Report of Kikuchi-Fujimoto Disease in a 12yr old Caucasian Male

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Citation

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Abstract

This case reports a rare disease known as Histiocytic Necrotizing Lymphadenitis or Kikuchi-Fujimoto Disease. This rare, self-limiting disease is not characteristically found in Caucasians. This case is of a 12yr old Caucasian male, referred for surgical review after a presumptive diagnosis of a strangulated inguinal hernia. Subsequent examination revealed a tender, erythematous swelling in his groin and exploratory surgery revealed reddish-brown inguinal lymph nodes. Excision relieved the patient's symptoms and returned a histopathological diagnosis of Histiocytic Necrotizing Lymphadenitis or Kikuchi-Fujimoto Disease. The patient was subsequently discharged and it was arranged on the advice of pathology that he be referred to a paediatric haematologist for continued follow-up to rule out potential serious pathologies such as lymphoid or blood-borne malignancies. This case report hopes to raise clinician awareness of this rare disease, to consider surgical service delivery and support available in rural areas and reaffirm the need for exploratory surgery when appropriate.

INTRODUCTION

Histiocytic Necrotizing Lymphadenitis or Kikuchi-Fujimoto Disease (KFD) is a rare hisitiocytic, self-limiting disease of the lymph nodes. KFD was first described in 1972 in Japan by Kikuchi and Fujimoto respectively.[1] KFD is normally thought to occur in young women only, however the preponderance is approx. 1:1. It is particularly prevalent in those of Japanese and Asiatic descent.[1-3] However, KFD is now being reported in non-asiatic patients with the true incidence of this disease still unknown.[4] It is an idiopathic, but usually benign and self-limiting disease.[5] The lymph nodes characteristically affected are cervical, but regional lymphadenopathy has been reported. The lymphadenitis displays a focal proliferation of reticular cells accompanied by numerous histiocytes and extensive nuclear debris.[2] However, KFD remains a largely unknown disease in Western and non-asian populations.

The pathogenesis of KFD is unknown, but Yersinia enterocolitica, Toxoplasma gondii, EBV, HIV, CMV and Parovirus B19 have been named as possible causative agents.[2, 6-8] KFD may also be caused by hyperimmune hosts, such as an exuberant T cell–mediated response in those genetically susceptible to a variety of non-specific stimuli.[2] KFD usually has an acute or sub-acute progression (2-3 weeks), presenting primarily with lymph node swelling (mostly posterior cervical triangle) and with 59% reporting the swelling as being tender.[2] Leucopaenia is also present in approximately half of all cases.[7]

Usually, supportive measures are all that are required, but there have been reported cases in which concurrent courses of corticosteroids were also used.[2, 7] The major significance of KFD is that it can mimic more serious diseases such as SLE-associated lymphadenopathy, Herpes Simplex-associated Lymphadenopathy, Non-hodgkin Lymphoma, Plasmacytoid T-cell Leukaemia, Kawasaki disease, nodal colonization by Acute Myeloid Leukaemia and Meatastatic Adenocarcinoma.[2] It is therefore essential that these more sinister pathologies are ruled out early (usually a bone marrow biopsy is required for confirmation).[2, 7, 8] Rarely, fatalities from KFD have been reported.[9]

CASE DESCRIPTION

The patient was a 12yr old Caucasian male who was referred to a district hospital with the presumptive diagnosis of a strangulated inguinal hernia. He is normally well, takes no regular medications, having allergies to both ant-bites and wasp-stings. His vital signs were normal and he was afebrile. He had began to complain of pain in his right groin shortly after waking that morning. He revealed a minor injury several days prior whilst playing cricket, but it was felt not significant. He had earlier felt nauseated, but had not

vomited. He was anorexic on review and was unable to mobilize secondary to pain.

Physical examination was unremarkable except for a swelling (approx. 2 x 2cm) in his right inguinal region, with a non-fluctuant, slightly erythematous mass inferior and lateral to the inguinal ligament. This swelling was exquisitely tender, producing tears and withdrawal on light palpation. The remainder of the physical examination for both appendicular pathology and an acute scrotum were negative. He had nil cutaneous damage to his right leg, and denied previous insect-bites, etc. Pain relief was given whilst further tests were arranged.

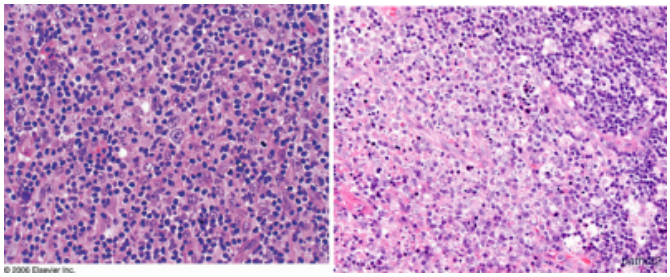
A presumptive diagnosis of a strangulated hernia (unlikely) or infected lymph node was made and blood tests and ultrasound imaging requested. Blood tests were normal, except for an Alkaline Phosphatase of 175mol/L (not uncommonly high in children).[10] Full Blood Count, including differential white cell count was normal. Unfortunately, ultrasound was unavailable and discussion with the patient's parents resulted in the decision to proceed with exploratory surgery.

Surgical exploration was uneventful for hernias, but revealed several abnormal looking lymph nodes. The lymph nodes were of a reddish-brown colour and were slightly enlarged and rubbery in texture. It was thought intra-operatively that the nodes might have been reactive, necrotic or potentially lymphomatous. The patient proceeded to have an uneventful post-operative recovery, becoming pain-free relatively quickly and mobilizing on the day following surgery. Flucloxacillin and non-steroidal analgesia was given peri-operatively and the patient was discharged on the second post-operative day.

Subsequent tissue pathology reported multiple fragments of fibrofatty tissue. On histopathological analysis, these lesions demonstrated lymph node tissue with areas of necrotising inflammation with these areas surrounded by inflammatory cells (no granulomas or multinucleated giant cells observed). There was an interfollicular polymorphous proliferation of immunoblastic cells and reactive lymphoid cells. These features were suggestive of necrotising lymphadenitis. Other aetiologies included cat-scratch disease or lupus lymphadenitis. At this stage second pathological opinion was sought, with further staining completed. Immunoperoxidase staining showed an atypical infiltrate being compromised of T-lymphocytes, positive for CD2 and CD3. There were also a number of cells staining positive for CD4, but this was difficult to confirm in the presence of numerous histiocytes. A population of cells also stained positive for CD8. CD10 and EBV were negative. Histomorphology showed disrupted architecture and heavy perivascular infiltrate and necrosis. In reactive conditions, as would be expected, the pale cells noted should be monocytoid B-cells. However, these pale cells were T-cells and demonstrated an angiotrophic pattern of infiltration, raising the likelihood of an atypical lymphoproliferative process. The patient remained asymptomatic and was referred to a Paediatric Haematologist who arranged for CT and PET scans, serial bloods tests and to be further followed-up every 3 months for the next 2yrs. The patient has not undergone a bone marrow biopsy at this stage. Figure 1 below shows histological images demonstrating both Diffuse Large B-Cell Lymphoma and Histocytic Necrotizing Lymphadenitis.

Figure 1

Figure 1: Histological images demonstrating both Diffuse Large B-Cell Lymphoma and Histiocytic Necrotizing Lymphadenitis.



DISCUSSION

This case highlights the difficultly of contemporary rural medical and surgical practice. The case was also complicated by the history of the patient's presenting complaint, with the literature describing a less acute process and with the lymphadenopathy occurring primarily in the cervical region. The patient had been systemically well leading up to hospitalisation, with a vague history of trauma being the only precipitating aetiology. However, the mass on examination was exquisitely tender, more than expected with an infected lymph node. The bloods were also normal and due to the unavailability of ultrasound services to confirm or refute a hernia, exploration was required. This case was significant in the fact that KFD is a rare disease and unique differential in itself and has atypically presented in the inguinal lymph nodes. It has also not been reported as being this tender in the previous literature. The other aetiology not previously mentioned in the literature was that of trauma. It may be possible that a traumatic process has been

responsible, or exacerbated an otherwise sub-threshold form of disease. With this clinical and logistical combination, exploration provided the safest path by not exposing a young child to high-dose radiation initially.

The removal of the offending lymph nodes relieved the patient's pain and reduced the need for further immediate medical testing or surgical intervention. The retrieval of this tissue may also help aid a diagnosis of a more sinister disease if initial histological has not been accurate. Earlier diagnosis will allow for earlier intervention, vital when dealing with possible blood-borne or lymphoid malignancies. This case will also hopefully elevate awareness of this rare disease as a possible differential diagnosis amongst clinicians for lymphadenopathy and highlight the difficultly faced when modern imaging modalities are unavailable.

This case also reports KFD, a disease that is not routinely observed in Caucasian populations. This case also demonstrates an unusual and atypical history preceding the. On submission of tissue for histopathological analysis, there was also considerable discussion between the reviewing pathologist with second opinion sought and with the immediate following recommendation advising paediatric haematology follow-up. A review of Australian and Western literature also found a paucity of information relating to KFD. This is very surprising given Australia's close geographical location to and the frequency of travel to Asia. The only Australian mention found was from 1986 by Chan and Saw with a review of 9 KFD cases. However, this work actually originated from Hong Kong.[13] With travel so prevalent it is extremely important to appreciate diseases which can occur as common presentations, especially in children, such as a swollen, painful lump.

CONCLUSION

Sharing of this case will hopefully elevate consideration of this disease as a differential amongst clinicians and pathologists. It may also, when circumstances are appropriate, lower the threshold for exploratory surgery in certain patients and presentations. Identification of KFD may also allow clinicians and pathologists to rule out more sinister pathologies at an earlier stage, allow for earlier intervention, encourage new methods of diagnosis and to enhance healthcare delivery to patients faced with the psychological distress associated with a differential diagnosis of a potential malignancy.

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