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Kikuchi-Fujimoto Disease: A Diagnostic Dilemma

Case Report

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Abstract

Kikuchi- Fujimoto disease (KFD), is one among the rarest diseases amongst the Asian population. It is characterized by fever and sub acute necrotic lymphadenopathy. Commonly seen in young adults but occurs in older age groups also. Cervical lymph nodes are frequently involved. Pathogenesis of the disease is still uncertain. Diagnosis is based on histopathological examination. Differential diagnosis includes infections like tuberculosis, syphilis, infectious mononucleosis, cat scratch disease, autoimmune disease like systemic lupus erythematosus to malignancies like lymphomas. The disease is self limiting with a benign course hence observation is the best way to manage. Minor dosage of antipyretic would provide supportive therapy to the patient. This case report is on Kikuchi- Fujimoto disease (KFD) which was a diagnostic dilemma due to our limited exposure to the disease.

Keywords: Kikuchi-Fujimoto Disease; Lymphadenopathy; Necrotic Lymph Node; KFD.

Introduction

Kikuchi- Fujimoto disease (KFD), is a histiocytic necrotizing lymphadenitis with sub acute necrosis of regional lymph nodes [1]. The disease is benign, self limiting with mild fever. Kikuchi- Fujimoto disease was named after Kikuchi and Fujimoto who first described the disease in 1972 in Asia.(Norris et al., 1996) Clinicians face a diagnostic challenge since the disease has characteristic features similar to many other infectious diseases and lymphomas. The etiopathogenesis is unclear which was suggested as autoimmune or viral. Biopsy reveals apoptotic coagulation necrosis with karyorrhectic debris and the proliferation of histiocytes, plasmacytoid dendritic cells, and CD8+ T cells in the absence of neutrophils are characteristic cytomorphology features. There can be a lot of T cells with predominance of CD8+ over CD4+ T cells.[1] The disease is self limiting and mild dosage of antipyretics proves to be supportive. Here we have a case report on KFD with a brief discussion on it.

Case Report

A 50 year old female patient came to the clinic with the chief complaint of low grade fever, generalized weakness, myalgia and swelling on both the sides of the lower jaw region. Patient reported to the nearby physician and after investigation it was diagnosed as tuberculosis and was under antituberculous drugs for a week. The fever never subsided and the patient went on further investigation. The patient was referred to the dentist to rule out odontogenic causes as there was swelling in the lower jaw. Past medical history revealed no other co-morbidity. No history of toothache except mild pain in the swelling.

On clinical examination, there were two palpable cervical lymph nodes at level II and III measuring 2X2 centimeters which were firm, mobile and tender on palpation. No significant intraoral finding was seen. Patient had already undergone routine blood investigation, chest radiograph, ultrasonography of the cervical lymph nodes and fine needle aspiration cytology.

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Chest radiographs were found to be normal. The blood investigation revealed raised erythrocyte sedimentation rate was 35mm at one hour suggestive of inflammatory disease. There was marginal leucopenia with 3.0thou/microlitre. Marginal variation in hemoglobin and white blood cell count was there but was not contributing to the diagnosis, with all other parameters in normal limits. Ultrasonography revealed enlarged cervical lymph nodes at level II and III. Fine needle aspiration cytology of the nodes were suggestive of necrotizing lymphadenitis (Figure 1).

Computed tomography of thorax, abdomen, pelvis was suggested to check for any other similar lymph node changes elsewhere in the body. Contrast and plain computed tomography imaging was done. It revealed multiple enlarged lymph nodes in numerous levels of the cervical chain involving Ib, IIa,IIb, III, IV, Va, Vb and VI.(Figure 2) Patchy areas of necrosis within the lymph node were seen. For definitive diagnosis biopsy was advised. Biopsy of cervical lymph nodes revealed areas of necrosis in the paracortical region with karyorrhectic debris and presence of plasmacytoid monocytes with crescentic nucleus and foamy histiocytes consistent with necrotising lymphadenitis.(Figure 3) Also confirmed it to be negative for acid fast bacilli, dysplasia and autoimmune disorders.

Correlating the clinical findings and the histopathological finding, the features are characteristic findings of "kikuchi-fujimoto disease". An opinion was taken from a general physician and pulmonologist and they too confirmed the diagnosis. Since the disease is self limiting, the patient was under supportive therapy and regular follow ups at an interval of 15 day. The physicians also consented to discontinue the antituberculous drugs. The enlargements subsided gradually in a period of 3 months and the patient had no signs and symptoms since then.

Discussion

Kikuchi- Fujimoto disease (KFD), was first described by Kikuchi and Fujimoto in 1972 in Japan and considered to be common in Asian population [1]. The disease presents with subacute necrosis of lymph nodes and mild fever. It is prevalent in young adults but can occur at any age. There is no gender prevalence, both men and women are equally affected [3].(Bosch et al., 2004)

Initial studies on pathogenesis stated it was related to viral or autoimmune causes. Later, Yersinia enterocolitica and Toxoplasma gondii were attributed to be the cause but all were disproved. (Feller et al., 1983)[4]. The most widely accepted theory is exaggerated T-cell response in patients with genetic predisposition. HLA class II genes are common in patients with KFD. DPA1*01 and DPB1*0202 alleles seem to be significantly higher in KFD patients [5]. (Tanaka et al., 1999)

Clinical features include mild to moderate fever with chills and lymphadenopathy. Posterior cervical, axillary and supraclavicular lymph nodes are commonly involved. Other associated features could be vomiting, headache, hepatomegaly, splenomegaly and rashes but are relatively rare [6]. (Pepe et al, 2016) Laboratory findings state KFD expresses mild leukopenia and anaemia, increased erythrocyte sedimentation rate and C-reactive protein. Other laboratory findings include elevated serum lactate dehydrogenase and elevated aminotransferases [7]. (Lin, 2003)

Histopathology is the confirmatory diagnostic modality. There are three histologic patterns in KFD. In the initial proliferative phase there is an expanded paracortex with histiocytes and plasmacytoid dendritic cells, small lymphocytes and karyorrhectic nuclear debris. The necrotic phase shows necrosis [8]. (Yen et al., 1997) In the xanthomatous phase, there are foamy histiocytes regardless of presence or absence of necrosis. The histiocytes are positive for lysozyme, myeloperoxidase, CD68, CD163, and CD4. The lymphocytes are CD3- positive T cells with elevated CD8 than CD4 and few CD20-positive B cells. Plasmacytoid dendritic cells are positive CD123 [9]. (Kikuchi et al., 1986)

Differential diagnosis of KFD are infections like Tuberculosis, Histoplasmosis, Leprosy, Cat-scratch disease, Syphilis, Yersinia enterocolitica lymphadenitis, Bacterial lymphadenitis, Herpes simplex lymphadenitis, Infectious mononucleosis. Autoimmune diseases like Systemic lupus erythematosus, Lymphomas, B-cell non-Hodgkin lymphoma (eg, diffuse large B-cell lymphoma), T-cell non-Hodgkin lymphoma (eg. peripheral T-cell lymphoma, anaplastic large cell lymphoma), Classical Hodgkin lymphoma,

Figure 1. Ultrasonograph depicting enlarged lymph nodes.

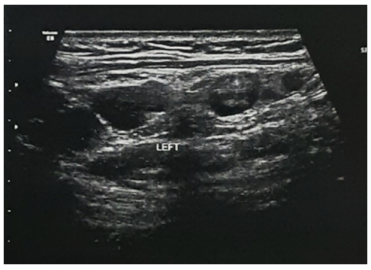
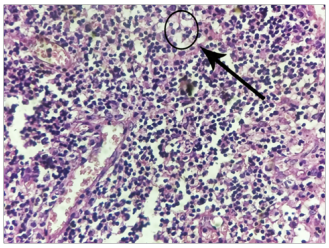


Figure 2. Histopathology revealing necrosis, plasmacytoid monocytes with crescentic nucleus and with foamy histiocytes consistent.



Myeloid sarcoma. Thus it creates a huge dilemma to the clinician. [10] (Pileri et al., 2001)

Conclusion

Kikuchi- Fujimoto disease, imparts a diagnostic challenge as it's a rare entity. The clinical features are also not very specific. The features of these diseases overlap with tuberculosis and tuberculosis being a common disease in India many times it is diagnosed as tuberculosis. Since the disease is self limiting, it resolves by itself but misconceived as it resolved due to anti tuberculous drugs. This case report gives an insight on the importance to rule out Kikuchi- Fujimoto disease in patients with lymphadenopathy and fever.

References

[1]. Anamarija M. Perry, MD; Sarah M. Choi, MD, PhD.Kikuchi-Fujimoto Disease. A Review. Arch Pathol Lab Med-Vol 142, November 2018

[2]. Bosch, X. et al. (2004) 'Enigmatic Kikuchi-Fujimoto Disease', American Journal of Clinical Pathology, pp. 141–152. doi: 10.1309/yf081l4tkywvyvpq.

[3]. Feller, A. C. et al. (1983) 'Immunohistology and aetiology of histiocytic necrotizing lymphadenitis. Report of three instructive cases', Histopathology, pp. 825–839. doi: 10.1111/j.1365-2559.1983.tb02299.x.

[4]. Kikuchi, M. et al. (1986) 'Immunohistological study of histiocytic necrotizing lymphadenitis', Virchows Archiv A Pathological Anatomy and Histopathology, pp. 299–311. doi: 10.1007/bf00708248.

[5]. Lin, H. (2003) 'Kikuchi's disease: a review and analysis of 61 cases', Otolaryngology - Head and Neck Surgery, pp. 650–653. doi: 10.1016/s0194-5998(02)23291-x.

[6]. Norris, A. H. et al. (1996) 'Kikuchi-Fujimoto disease: A benign cause of fever and lymphadenopathy', The American Journal of Medicine, pp. 401–405. doi: 10.1016/s0002-9343(96)00231-8.

[7]. Pileri, S. A. et al. (2001) 'Myeloperoxidase Expression by Histiocytes in Kikuchi's and Kikuchi-Like Lymphadenopathy', The American Journal of Pathology, pp. 915–924. doi: 10.1016/s0002-9440(10)61767-1.

[8]. Tanaka, T. et al. (1999) 'DNA typing of HLA class II genes (HLA-DR, -DQ and -DP) in Japanese patients with histiocytic necrotizing lymphadenitis (Kikuchi's disease)', Tissue Antigens, pp. 246–253. doi: 10.1034/j.1399-0039.1999.540305.x.

[9]. Yen, A. et al. (1997) 'EBV-associated Kikuchi's histiocytic necrotizing lymphadenitis with cutaneous manifestations', Journal of the American Academy of Dermatology, pp. 342–346. doi: 10.1016/s0190-9622(97)80413-6.

[10]. Pepe F, Disma S, Teodoro C, Pepe P, Magro G. Kikuchi-Fujimoto disease: a clinicopathologic update. Pathologica. 2016;108(3):120–129.