JMSCR Vol||05||Issue||11||Page 30336-30340||November 2017

www.jmscr.igmpublication.org
Impact Factor 5.84
Index Copernicus Value: 71.58
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: https://dx.doi.org/10.18535/jmscr/v5i11.88

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

Rosai Dorfman Syndrome (Sinus Histiocytosis with Massive Lymphadenopathy)

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Abstract
Sinus histiocytosis with massive lymphadenopathy (Rosai Dorfman disease) is an uncommon benign condition, often confused with lymphoma. Patients usually have massive enlargement of cervical lymph nodes. We describe here a 63 year old male patient who presented with generalised massive lymphadenopathy & tonsillar enlargement. His histopathology report was suggestive off Sinus histiocytosis with massive lymphadenopathy. He was started on low dose steroids and recovered completely.
Keywords: *Lymph nodes, Rosai-Dorfman disease, sinus histiocytosis with massive lymphadenopathy (SHML)*

Introduction

Castleman's disease, dermopathic lymphadenitis, mucocutaneous lymph node syndrome (Kawasaki's disease), histiocytic necrotising lymphadenopathy (kikuchi's disease), vascular transformation of lymph nodes and inflammatory pseudo tumour of the lymph node are among the rare causes of lymph node enlargement. Sinus histiocytosis with massive lymphadenopathy (SHML) is an important addition to this list.
This is a case report of rosai dorfman disease in a 63 year old male.

Case Report

63 year old male came out patient department of MGM hospital with chief complaints of bilateral cervical & submandibular swelling since one and a half years which was waxing and waning. No history of fever, malaise, reduced appetite, night sweats, bony pains. No pasthistory of kochs. Patient is a known hypertensive on treatment. Patient denies all addictions. On examination patient was vitally stable. On local examination the swellings were up to 5-6cm non tender, firm, non-mobile, hard in consistency and irregular surface, bilateral but not symmetrical. On further examination axillary lymph nodes, right epitrochlear, bilateral inguinal lymph nodes were palpable. On oral examination bilateral tonsils were enlarged. Systemic examination was unremarkable.

Figure 1

Figure 2

Table 1. Blood Investigation					
hemoglobin	**9.0**	Total Bilirubin	1.0 mg/dl	Albumin,	3.61 g/dl
WBC	10200	direct bilirubin	0.26 mg/dl	globulin,	3.47 g/dl
DLC	N80/L15/M2/E3	SGOT	22.5 U/L	A/G ratio	1.04.
Platelets	1.32	SGPT	16.4 U/L	Sodium	130 mmol/l
ESR	32	ALP	222 U/L	Potassium	4.1 mmol/l
total proteins	7.08 g/dl	**Serum LDH**	**504 U/l**	Creatinine	0.98 mg/dl
Serum protein electrophoresis		Within normal limits			

Table 2. Imaging	
Chest x-ray pa view	Nodular shadow is seen in right lower zone just below the 9th rib posterior 3rd part.
bilateral duplex ultrasound of carotid arteries	Within normal limits.
USG neck	multiples lymph nodes noted in all levels of the neck (IA, IB, II, III, IV & V) and parotid glands, largest measuring 3.6 x 2cm at level II on left and 3.8 x 1.7cm in right level II. Lymph nodes show conglomeration and some show loss of fatty hilum.
USG abdomen & pelvis	Moderate splenomegaly with hepatomegaly.

Differential diagnosis at this stage was either NHL (low grade) or a follicular lymphoma.

As we know, a diagnosis is incomplete without a tissue sample, so the next best thing was a biopsy

Table 3. Histopathology		
Histopathology	Finding	Impression
FNAC 1)right cervical lymph node swelling 2)right anterior triangle cervical lymph node swelling	Multinucleated giant cells in the background of polymorphous population of lymphocytes mainly mature and transformed lymphocytes along with intervening vascular endothelial cells. Ahighly cellular smears comprising of polymorphous population of lymphoid cells comprising of small lymphocytes, centrocytes, centroblasts, immunoblasts and abundant binucleate and multinucleate histiocytes. Aspirate also shows plenty of uni&binucleatedhistiocytes with abundant foamy cytoplasm and with emperipolesis of lymphocyte. No evidence of granuloma or malignancy.	? sinus histiocytosis with massive lymphadenopathy (SHML, rosaidorfman disease) ? Hodgkin's lymphoma
EXCISION BIOPSY (cervical lymph node which was confirmatory)		ROSAI DORFMAN disease confirmed by IHC CD68 and S-100 diffusely positive.

The patient was started on low dose steroids along with allopuirnol. The patient was kept under strict weekly follow up, the swellings gradually reduced in size, and the patient recovered completely.

Discussion

Way back in 1969 by Dr. Rosai and Dr. Dorfman described this rare disease as a separate entity as Rosai-Dorfman disease (RDD) under the broad

term of sinus histiocytosis with massive lymphadenopathy (SHML) [1]. The disease is yet to be fully understood, the exact aetiology still remains elusive.

Although no age group is spared from rosai dorfman disease, it is most frequently seen in children and young adults[2]. Males and individuals of African descent are more frequently affected [3]. In the past reports have shown individuals developing RDD following bone marrow transplant for precursor-B acute lymphoblastic leukaemia[4], and concurrently or after Hodgkin's and non-Hodgkin's lymphoma [5]. The histiocytes accumulation and activation may be due to a cytokine-mediated migration of monocytes. Various stimuli could trigger this functional activation, like coexistence of RDD and autoim-mune diseases, haematological malignancies and post-infectious conditions. In fact, many viruses like Herpesvirus 6 (HHV-6) [6] and Epstein-Barr virus (EBV) [7] have been implicated as potential causative agents, however, there is no strong evidence for this at the moment.

Pathology

Histologically, in the lymph nodes one can see heavily infiltrated large histiocytes, lymphocytes and plasma cells showing pericapsular fibrosis and dilated sinuses. The diagnosis of RDD is confirmed by the characteristic histological feature of emperipolesis that is a cell in cell appearance and immunohistochemical positivity for S-100 stain [2]. The RDD lesions tend to express strongly IL-1β and TNF-α and systemic symptoms in RDD may be related to enhanced production of these cytokines [8].

Clinical features

Massive bilateral and painless cervical lymphadenopathy with fever, night sweats and weight loss these are some of the most frequent clinical presenting features of RDD. Mediastinal, inguinal and retroperitoneal nodes may also be involved. Skin, soft tissue, upper respiratory tract, multifocal bone, eye and retro-orbital tissue with lymphadenopathy are some of the extra nodal sites involved in RDD and has been documented in 43% of the cases[9]. Other reported sites include urogenital tract, breast, gastrointestinal tract, liver, pancreas and lungs. In about 22% of rosaidorfman disease head and neck involvement has been reported, out of these the nasal cavity followed by the parotid gland are commonly involved [2]. Clinically and radiologically Rosai-Dorfman disease of central nervous system may present as a meningioma, but the presence of emperipolesis in the CSF is usually diagnostic [10]. Non- specific laboratory features like elevated white blood cell count and erythrocyte sedimentation rate are commonly seen in RDD patients. The patients are usually anaemic, most commonly having normochromic/ normocytic anaemia followed by autoimmune haemolyticanaemia with an elevated serum ferritin levels [9, 11]. For early detection and for assessing response to initial treatment PET scan (Fludeoxyglucose F-18 positron emission tomography) has been found to be sensitive indicator in systemic Rosai Dorfman disease [12]. Rosai Dorfman disease has a clinical course which is typically waxing and waning in pattern having episodes of exacerbation and remissions that could last over many years.

RDD patients can be subdivided into three categories:

1) Patients who present with generalised lymphadenopathy and have spontaneous regression and no further recurrences.

2) Patients who have a more widespread nodal disease with immunologic abnormalities at presentation, these subgroups have a higher fatality rate [9, 13].

3) Patients with multi-nodal involvement and widespread extra nodal site involvement, which tend to have frequent exacerbations and lesser chances of going to spontaneous remission.

When the disease is restricted to the skin without lymphadenopathy it is known as Cutaneous Rosai-Dorfman disease (C-RDD) which is a distinct entity from systemic RDD [14]. C-RDD has spontaneous regression in most cases and usually has a benign course. In C-RDD cosmetic reasons

or frequent relapses is the only indication for treatment.

Treatment

Keeping in mind the waxing and waning pattern of the disease most cases go into spontaneous remission and don't need any treatment per say. Strict follow up and observation without any direct intervention is preferred. Once we have histopathological and immunohistochemical conformation of the disease, we have to see if the disease is generalised or localised. If the patient is asymptomatic with a localised disease, the patient only needs regular follow up and no active intervention. If the patient is symptomatic, a surgical resection or local radiotherapy may be needed. In generalised RDD patients who are asymptomatic again only regular follow up is preferred, but if the patient is symptomatic, steroids, rituximab, interferon, imatinib, clofarabine and cladribine may be used.

Conclusion

Any patient presenting with lymphadenopathy should undergo trucut or excision biopsy for histopathology & immunohistochemical analysis. This enables us to come to an exact diagnosis and helps us rule out malignancies and other sinister diseases, which can be a relief for the patient and treating physician.

References

1. Rosai J, Dorfman RF. Sinus histiocytosis with massive lymphadenopathy. Arch Pathol 1969; 87: 63-70
2. Juskevicius R, and Finlay JL. Rosai-Dorfman disease of the parotid gland, cytologic and histopathologic findings with immunohistochemical correlation. Arch Pathol Lab Med 2001; 125: 1348-1350.
3. Lauwers GY, Perez-Atayde A, Dorfman RF, et al. The digestive system manifestations of Rosai-Dorfman disease (sinus histiocytosis with massive lymphadenopathy): review of 11 cases. Hum Pathol 2000; 31: 380-385.
4. Ambati S, Chamyan G, Restrepo R, et al. Rosai-Dorfman disease following bone marrow transplantation for pre-B cell acute lymphoblastic leukemia. Pediatr Blood Cancer 2008; 51: 433-435.
5. Lu D, Estalilla OC, Manning JT, et al. Sinus Histiocytosis with Massive Lymphadenopathy and Malignant Lymphoma Involving the Same Lymph Node: A Report of Four Cases and Review of the Literature. Modern Pathol 2000; 13: 414-419.
6. Levine PH, Jahan N, Murari P, et al. Detection of Human Herpesvirus 6 in Tissues Involved by Sinus Histiocytosis with Massive Lymphadenopathy (RosaiDorfman Disease). J Infect Dis 1992; 166: 291-295.
7. Tsang WY, Yip TT, and Chan JK. The Rosai-Dorfman disease histiocytes are not infected by Epstein-Barr virus. Histopathology 1994; 25: 88-90.
8. Foss HD, Herbst H, Araujo L, et al. Monokine expression in Langerhans' cell histiocytosis and sinus histiocytosis with massive lymphadenopathy (RosaiDorfman disease). J Pathol 1996; 179: 60-65.
9. Foucar E, Rosai J. and Dorfman R. Sinus histiocytosis with massive lymphaden-opathy (Rosai-Dorfman disease): review of the entity. Semin Diagn Pathol 1990; 7: 19-73.
10. Kraeft SK, Honig M, Krishnamurthy S. Emperipolesis in the Cerebrospinal Fluid From a Patient With Rosai-Dorfman Disease. DiagnCytopathol 2007; 36:67-68.
11. Cunha BA, Durie N, Selbs E, et al. Fever of unknown origin (FUO) due to RosaiDorfman disease with mediastinal adenopathy mimicking lymphoma: diagnostic importance of elevated serum ferritin levels and poyclonalgammopathy. Heart Lung 2009; 38: 83-88.

12. Menzel C, Hamscho N, Dobert N, et al. PET imaging of Rosai-Dorfman Disease: correlation with histopathology and ex-vivo beta-imaging. Arch Dematol Res. 2003; 295:280-283.
13. Goodnight JW, Wang MB, Sercarz JA, et al. ExtranodalRosai-Dorfman disease of the head and neck. Laryngoscope 1996; 106:253-256.
14. Wang KH, Chen WY, Liu HN, et al. Cutaneous Rosai-Dorfman disease: clinicopathological profiles, spectrum and evolution of 21 lesions in six patients. Br J Dermatol 2006; 154:277-286.