



## Kikuchi disease: A Case Report from Himachal Pradesh

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### Abstract

*Kikuchi disease is a self limiting, benign disorder with predominantly supportive therapy, it's important to accurately diagnose with histopathology playing the key role; in order to provide the best patient care and avoid wrongful treatment. We present a case of a young female presenting with matted cervical lymph nodes, in Himachal Pradesh, India which turned out to be Kikuchi Fujimoto disease on lymph node biopsy; despite a clinical suspicion of Tuberculosis.*

**Keywords:** Kikuchi Fujimoto disease, lymph nodes, matted, tuberculosis, necrosis.

### Introduction

Kikuchi-Fujimoto disease (KFD), also known as histiocytic necrotizing lymphadenitis, is an uncommon, self-limited, benign, systemic lymphadenitis of unknown etiology.

In 1972, Japanese pathologists Kikuchi<sup>1</sup> and Fujimoto et al.<sup>2</sup> independently described it as a "lymphadenitis showing focal reticulum cell hyperplasia with nuclear debris and phagocytosis" and "cervical subacute necrotizing lymphadenitis," respectively.

Although KFD was initially thought to occur exclusively in cervical lymph nodes of young Asian women, it has subsequently been noted in patients of all ages, sex, race and occurs at any location. As it has shared clinical features, it's often mistaken for other forms of lymphadenitis, with a misdiagnosis rate of upto 40%.<sup>3</sup> Nearly fifty years later, it continues to pose a difficulties in distinguishing it from other types of lymphadenitis.<sup>4</sup> Thus the importance of an accurate diagnosis and thus treatment cannot be over emphasized.

Very few cases have been reported in India, and the first case was reported in 1998 by Mathew *et al.*<sup>6</sup> We report a case of Kikuchi disease in a young female from the state of Himachal Pradesh, India.

### Case History

A 24 year old female, a native of Himachal Pradesh presented to the General Surgery OPD with complaints of fever and swelling on her neck on the left side.

**On Examination:** several matted, non tender cervical nodes of varying sized were noted on the left side of her neck; however she had no history of past history nor family history of Tuberculosis; which was the initial clinical diagnosis. Rest of her clinical examination revealed no abnormal findings.

**Investigations:** Revealed Microcytic hypo chromic anaemia with absolute lymphocytosis; and an ESR of 300mm/end of 1 hour by Westergren method. Rest of her results were normal.

An ultrasound of the neck correlated with the clinical findings; multiple cervical matted lymph nodes

were noted. A clinical diagnosis of Tuberculosis was kept considering the presentation, test results along with the relatively high prevalence of Tuberculosis patients presenting to our hospital from the state. Chest X-ray done was normal.

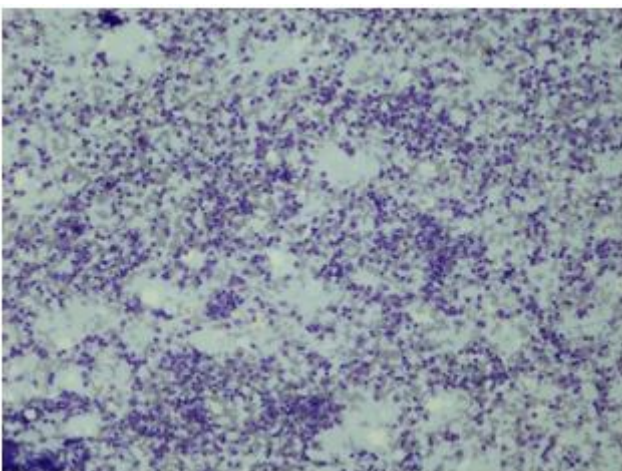
**FNAC:** was done from the lymph nodes, which revealed a polymorphous population of lymphoid cells comprising predominantly of small mature lymphocytes, follicular centre cells, immunoblasts, plasma cells, macrophages and lympho-histiocytic aggregates. The background showed degenerated cells & lymphoglandular bodies along with hemorrhage.

**An Excision Biopsy:** was advised; which however on examination showed a fragmented lymph node biopsy with expanded paracortex with patchy, well circumscribed necrosis showing karyorrhectic debris, fibrin material lined by sheets of histiocytes; with crescentic nuclei & necrotic debris admixed with small lymphocytes, plasmacytoid monocytes & occasional plasma cells. Absence of neutrophils, epithelioid cells & giant cells were noted. This helped to clinch the diagnosis along with ancillary investigations.

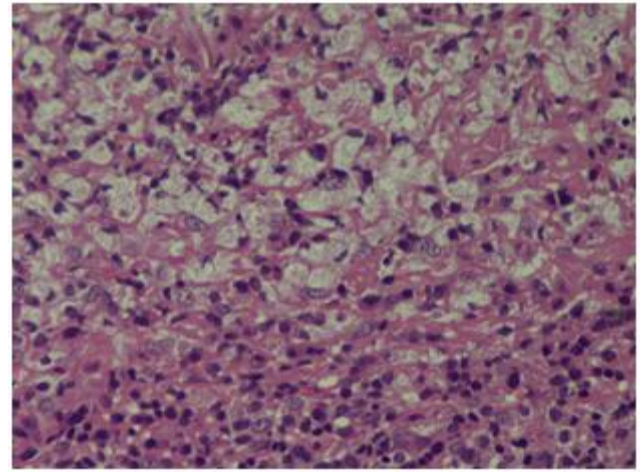
A **Ziehl Neelson** stain was done to rule out Acid Fast bacilli as well; which was negative.

**Immunohistochemical Staining** revealed CD 68 & MPO positive histiocytes, with negativity for CD3 & CD20.

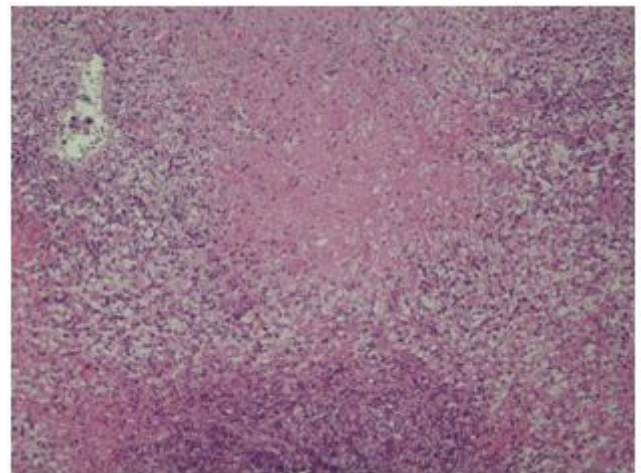
Post report, an ANA testing of the patient was negative, in view of the association with SLE described in literature.<sup>14</sup>



**Fig.1:** FNAC lymph node: polymorphous lymphoid population



**Fig.2:** Sheets of histiocytes with crescentic nuclei



**Fig.3:** Well circumscribed patchy necrosis

### Discussion

While the cause of KFD remains unexplained, it has been considered to be a form of a benign reactive hyperplasia of lymph nodes.<sup>4</sup>

Kikuchi disease is thought to be due to hyperimmune response of T-cells, activated by unidentified pathogen infectious, chemical, physical, and neoplastic agents.<sup>9</sup>

Apoptotic cell death induced by cytotoxic T-cells produces the characteristic histo-morphology in Kikuchi disease, the proliferating cells in Kikuchi disease are cytotoxic CD8 positive cells which themselves undergo apoptosis.<sup>9</sup> Plasmacytoid monocytes or plasmacytoid T-cells are a striking histopathologic finding in Kikuchi disease; which are pre-dendritic cells expressing immature dendritic cell markers such as CD1c, CD303, and CD123 & depending on micro-environmental stimuli they differentiate into potent antigen-presenting cells.<sup>10</sup>

The clinical manifestations of KFD are primarily fever and lymphadenopathy. The common symptoms are as follows: (a) fever with a body temperature fluctuated at 38 ~41°C (some patients with mild chills), lasting 4 to 6 weeks; (b) superficial lymph nodes, mainly in the neck, with a diameter of 0.5 to 3 cm; (c) congestive maculopapular rash, commonly in the trunk, limbs and cheeks with the skin being mildly edematous and itchy; (d) mild hepatosplenomegaly with around 0.5 to 2 cm enlargement of the liver.

Since similar symptoms are noted in diseases such as lymphomas, an accurate diagnosis & thereby treatment is essential and to be kept in mind.<sup>5</sup>

The involvement of mediastinal, peritoneal, and retroperitoneal regions are uncommon. Extranodal involvement of Kikuchi disease is rare; has been documented in the skin, bone marrow, myocardium, & central nervous system.<sup>7</sup>

Some points worth noting are that:

(a) long-term fever persisting after antibiotic treatment; (b) large superficial lymph nodes, but little/no sign of hepatosplenomegaly and (c) negative results from blood test and bone marrow culture. The disease is often misdiagnosed as neoplastic (eg.: Non Hodgkin Lymphoma) or infectious diseases ( eg.: Tuberculosis, Cat Scratch Disease) or associated with other disorders like SLE, sarcoidosis & viral lymphadenitis.<sup>5</sup>

Diagnosis of Kikuchi's disease is confirmed by histopathological examination of biopsied specimen of lymph node; Three types of findings are identified: proliferative, necrotizing and xanthomatous. The proliferative features are seen in one-third of cases with an inflammatory infiltrate; half of cases show necrotizing pattern and rare xanthomatous type; with abundant foam cells.<sup>8</sup> The characteristic histological features include lymph nodes with multifocal paracortical necrosis, pyknotic nuclear debris, proliferating histiocytes, and plasmacytoid dendritic cells. Different patterns described are necrotic, foam cell, and proliferative. Most common pattern being necrotic, characterized by paracortical necrosis with crescentic histiocytes. The different patterns could be the different stages of the disease

starting with a proliferative to necrotic and phagocytic phases and resolving with foamy pattern.<sup>11,12,13</sup>

Other features include presence of lymphocytes, plasmacytoid monocytes, macrophages, and immunoblasts. Immunohistochemistry shows CD68-positive macrophages, CD8- and CD4-positive T-cells, and CD123-positive plasmacytoid dendritic cell infiltrate.<sup>7,9,11</sup>

Useful tests include ruling out Tuberculosis, Warthin Starry staining for Bartonella, and hematoxylin bodies along with other tests for SLE.<sup>5</sup>

Generally KFD is a benign, self-limiting disorder, so a short inpatient stay with symptomatic treatment generally suffices; but patients with significant systemic symptoms may need appropriate drugs, hormones & immunosuppressants to manage and assist recovery.<sup>5</sup>

### Conclusions

The high prevalence of Tuberculosis in India and particularly in Himachal Pradesh must not lead to a wrongful diagnosis and therapy; nor wastage of time and resources; keeping this disease in mind will lead to the accurate diagnosis following an excision biopsy & the correct treatment choices.

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