CASE REPORT

Kikuchi-Fujimoto's disease with abdominal pain due to intra-abdominal lymphadenitis

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SUMMARY

A 29-year-old woman was admitted to our hospital with fever and abdominal pain. Abdominal echogram and CT revealed intra-abdominal lymphadenopathy. Seven days after the onset, she developed cervical lymphadenitis. Kikuchi-Fujimoto's disease (KFD) was diagnosed on cervical lymph node biopsy. Although KFD with intra-abdominal lymphadenopathy is rare, it should be considered in young adults with intra-abdominal lymphadenitis. Because KFD is a benign, self-limiting disease, we suggest the use of a minimally invasive method of diagnosis such as superficial lymph node biopsy.

BACKGROUND

Kikuchi-Fujimoto's disease (KFD) is a benign, self-limiting disease characterised by lymphadenopathy. In 1972, Kikuchi and Fujimoto independently described the benign histiocytic necrotising lymphadenitis of cervical lymph nodes.^{1 2} The most common site of lymphadenopathy is cervical; intra-abdominal involvement is uncommon. We report a case of intra-abdominal lymphadenitis that was diagnosed as KFD by cervical lymph node biopsy.

CASE PRESENTATION

The patient was a 29-year-old Japanese woman who had no significant medical history. Ten days prior to admission at our hospital, she was admitted to a local hospital with a 3-day history of persistent upper abdominal pain, fever and chill. Abdominal pain was relieved by abstinence from food, intravenous feeding and antimicrobial agent administration. However, fever persisted and she experienced loss of appetite. Three days before admission to our hospital, she developed a sore throat and painful lymph nodes on the right neck. CT of the abdomen revealed intra-abdominal lymphadenopathy, and she was transferred to our hospital. She had no history of using any medication, having a pet or recent travel. She had a single sexual partner. On admission, physical examination revealed the following: temperature 38.1°C; pulse rate 103 bpm; blood pressure 92/54 mm Hg and respiration rate 14 breaths/minute. Elastic hard, mobile and mildly tender submandibular lymph nodes measuring 15 mm in diameter were noted on the right side. Left cervical and posterior cervical lymph nodes (diameter, 10 mm) were palpable. Axillary and inguinal lymph nodes were not palpable. Mild tenderness in the epigastric region was observed, and there was no evidence of hepatosplenomegaly. The limb joints appeared normal.

The laboratory findings were as follows: white cell count and platelet counts were 2500/μL (neutrophils 68%) and 172 000/μL, respectively; haemoglobin level was 11.6 g/dL and levels of C reactive protein (CRP), ferritin and soluble interleukin-2 receptor (sIL-2R) were 5.2 mg/dL, 1280 ng/mL, and 1260 U/mL, respectively; the tuberculin skin test and QuantiFERON-TB tests were negative and the titre of antinucleotic antibody was 80 (speckled and homo pattern). Further, immunological testing revealed the following results: anti-dsDNA antibody 4.7 IU/mL; C3 131 mg/dL; C4 46 mg/dL and CH50 58.1 U/mL. Serological testing for Epstein-Barr virus, cytomegalovirus, hepatitis B and C, HIV and *Toxoplasma* revealed negative results. The urine and blood cultures were also negative. CT scan showed lymphadenopathy of the right submandibular (figure 1), deep jugular, mesenteric, para-aorta (from coeliac to the bifurcation of common iliac artery) and paramesenteric arteries (figures 2 and 3). The lymph nodes were relatively small and clustered, and perinodal infiltration was noted. Mild splenomegaly was present.

DIFFERENTIAL DIAGNOSIS

Kikuchi-Fujimoto's disease, malignant lymphoma and tuberculosis.

Figure 1 A contrast-enhanced CT of the neck. Lymphadenopathy of the right submandibular is observed (white arrow).

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Figure 2 A contrast-enhanced axial CT of the abdomen. Lymphadenopathy of the mesenteric, the para-aorta and the para-mesenteric arteries is observed (white arrow head).

OUTCOME AND FOLLOW-UP

The patient's fever persisted even after admission. Because malignant lymphoma and tuberculosis were considered as differential diagnosis, we suggested an intra-abdominal lymph node biopsy. The patient refused the procedure; hence, 8 days after admission, we performed excisional biopsy of the right submandibular lymph node.

Lymph node biopsy showed partially preserved lymphoid architecture with lymphoid follicles, and paracortical expansion composed of circumscribed foci of apoptotic necrosis with abundant karyorrhectic debris and numerous histiocytes (figure 4). These histiocytes were bland in appearance, including non-phagocytic and phagocytic cells. There was a predominance of CD8 cells over CD4 cells, along with a decreased ratio in the affected areas of the lymph node. The necrotic foci and normal regions were mixed (figure 5).

With consideration for serologically negative of the criteria for systemic lupus erythematosus (negative of dsDNA antibody, Anti-Sm antibody, Antiphospholipid antibody, and Direct Coombs' test; normal complement; positive in a very low titer of anti-nucleotic) histopathology of submandibular lymph node in a young woman with leukopenia led the diagnosis of KFD.

Ten days after admission, the fever resolved spontaneously, and the white cell count and CRP levels improved. Fifteen days after admission, she was discharged. One month after discharge, her superficial lymph nodes were impalpable. A follow-up CT showed disappearance of the intra-abdominal lymphadenopathy (figure 6).

We continue to see this patient at our clinic, and she has been in good health without lymphadenopathy for more than a year.

Figure 3 Contrast-enhanced coronal CT of the abdomen. Lymphadenopathy of the mesenteric, the para-aorta and the para-mesenteric arteries is observed. The lymph nodes were botryoidally clustered, and perinodal infiltration was noted (red circles).

Figure 4 Histopathology finding of the right submandibular lymph node (H&E stain, original magnification ×400 image). There were moderately large plasma cell-like monocytes with eccentric nucleus. Also, there were a large number of apoptotic changes, nuclear debris and phagocytic histiocytes.

DISCUSSION

KFD is a relatively rare, benign and self-limiting disease. The disease duration is about 1–4 months. Many patients are adults <40 years, and a recent report has found a slight gender bias in its occurrence,³ the cause of which is unclear. KFD is characterised by lymphadenopathy, and is often associated with fever. Kucukardali *et al*⁴ reported that lymphadenopathy was present in all cases, and fever (35%), fatigue (7%), joint pain (7%) and erythematous rashes (10%) were frequent clinical findings.

Superficial lymphadenopathy is typically non-tender or mildly tender, rubbery-to-firm and never matted together, with a size ranging from 5 to 40 mm in diameter. Bosch *et al*³ reported that the most frequent site of lymphadenopathy is cervical (56–98%) and more commonly occurs in the posterior cervical triangle (88.5%) and is generally unilateral (88.5%) and localised. Generalised lymphadenopathy has been reported in 1–22% of the cases. Lymphadenopathy in the parotid, axillary, inguinal, mediastinal and intra-abdominal regions has also been reported, but the frequency is unknown.^{3 5 6} Intra-abdominal lymphadenopathy was reported in 2.6–4.3% of the cases.^{6–9}

Twenty-eight cases of KFD involving intra-abdominal lymphadenopathy have been reported in the Japanese and English literature,^{10 11} and are summarised in table 1. In brief, of the 21 cases that reported the presence or absence of superficial lymphadenopathy, 11 had superficial lymphadenopathy. Of the 28

Figure 5 Histopathology finding of the right submandibular lymph node (H&E stain, original magnification ×200 image). A focal necrotic region was also observed.

Figure 6 CT of the abdomen. (A) A CT image on admission. (B) A CT image of 1 month after discharge. The intra-abdominal lymphadenopathy disappeared.

cases, 21 (75%) were diagnosed by intra-abdominal lymph node biopsy, and 8 (28%) by superficial lymph node biopsy.

The differential diagnosis by radiography (CT images) for KFD is broad, and includes many clinically significant disorders such as malignancy, infection (tuberculosis and HIV) and systemic lupus erythematosus. Pathologically, it may be difficult to distinguish KFD from these disorders in some cases.¹²

Because KFD is benign and self-limiting, it would be ideal to avoid the highly invasive excision biopsy from intra-abdominal lymph nodes. A detailed history taking and physical examination can help in the decision-making on whether or not to perform superficial lymph node biopsy.

Table 1 Summary of Kikuchi-Fujimoto's disease involving intra-abdominal lymphadenopathy

Total case	28	(Exclude our cases)
<i>Populations of patients</i>		
Mean age	28.8 (6–63)	
<i>Sex</i>		
Female	14	
Male	13	
No mention	1	
<i>Symptoms</i>		
Abdominal pain		Other symptoms
Present	14	Fever 21
Not present	9	Vomiting 4
No mention	5	Appetite loss 2
		Diarrhoea 1
<i>Lymphadenopathy</i>		
Intra-abdominal*		Superficial
Mesenteric (iliac, iliocolic, coeliac, etc)	16	Cervical 6
Para-aorta	8	Axillary 5
Parapancreatic	3	Inguinal 5
Paracaval, periportal	5	Other 5
Other†		Nothing 8
		No mention 9
<i>Site of biopsy‡</i>		
Intra-abdominal	21	
Cervical	5	
Supraclavicular	1	
Axillary	1	
No mention	1	

*There were cases that had multiple lymphadenopathy.

†Parailiopsol muscle, retroperitoneal, hilus of kidneys, Treitz ligament and gastrohepatic.

‡One case biopsy was performed from two sites, intra-abdominal and cervical.

In our case, CT scan showed intra-abdominal lymphadenopathy in accordance with the site of abdominal pain. Clinically, we suspected KFD owing to her relatively healthy general appearance. However, we had to exclude malignant lymphoma. We performed excisional biopsy from cervical lymph nodes and definitively diagnosed KFD. Her intra-abdominal lymphadenopathy decreased with an improvement in her condition. Thus, we assumed that intra-abdominal lymphadenopathy was also caused by KFD.

To conclude, intra-abdominal lymphadenopathy caused by KFD is relatively rare. However, KFD should be considered in young adults with intra-abdominal lymphadenopathy. Superficial or cervical lymphadenopathy may be present, and minimally invasive superficial lymph node biopsy should be performed in those patients.

Learning points

- ▶ Kikuchi-Fujimoto's disease (KFD) with intra-abdominal lymphadenopathy is rare.
- ▶ KFD should be considered in young adults with intra-abdominal lymphadenopathy.
- ▶ Minimally invasive superficial lymph node biopsy should be performed in those patients.

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Competing interests None.

Patient consent Obtained.

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