

Sinus Histiocytosis with Massive Lymphadenopathy (Rosai Dorfman's Disease): A Rare Cause of Lymphadenopathy in Children

Nandlal Kella, Prem Kumar Rathi and Shankerlal Rathi

ABSTRACT

Sinus histiocytosis with massive lymphadenopathy also called as Rosai-Dorfman's disease is a benign self limiting rare histiocytic disorder with very few case reports in Pakistani literature. This case report describes a young boy of nine years age who presented with progressive, asymptomatic bilateral cervical lymphadenopathy for eight months. Open cervical lymph node biopsy confirmed the diagnosis on classical histopathological features. As the patient was asymptomatic, we kept him on observation, with follow-up. He shown remarkable reduction in cervical lymphadenopathy.

KEY WORDS: Sinus histiocytosis. Lymphadenopathy. Children. Gammopathy. Rosai Dorfman's disease.

INTRODUCTION

Sinus histiocytosis with massive lymphadenopathy (SHML) is a benign, self limiting condition of unknown etiology.¹ It was first reported by Rosai and Dorfman in 1969 as a histopathological entity of macrophage related histiocytic disorder.² It consists of chronic massive enlargement of cervical lymph nodes, frequently accompanied by fever, leucocytosis, elevated erythrocytes sedimentation rate (ESR) and hyperglobulinemia.³ Lymph nodes other than cervical may be involved and the involvement of extra nodal sites is not uncommon.⁴ Although elevated titer of antibodies against some viruses has been found, but this as an etiological factor is not proved. It is a non-familial disease. To date, neither a genetic nor an etiological factor has been identified.

CASE REPORT

A nine years old boy with bilateral cervical lymphadenopathy for eight months and fever for two months was referred to department of Pediatric Surgery, Liaquat University of Medical and Health Sciences Jamshoro. Lymphadenopathy was progressive in nature and was associated with low grade fever. There was no history of dysphagia, dyspnea, weightloss and

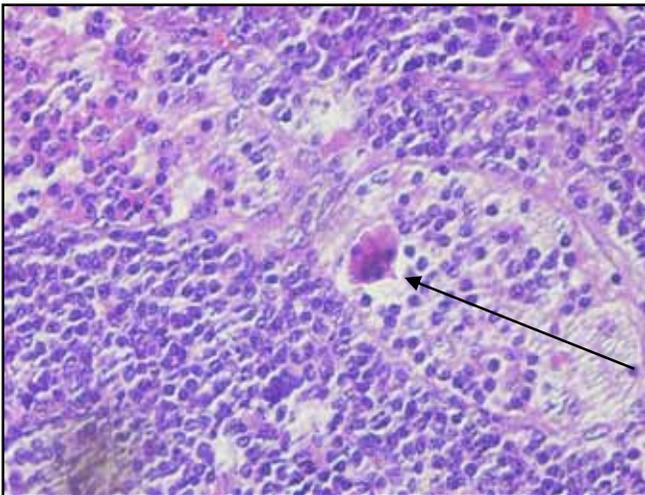
night sweats. Clinical examination revealed a healthy male child with massive bilateral cervical and submandibular lymphadenopathy extending to the midline of neck (**Figure I**). The lymph nodes were non-tender, firm, non-matted, non-mobile and multiple in number with variable sizes. Other lymph nodes were not palpable and there was no visceromegaly.

Complete blood picture showed hemoglobin 11.5 g/dl, white blood cells count 11300/mm and ESR 40mm in 1st hour. Total proteins were 7.6 g/dl, albumin 3 gm/dl and globulin 4.6 g/dl. Peripheral blood smear showed no blast or immature cells, X-ray chest and abdominal ultrasonography were normal. Cervical open lymph node biopsy showed partial loss of architecture, markedly dilated sinus filled with histiocytes with foamy cytoplasm (**Figure II**). There was also phagolymphocytosis and anisonucleosis without evidence of malignancy. Immunoreactivity to S-100 protein was positive. With the classical features of massive lymphadenopathy and sinus histiocytosis on histopathology, a diagnosis of sinus histiocytosis with massive lymphadenopathy (SHML) or Rosai Dorfman's disease was made. Since the patient was asymptomatic, he was kept on observation with eight months regular follow-up. He showed remarkable recovery from lymphadenopathy.

**FIGURE I:
SHOWING MASSIVE CERVICAL LYMPHADENOPATHY**



**FIGURE II:
HISTOLOGICAL VIEW SHOWING PHAGOLYMPHOCYTOSIS**



DISCUSSION

Sinus histiocytosis with massive lymphadenopathy (Rosai Dorfman's disease) is a rare benign lymphoproliferative disorder and a rare cause of childhood lymphadenopathy.³ It can affect any age group but 80% of patients are in first two decades of life with male preponderance. Its etiology is still obscure but two hypotheses have been proposed: a disturbance in cell mediated immunity and viral infection.² Although raised antibodies titer to some viruses has been found, but evidence is lacking to make them responsible as causative organism.³ Molecular studies have

found no evidence of clonal rearrangement implying that this disease is reactive rather than neoplastic. Immunoreactivity of histiocytes for S-100 protein and CD-68 are suggestive of cell mediated immunity disorder.⁵ To date no etiological, genetic and familial correlation has been identified.³ Massive cervical lymphadenopathy is a hallmark of this condition, which is mostly progressive and painless; sometime behaves aggressively due to pressure on trachea and esophagus leading to morbidity and even mortality.² Most common differential diagnoses of massive lymphadenopathy are lymphoma and tuberculosis of lymph nodes. Involvement of other lymph nodes and extra nodal sites is not uncommon. Extra nodal sites commonly involved are central nervous system, eye lids, skin², orbit⁶, skeletal system⁷, maxillary sinuses and salivary glands. Surprisingly, spleen and bone marrow are spared.⁸ Fever, elevated ESR, neutrophilia and polyclonal gammopathy are associated problems which were also present in this case. A conclusive diagnosis of SHML can be based on cytology, provided the cytological findings are interpreted in the appropriate clinical context.¹ Doppler ultrasound has been attempted for different types of lymphadenopathy but there is no specific ultrasound feature to characterize the lymphadenopathy of different etiologies.⁹ The ultrasound is helpful for fine needle aspiration for more accurate pathology. The histopathology is very characteristic with partial loss of architecture of lymph node, massive dilatation of sinuses filled with histiocytes, vesicular nuclei with abundant foamy cytoplasm⁶ and lymphophagocytosis. The S-100 protein stain is helpful in identifying the histiocytes of SHML particularly in lymph nodes and extra-nodal sites. Langerhans cells histiocytosis may manifest primarily in lymph nodes with distension of sinuses with Langerhans cells with smaller nuclei frequently irregular and folded with a central groove. Lymphophagocytosis is not a feature of Langerhans cells but erythrophagocytosis may be a feature. Natural course of disease is variable. Up to now, no specific protocol of treatment has been established. Being a benign self limiting condition reliance on spontaneous resolution is supposed to be the main therapy.¹⁰ We preferred this modality because patient was asymptomatic and kept on observation, and during his eight months follow-up, he had shown approximately 70% reduction in the lymphadenopathy mass. Treatment may be required when there is threat to life or unacceptable morbidity. The treatment modes include corticosteroids⁶, chemotherapy, radiotherapy, low dose interferon, combinations of therapies and surgery.² Literature review showed that there are temporary benefits from different modalities and recurrence rate is very high.⁴ In case of cervical lymphadenopathy causing dysphagia

and dyspnoea, debulking is indicated but spontaneous resolution is expected in most cases. This disease is of multifactorial origin, needs intense research to understand the exact nature of the disease.

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