5-30 U/L**
AST (GOT)	229	78	**5-30 U/L**
Amylase	100	116	**30-125 U/L**
Bilirubin (conjugated)	0.25	0.01	**0.3 to 1.9 mg/dL.**
Bilirubin(total)	0.44	0.24	**0.3 to 1.0 mg/dL**
BUN	20.3	7.8	**8-21 mg/dL**
calcium	6.7	7.5	**2-2.6 mmol/L**
creatinine	1.34	0.49	**0.8-1.3 mg/dL**
G	460	594	**6-50 U/L**
Random Glucose	100	100	**79 - 140 mg/dl**
LDH	209	917	**50-150 U/L**
Lipase	571	518	**10-150 U/L**
magnesium	2.2	1.8	**1.6 - 2.3 mg/dL**
Phosphorus	4.4	2.5	**2.6 - 4.5 mg/dL**
potassium	3.8	4.1	**3.5-5 mmol/L**
sodium	127	138	**135-145 mmol/L**
Total protein	5.4	4.9	**6.4–8.3 g/dL**
Uric acid	6.7	4.1	**3.4-7.0 mg/dL**

CT scanning of cervical, chest and abdomen with contrast revealed the following: (1) enlarged left deep cervical lymph node, largest measuring 1.5*1 cm showing oval-shaped & preserved fatty hilum seen at the upper internal jugular level. (2) Detected

smaller left posterior cervical lymph nodes and left supraclavicular lymph node measuring 1cm diameter. (3) Multiple enlargement bilateral axillary lymphadenopathy. They are oval-shaped &preserved fatty hilum largest is measuring 2*1.1 cm seen at left side. (4) No significant mediastinal lymphadenopathy, small sub centimetric hilar can be seen. (5) Mild pericardial effusion is noted. No pleural effusion. (6) The lung fields are clear with no evidence of pulmonary masses, consolidation or interstitial disease.

At that moment, differential diagnoses of such a scenario included the following:

Tuberculosis lymphadenitis: evidenced from history of housing with relatives diagnosed with active TB and the endemic nature of the disease in the area.

Systemic lupus erythematosus (SLE): close family member was diagnosed with SLE.

Benign lymphadenopathy like Kikuchi -Fujimoto disease, given the benign features of the lymph nodes on the CT scanning.

Histopathological re-examination showed a histiocytic necrotizing lymphadenitis. Hence, Kikuchi-Fujimoto disease diagnosis was confirmed.

Our management plan was modified to start symptomatic therapy and discontinuing anti-TB medications. The patient exhibited clinical and laboratory improvement and was discharged with near complete resolution of his symptoms.

DISCUSSION

Histiocytic necrotizing lymphadenitis is known as (Kikuchi-Fujimoto disease) has been described by Masahiro Kikuchi and independently by Y. Fujimoto in Japan [4,5]. Many synonymous existed for this disease like Kikuchi necrotizing lymphadenitis, phagocytic necrotizing lymphade-nitis, subacute necrotizing lymphadenitis and necrotizing lymphadenitis [6].

It is a rare, self-limited commonly underdiagnosed in female patients at 3rd-4th decades of age [6]. Cervical lymphadenopathy is often affected. It is commonly misdiagnosed with lymphoma, SLE or tuberculosis. Treatment modalities of previous differential diagnoses are complex while treatment of Kikuchi disease is only symptomatic or conservative [3].

The etiology of this disease has been discovered yet. However, theories of infectious agents (TB, Yersinia or Epstein-Barr Virus), genetic or autoim-mune mechanisms may explain. Recently, KFD is regarded as a hyper-immune response to various agents (infectious, chemical, physical and neoplastic) [7].

Lymphadenopathy usually resolves within few months. Recurrence is rare. Mortality is so rare and usually associated with cardiac and hepatic complications [7].

Bennie et al. [8] reported young American nurse working in India had a radiological diagnosis suggestive of TB, and lymph node biopsy confirmed necrotizing lymphadenitis. Bennie et al. did not mention whether this patient received anti-TB medications or not [8].

KFD is a pathological diagnosis and, therefore, an adequate histology specimen is necessary for a diagnosis so that patients may be treated appropriately and without any undue psychological stress2. In one pathological series study done at two large referral hospitals in Saudi Arabia, KFD was found to be the culprit disease in only 15 of 2500 lymph nodes biopsied [9], which highlights the rarity of the disease and the importance of pathological evaluation.

CONCLUSIONS

Kikuchi-Fujimoto disease is a rare, self-limited lymphadenopathy. Differentiating KFD from other systemic illness is important to avoid unnecessary management strategies.

KFD needs to be considered as a differential diagnosis in young female with lymphadenopathy.

Diagnosis of KFD is highly dependent on tissue biopsy.

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