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ATYPICAL KIKUCHI-FUJIMOTO DISEASE: FDG-PET CONTRIBUTION TO THE DIAGNOSIS

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ABSTRACT

Kikuchi-Fujimoto disease (KFD), also called histiocytic necrotizing lymphadenitis, is more common in young women and typically presents with small, painful, localized cervical lymphadenopathy that resolves spontaneously within a few weeks. Laboratory findings are variable. As many as 40% of KFD cases are reported to be painless, and up to 22% to be generalized lymphadenopathy. Therefore, malignant lymphoma could be a differential diagnosis of KFD. A histopathologic diagnosis is needed when it is difficult to distinguish KFD from lymphoma. KFD typically shows small, highly accumulated cervical lymph nodes on fluorodeoxyglucose positron emission tomography (FDG-PET). This contrasts with malignant lymphoma, which tends to be associated with massive lymphadenopathy. In our case, a 40-year-old Japanese male presented with painless lumps in the right neck, accompanied by fever, night sweats, and loss of appetite. His symptoms and laboratory results worsened over a month. FDG-PET revealed highly accumulated uptake in cervical, mediastinal, and axillary lymph nodes. The PET imaging showed a small, high FDG uptake and contributed to the correct diagnosis of KFD.

This case report highlights the importance of FDG-PET, which is a valuable diagnostic tool for KFD as it typically differentiates large clusters of small lymph nodes typical of KFD from normal lymph nodes.

KEYWORDS

Type A aortic dissection, Bentall procedure, atypical symptoms

LEARNING POINTS

- Kikuchi-Fujimoto disease (KFD) typically presents with small, painful, localised cervical lymphadenopathy.
- KFD has atypical patterns showing painless and generalised lymphadenopathy.
- Fluorodeoxyglucose positron emission tomography (FDG-PET) could be useful for diagnosing not only malignant lymphoma but also KFD.

INTRODUCTION

Kikuchi-Fujimoto disease, of unknown aetiology, typically presents with painful, localized cervical lymphadenopathy, high fever, and resolve spontaneously within a few weeks. Occasionally, it may involve lymph nodes throughout the body without pain, mimicking lymphoma. Biopsy is necessary for definitive diagnosis but is invasive. Fluorodeoxyglucose positron emission tomography (FDG-PET) can be valuable,

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given the difficulty in distinguishing lymph nodes in KFD from normal lymph nodes.

CASE DESCRIPTION

A 40-year-old Japanese male presented with a one-month history of painless lumps in the right neck. He had fever, malaise, night sweats, and loss of appetite but no weight loss. His medical history and family history was unremarkable. He was not taking any medications and denied any recent history of infections including cat scratches. He was referred to our hospital after visiting several other hospitals without being diagnosed.

On examination, the patient's temperature was 37.9 °C, his heart rate 86 bpm, and his blood pressure 118/66 mmHg. Physical examination revealed bilateral neck and right supraclavicular non-fluctuant, non-firm, and non-tender lymph nodes. Neck ultrasound scan showed numerous lymph nodes approximately 1 cm in diameter. The short-to-long axis ratio was 0.42 with normal nodal hilus *(Fig. 1)*.

Based on these findings, in the previous hospital it was initially thought that his lymph nodes were normal and might not be related to his symptoms. However, his malaise and loss of appetite gradually deteriorated over a month. Moreover, the laboratory test results progressively worsened over 1 month. There was a slight increase in aminotransferase, serum lactate dehydrogenase, C-reactive protein, erythrocyte sedimentation rate and soluble interleukin-2 receptor, as well as a decrease in the white blood cell count *(Table 1)*. Serological tests for systemic lupus erythematosus and Sjögren's syndrome were negative, indicatingonly the presence of past Epstein Barr virus (EBV) infection.

	DAY 30	DAY 40
AST (U/l)	34	
ALT (U/l)	37	
LD (U/l)	243	436
UN (mg/dl)	8	
CRE (mg/dl)	0.67	
Na (mmol/l)	139	
K (mmol/l)	4	
Cl (mmol/l)	105	
WBC (/µl)	3300	2700
Ne (/µl)	1828	1340
HGB (g/dl)	14.2	
PLT (×10^3 /µl)	273	
CRP (mg/dl)	0.11	0.41
sIL-2R (U/ml)	964	1457
ESR mm(1hr)	12	

Abbreviation - **AST:** aspartate aminotransferase; **ALT:** alanine transaminase; **LD:** lactate dehydrogenase; **BUN:** blood urea nitrogen; **CRE:** creatinine; **Na:** sodium; **K:** potassium; **Cl:** chloride; **CRP:** C-reactive protein; **WBC:** white blood cells; **Ne:** neutrophils; **HGB:** haemoglobin; **PLT:** platelets; **sIL-2R:** soluble interleukin 2 receptor; **ESR:** erythrocyte sedimentation rate

Table 1. Patient's blood test results.

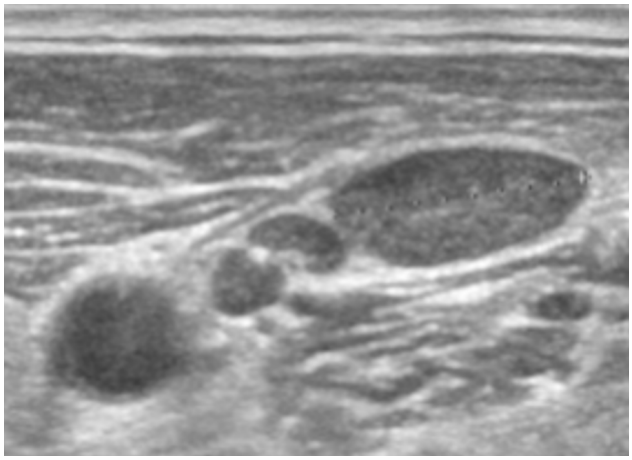

Figure 1. Ultrasound scan of the right neck showed approximately 1 cm lymph nodes. Short-to-long axis ratio was 0.42 with normal nodal hilus.

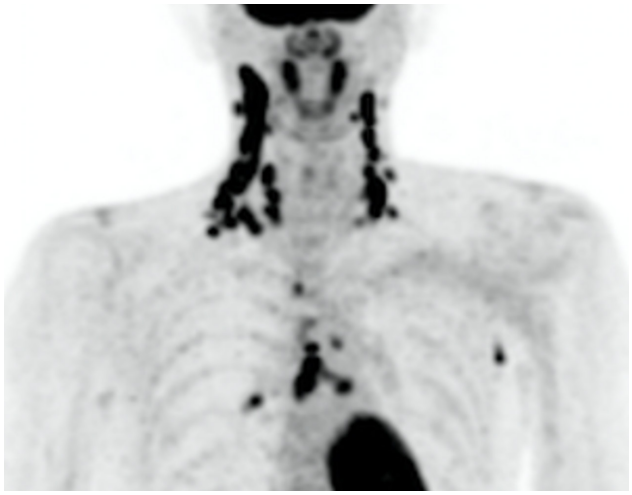

Figure 2. FDG-PET showed highly accumulated uptake in the lymph nodes of the mediastinum as well as the neck and axillary region.

FDG-PET showed highly accumulated uptake in the lymph nodes of the mediastinum and the neck and axillary region *(Fig. 2)*. Even though the neck lymph nodes were small, at around 1 cm, the maximum standardized uptake value (SUV max) of these nodes was 25.04, which is quite high. The right cervical lymph node biopsy showed no atypical cells. However, blastoid cells and diffuse necrotic tissue foci with karyorrhexis and apoptosis were noted *(Fig. 3)*, and these are definitive indicators of KFD. All clinical symptoms improved after one month of supportive follow-up care.

DISCUSSION

KFD, also called histiocytic necrotizing lymphadenitis[1], is more common in young women and typically presents with small, painful, localised cervical lymphadenopathy that resolves spontaneously within a few weeks. This rare benign self-limiting disease was firstly described in Japan in 1972 by Japanese pathologists Kikuchi[2] and Fujimoto[3]. Although

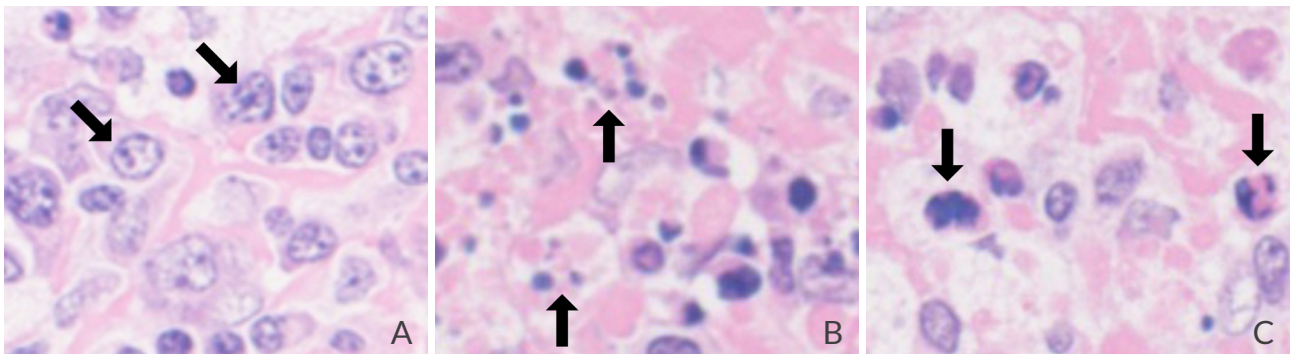

Figure 3. Histopathological features showed no atypical cells; (A) blastoid cells, (B) diffuse foci of necrotic tissue with karyorrhexis and (C) apoptosis were noted, which are definitive indicators of KFD.

KFD has been reported in all ages and ethnic groups, it predominantly affects young and paediatric patients of Asian descent. Its frequency is unknown. Affected cervical lymph nodes usually enlarge to 1-2 cm in diameter but have been reported in the literature to swell to up to 7 cm. The supraclavicular and axillary nodes are occasionally involved. Laboratory findings are variable, as in this case, low white blood cell counts, high aminotransferase, serum lactate dehydrogenase, C-reactive protein levels, and high erythrocyte sedimentation rate can be found. About 2–3% of KFD patients progress to systemic lupus erythematosus[4]. It should be mentioned that lymphadenopathy in as many as 40%[5] of KFD cases is reported to be painless and in up to 22% generalised. Therefore, malignant lymphoma could be a differential diagnosis of KFD. A histopathologic diagnosis is needed when it is difficult to distinguish KFD from lymphoma.

In KFD, FDG-PET typically reveals large clusters of small, cervical lymph nodes[6]. This contrasts with malignant lymphoma which tends to be associated with massive lymphadenopathy. In this case, the physical examination and ultrasound findings indicated his lymph nodes were normal. However, based on the worsening symptoms and blood test results, concerns remained about a potential underlying illness that needed further examination. The palpable lymph nodes on examination were considered KFD or malignant lymphoma. Finally, we conducted FDG-PET imaging, that showed high FDG uptake and contributed to the correct diagnosis of KFD.

CONCLUSION

KFD typically presents with small, painful, localised cervical lymphadenopathy. KFD has atypical patterns showing painless and generalised lymphadenopathy.

FDG-PET could be useful for diagnosing not only malignant lymphoma but also KFD. This case would not have been diagnosed without FDG-PET.

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