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KIKUCHI-FUJIMOTO DISEASE: CASE REPORT AND REVIEW

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ABSTRACT

OBJECTIVE: The development of associated febrile to lymphadenomegaly leads to several diagnostic hypotheses, among them the Kikushi-Fujimoto disease.
METHOD: This review was set up by searching PubMed/Medline, Web of Science and Scopus database using the following key words:"Kikushi disease", "Kikuchi-Fujimoto disease", "histiocytic necrotizing", "lymphadenitis", "lymphadenopathy".
RESULTS: We report a case in a young patient with a fever associated with the emergence of adenomegalies and weight loss in two months, associated with hepatosplenomegaly. In laboratory tests showed anemia with erythrocyte sedimentation rate (ESH) and lactate dehydrogenase (LDH) test elevated, widened mediastinum, with bilateral pleural effusion.
CONCLUSION: Excisional biopsy of supraclavicular lymph node showed Kikuchi-Fujimoto disease on microscopic examination. After histopathological confirmation, were other causes of febrile adenomegalias apart, starting dose corticosteroid immunosuppressive therapy.

INTRODUCTION

Kikuchi's disease, also called Kikuchi-Fujimoto disease or Histiocytic Necrotizing Lymphadenitis, was originally described in young women. Is a rare pathology, of unknown cause, benign, generally characterized by cervical lymphadenopathy and fever. The histopathological examination of the lymph nodes involved differentiates Kikuchi disease of other more serious conditions.

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Although the pathogenesis of Kikuchi disease is unknown, the clinical presentation is clear, and histological changes suggest an immune response of T cells and histiocytes to an infectious agent. Numerous agents urging the sickness have been proposed, including the Epstein Barr Virus (EBV) (Yen *et al*., 1997; Hudnall, 2008), Human Herpes virus type 6 and 8 (Huh *et al*., 1998), Human Immunodeficiency virus (HIV), Parvovirus B19 (Yufu *et al*., 1997), paramyxovirus, parainfluenza viruses, *Yersinia enterocolitis*, and Toxoplasma[3]. Apoptotic cell death mediated by CD8 + cytotoxic T lymphocytes positive is the main mechanism of cell destruction (Iguchi *et al*., 1998; Ohshima *et al*., 1998; Ura *et al*., 1999).

Although initially described in young women, the Kikuchi disease clearly also occurs in men. The proportion of men and women affected in three reviews was 1:4, 1:1,6 and 1:1,26, always with a predominance of women affected (Dorfman, 1988; Asano *et al*., 1990; Lin *et al*., 2003). Most patients are under 40 years of age (Tsang *et al*., 1994; Lee *et al*., 2004; Payne, 2003; Ray *et al*., 2013). The most common clinical presentation of the disease are fever and cervical lymphadenopathy in a previously healthy young patient. Fever, usually low and persisted for about a week is a primary symptom in 30 to 50% of patients (Dorfman, 1988).

METHODS

This review was set up by searching PubMed, Web of Science and Scopus database using the following key words:"Kikushi disease", "Kikuchi-Fujimoto disease", "histiocytic necrotizing", "lymphadenitis", "lymphadenopathy".

Case report

Woman, 20 years old, he began to rub the frame with symmetrical fists, knees and ankles and daily 39^{o}C fever. Two months after the onset of symptoms, cervical tumor arose and painful. Associated to the feverish, she referred 7% of body weight in two months. Was admitted to the hospital with the symptoms described, showing Traube' space busy with splenomegaly (4cm of the costal edge left), hepatomegaly (6cm from the costal edge right) and generalized lymphadenopathy (axillary, supraclavicular chains left and cervical inguinal), being the largest lymph node found in the cervical region left measuring 06cm in your larger diameter, fibroelastic, painful, not acceded to plans. The laboratory tests revealed hemoglobin 9.2 g/dL; hematocrit 26.3%; leukocytes 3900/mm³ with 84% segmented and 8% of lymphocytes; 119000 platelets/mm³; erythrocyte sedimentation rate (ESR) 110 mm; 1.7 mg creatinine/dL; total protein 5 g/dL; albumin 2,4g/dL; AST 220 U/L; ALT: 79 U/L, GGT: 247 U/L, LDH:2046 IU/Ml; alkaline phosphatase 551 U/L, 0,6% reticulocytes and direct Coombs test negative. The serology for hepatitis B, C and HIV negative. Had anantinuclear factor (ANF) profile with core: no reagent; metaphase chromosomal plate reagent and antibody ribonucleoprotein no reagent. The chest x-ray showed a widening of the mediastinum, pleural effusion and bilateral pulmonary consolidation right. Antibiotic therapy was initiated with Cefepime for 8 days. During the diagnostic investigation was prompted computed tomography (CT) of total abdomen whose result revealed moderate ascites and lymphadenopathy in the various chains of retroperitoneal and bilaterally iliac lymph nodes. The chest CT evicted small bilateral pleural effusion, with atelectasis, mediastinal lymphadenopathy, bilaterally axillary and left supraclavicular region. Held left supraclavicular lymph node biopsy, showing histolytic necrotizing lymphadenitis compatible with Kikuchi-Fujimoto disease, represented in figures 1-4. Corticotherapy began in dose immunosuppressive therapy for 21 days. Evolved with dramatic improvement of the clinical picture, improvement of joint pain and significant reduction of adenomegalies.

DISCUSSION

We report a case of Kikuchi-Fujimoto disease. The actual incidence of this disease is estimated at between 0.5% and 5% of all analyzed histologicallylymph;

Not found any infectious microorganism (virus or bacteria) to the case reported, but it is possible that the antigenic stimulus has been triggered by one of these (Infante *et al*., 2007).

Clinical condition

After reviewing the literature on the topic, it was found that the most common symptoms were fever (35%), fatigue (7%) and joint pain (7%) (Kucukardali *et al*., 2007). The most common clinical and laboratory findings were lymphadenopathy (100%), rash (10%), arthritis (7%), hepatosplenomegaly (3%), leukopenia (43%), high sedimentation rate (40%) and anemia (23%) (Kucukardali *et al*., 2007). Systemic symptoms may accompany fever and lymphadenopathy and seem to be more prominent in patients with extranodal involvement[17]. Systemic symptoms include: night sweats, nausea, vomiting, weight loss (by about 10%) and diarrhea (Infante *et al*., 2007; Kucukardali *et al*., 2007; Kuo, 1990). A variety of other symptoms and physical signs occur sporadically in patients with Kikuchi disease. These include chills, myalgia, arthralgia, pain in the chest and abdomen, splenomegaly and hepatomegaly, which may be associated with abdominal lymphadenopathy, as was evidenced in the case reported (Dorfman, 1988). The involvement of lymph nodes is usually cervical and located in Kikuchi disease (Kuo, 1995). The nodules are moderately increasedin diameter (1-2cm), but occasionally are higher (≥ 7cm) (Kuo, 1995). They are typically firm, fibroelastic, discreet and furniture. The increased lymph node is often associated with a mild pain (Kuo, 1995). The increase in size of the mediastinal lymph nodes is minimal and only, however retroperitoneal nodules may be involved (Norris *et al*., 1996; Bailey *et al*., 1989). The diagnosis is unlikely to be confirmed until the completion of lymph node biopsy in such patients that present with fever of unknown origin.

Laboratory tests

Most patients with Kikuchi disease have a normal blood count[8] (Dorfman, 1988), even though leukopenia is observed in 20-32% (Asano *et al*., 1990; Song *et al*., 2007). Atypical lymphocytes are reported in up to 25% of patients (Kuo, 1995). Other less common findings include thrombocytopenia, pancytopenia, and, in those with severe disease, chronic anemia (Yen, 1997; Smith *et al*., 1992). The erythrocyte sedimentation rate can be normal, but was elevated to more than 60 mm/h in 70% of patients in a series (Norris *et al*., 1996). Other non-specific findings may include slightly abnormal liver function tests and high levels of lactate dehydrogenase (Bailey, 1989). Antinuclear antibodies (ANA), rheumatoid factor, lupus erythematosus and preparations are generally negative. Some patients initially diagnosed with Kikuchi disease presented later systemic lupus erythematosus (SLE) (Kuo, 1995; Patra, 2013). The FAN should be performed in patients with suspicion of Kikuchi disease that have features suggestive of LES to delete such a diagnosis. A study describes transient elevation anti-DNA antibody levels of protein anti-ribonuclear (Asano, 1990).

Diagnosis

Diagnosis of the disease of Kikuchi-Fujimoto is made by lymph node biopsy. The biopsy should be performed, despite the self-limiting nature of this syndrome in order to rule out more serious conditions that require aggressive therapy such as

lymphoma. Kikuchi disease patients were diagnosed as having lymphoma treated with cytotoxic agents, when doctors and pathologists still did not know in detail this entity (Dorfman *et al*., 1988). Other pathologies that were confused with Kikuchi disease tuberculous adenitis, venereum lymphogranuloma and Kawasaki disease (Mital *et al*., 2009; Dorfman, 1974; Nieman, 1990). Though excisional biopsy is often recommended because it often breaks up a framework of lymphoma, the fine needle aspiration is increasingly useful in the hands of experienced pathologist, using colors and cell block preparations, allowing diagnosis (Tsang, 1994; Mannarà, 1999).

Pathology

The histology of the lymph node in Kikuchi-Fujimoto disease can easily be differentiated from more well-known infectious conditions in the differential diagnosis of fever and Lymphadenopathy (Dorfman, 1988; Asano, 1990; Lin, 2003; Tsang *et al*., 1994 and Atwater *et al*., 2008). Yellow necrotic foci can hardly be noticed in the cutting surface of the nodule. Microscopic examination shows usually outbreaks paracortical with necrosis and cellular infiltrate histiocytic. These outbreaks can be single or multiple. The capsule can be infiltrated and perinodal inflammation is common. The necrotizing process is often confined to circumscribed areas of fibrinoid Eosinophilic material with irregular distribution of fragments of rubble nuclear (Tsang *et al*., 1994).

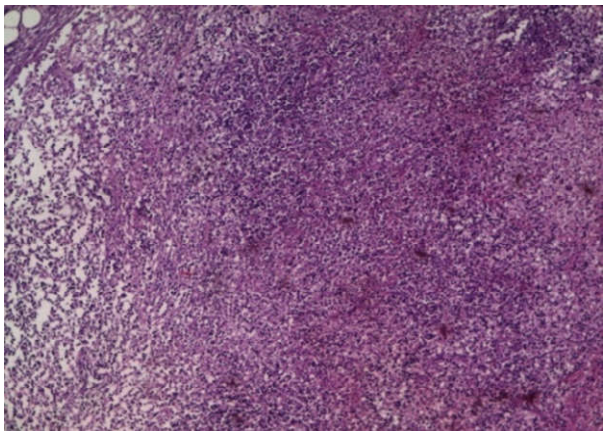

Figure 1. Axillary lymph node blade, representing necrotizing lymphadenitis with nuclear fragmentation and reactive hyperplasia - Image with a magnification of 100x

The histological appearance changes as the disease progresses. Early biopsies on "proliferative phase" show follicular hyperplasia and paracortical expansion by T cells, B cells and monocytes and miscellaneous plasmacytoids histiocytes with numerous deep down apoptosis (Ohshima *et al*., 2004). In "the proliferative phase," the presence of several blastic cells raises the differential diagnosis of lymphoma, infection with Epstein Barr virus (EBV), and herpes simplex infection. The preservation of nodal architecture, the mole, and polyclonal immunohistochemistry negative viral conditions exclude (Ohshima *et al*., 2004). Subsequent biopsies on "Necrotizing phase" have shown without a neutrophilic infiltrate necrosis associated with the domain of histiocytes. The histiocytes often have nuclei in growing and contain dendrites phagocytosed. Immunohistochemical staining shows positive monocytes plasmacytoids and CD68 histiocytes with predominantly CD8 positive T lymphocytes (Ohshima *et al*., 2004).

The absence of neutrophils in "Necrotizing phase" is useful to distinguish this condition from LES and drug-induced lymphadenopathy.

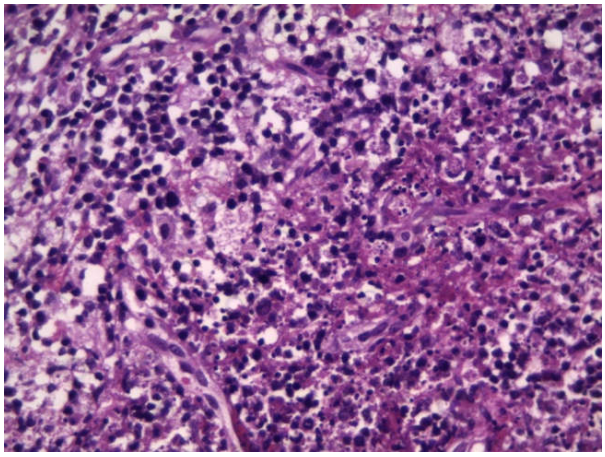

Figure 2. Axillary lymph node blade, representing necrotizing lymphadenitis with nuclear fragmentation - Image with magnification of 400x

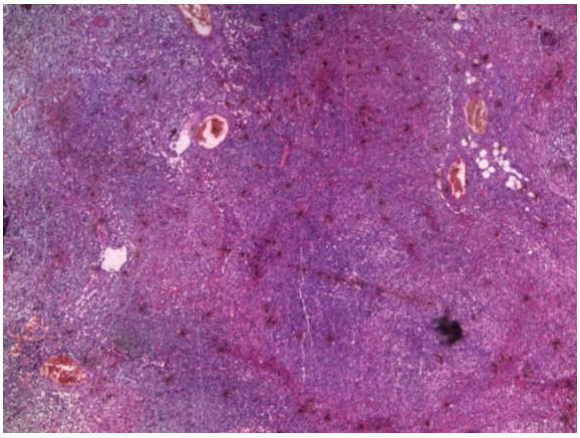

Figure 3. Axillary lymph node blade, representing necrotizing lymphadenitis with nuclear fragmentation and reactive hyperplasia - Image with magnification of 50x

Differential diagnosis

The differential diagnosis of the histological point of view includes LES, herpes simplex and lymphoma (non-Hodgkin's lymphoma and Hodgkin's Lymphoma). In the LES, bodies of hematoxylin and plasma cells are also seen. In herpes simplex, there are fewer surrounding mononuclear cells and neutrophils are normally present. In contrast to the Kikuchi disease, necrosis associated with Hodgkin's lymphoma usually includes neutrophils and large atypical cells (cell variants of Reed-Sternberg cells), positive for CD30, CD15, CD45. It is suggested that the plasmacytoids dendritic cells infiltrate in lymph nodes with higher frequency in Kikuchi-Fujimoto disease when compared to any other reactive lymphadenitis or B or T cell lymphoma, regardless of the size of the lesion. Thus, the predominance of plasmacytoids dendritic cells can be a useful indicator in the diagnosis of hepatological disease of Kikuchi (Kishimoto *et al*., 2010).

Radiology

Computed tomography (CT) of the affected lymph nodes typically demonstrates perinodal infiltration (81%) and homogeneous enhancement (83%) (Kwon *et al*., 2004). On ultrasound, the lymph nodes can present radiological features of malignancy (Youk *et al*., 2008).

Treatment

No effective treatment for the disease has been established of Kikuchi-Fujimoto to the present. The signs and symptoms usually disappear within one to four months. Patients with severe or persistent symptoms are treated with high-dose glucocorticoids associated with intravenous immunoglobulin, or not showing results apparently promising (Jang *et al*., 2000; Lin *et al*., 2010). There have been reports of success in the treatment of recurrent disease of Kikuchi-Fujimoto with hydroxychloroquine (Rezai *et al*., 2004). Affected patients should be followed for a few years because they may be affected of LES and relapses of the disease of Kikuchi-Fujimoto are applicants for several years, after a first episode of disease (Smith *et al*., 1992; Patra *et al*., 2013; Mital *et al*., 2009; Dorfman, 1974; Nieman, 1990).

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