ORIGINAL ARTICLE

Chenhab Valley - A New Focus of Cutaneous Leishmaniasis In Jammu And Kashmir, India.

Mashkoor Ahmed Wani , Rajesh Sharma

Abstract

The present study highlights clinical features and epidemiology of cutaneous leishmaniasis from a new focus of the disease in Jammu and Kashmir, previously a non-endemic area. It was a hospital based study in which 82 new cases of cutaneous leishmaniasis detected between June 2015 and July 2016 were evaluated for clinical aspects,epidemiology, geographical origin and treatment. The clinical diagnosis of cutaneous leishmaniasis was made by using criteria proposed by Bari and Rahman and was confirmed by the demonstration of leishmania Donovan bodies in the slit skin smear, histopathology and satisfactory response to intralesional sodium stibogluconate. 82 new cases of cutaneous leishmaniasis acquired indigenously were studied. There were 54(65. %) males and 28(34.15%) females with an age range of 2 to 65 years. All the patients belonged to a particular region comprising of three districts surrounding river Chenab. Face involvement was seen in majority of patients and a nodulo-ulerative plaque was the most common lesion.Farmers (25.2%), laborers (24.2%) and students (22.4%) were the highest represented groups among occupation. Skin smear and biopsy were positive for LD bodies in 49(59.75%) and 29(35.3%) cases respectively. Cutaneous Leishmaniasis is a disease of tropical and semi-tropical areas of the world. In India the disease is mainly confined to northwestern region. There has been a recent rise in the number of cases of cutaneous leishmaniasis in Jammu and Kashmir where the disease was not known to occur earlier.

Key Words

Cutaneous Leishmaniasis, Chenhab Valley, Protozoa, Leishmania

Introduction

Cutaneous Leishmaniasis (CL) is an infectious disease caused by various species of Leishmania protozoa, mainly transmitted by sand-fly, Phlebotomous of which more than 600 species have been identified. The sandflies transmit the parasite after they acquire itby feeding on infected animals and humans.(1) The disease presents as having discrete relatively painless skin lesions in the form of nodules, plaques and nodulo-ulcerative lesions mostly on exposed parts of body (2).The disease is an important heath problem in several parts of the world including India(3).In India indigenous cases of cutaneous leishmaniasis are mainly confined to northwest region and are endemic in western Thar deserts of Rajasthan (4).The sandflies live in dark and damp places and epidemics of cutaneous lieshmaniais have been associated with deforestation, road construction, irrigation projects or any other activity which intrude the habitat of the vector (5).

Cutaneous leishmaniasis can be diagnosed by clinical appearance in endemic areas but diagnostic techniques such a slit skin smear,culture, and skin biopsy are required in non-endemic areas and in atypical clinical variants of the disease. There are only a few treatment options for the disease and their benefit has been studied in depth. The well accepted therapy continues to be pentavalentantimonials which have been in use since 1940s (6). Systemic sodium gluconate therapy is prolonged and associated with systemic side effects, WHO recommends intralesional sodiumstibogluconate for early and localised disease (7). This paper highlights a new focus of cutaneous leishmaniasis in the temprate area of Jammu and Kashmir. The possible mode of its

From the Department of Dermatology, SMGS, Govt. Medical College Jammu- J&K India 180001

Correspondence to : Dr. Mashkoor Ahmed Wani, Assistant Professor, Department of Dermatology, Govt. Medical College Jammu, J&K India 180001

introduction in the region is postulated but further studies are required for identify of vector and strain of leishmania.

Cutaneous leishmaniasis was not known to occur in Jammu and Kashmir. However in last a few years the disease was reported from different parts as a new phenomenon in the state (8).We present here the clinical and epidemiological observations on this recently introduced disease in this region to document a particular new focus in the state.

Material and Methods

The study was a descriptive clinical study conducted in the department of dermatology in collaboration with department of pathology, Govt. Medical CollegeJammu. The study was conducted on 82 patientsattending the department from June 2015 to July 2016.The patients were subjected to detailed history, clinical examination and relevant investigations. A detailed history including epidemiological data, date of disease onset, house feature, and history of sleeping outdoors, history of visiting an endemic area, insect bite and history of similar disease in the family or neighborhood was noted. All the patients were subjected to general physical, systemic, cutaneous and mucosal examination.The clinical diagnosis of cutaneous leishmainiasis was made on the basis of criteria proposed by Bari and Rahman. Consent was taken from clinically diagnosed cases for slit skin smear and skin biopsy, the smear was taken from the edge of the lesion with a scalpel blade and fluid and pulp collected were examined under high power and then under oil immersion for Leishman Donovan bodies. A skin biopsy was taken from each patient and stained under Hematoxylin and Eosin stain. The sections were examined in detail by a pathologist. Two patients did not agree for tissue smear and biopsy and were not included in the study.

The clinically suspected cases who were smear negative were given a therapeutic trial of intralesional sodium stibogluconate once a week for 6 weeks. The response was assessed by disappearance of erythema and reduction in induration of the lesions. The cases showing satisfactory response to therapeutic trial were considered to be confirmed cases of cutaneous leishmaniasis.

Results

82 patients of both sex and age were included in the study. The age of the patients ranged from 2 to 65 years (mean age 28.05 years) and included 54 (65.85%) males and 28 (34.5%) females. The majority (62%) cases were between 20 to 40 years. Among various occupations, Farmers (25.2%), laborers (24.2%) and students (22.4%) were the highest represented groups. Most of the patients had a history of living in a kacha house, outdoor toilets and sleeping outdoors.

The duration of the lesion varied from 2 to 12 months but majority of the patients (62%) presented with 2-4 months duration. The number of lesions varied from 1-5. A single lesion was present in 72 (87.80%) patients and multiple lesions were present in 10(12.20%) patients. Face was affected in 74 (90.24%) patients and lesions were mainly confined to cheeks,nose, lips and forehead. This was followed by neck, upper limb, lower limb and upper trunk. Noduloulcerative type lesions were most commonly seen in 53(64.63%) patients. The ulcers were painless, frequently covered by adherent crusts. The other type of lesions were edematous plaque 19 (23.17%), nodule 6(7.3 %) and papule 4 (4.87%). one patient had mucosal involvement of lower lip which seemed to be contiguous extension of cutaneous lesions. Skin smear for Leishman Donovan bodies were positive in 49(59.75%) cases. Leishman Donovan bodies were present in the biopsy of 29 (35.36%) cases in addition to histopathology findings. Twenty two (26.82%) patients were negative for LD bodies on smear and histopathology. These patients responded well to intralesional sodium stibogluconate given once a week for 6 weeks. The histopathology findings were epidermal ulceration, hyperkeratosis and acanthosis. The dermis showed epithelioid cell granuloma, lymphocytes, plasma cells and histiocytes with variable degree.

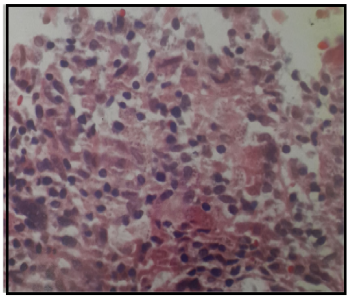
Discussion

Cutaneous leishmaniasis begins as a papule or nodule and becomes a chronic ulcer that is restricted to skin .The clinical manifestations are not always pathognomic and can mimic impetigo, furunculosis, insect bite, leprosy, lupus vulgaris and skin cancer. The most common agents in Old world are L.tropica and L.major and in New World L.mexicans and L.brazilliensis (9).In an endemic area cutaneous leishmaniasis can generally be diagnosed by its clinical appearance alone but laboratory investigations like slit skin smear , impression smear culture and skin biopsy are required for diagnosis when lesions appear in non-endemic areas. Sophisticated tests like immunofluorescence, DNA probe, PCR and electron microscopy are expensive and not present in all centers. Cutaneous leishmaniasis is endemic in 82 countries in the world(10).the new foci of infection are being continuously reported from India, Pakistan and Afghanistan. In India indigenous cases have been reported from states of Kerala,Assam and Himachal Pradesh (11).

Cutaneous leishmaniasis was not known to occur earlier in the state of Jammu and Kashmir, may be because of cold climate as the hostile environment for the vector and causative agent. In past few years the disease was reported from some parts of the state as new entry (12).All our patients belonged to a particular hilly terrain comprising of three districts of Doda, Kishtwar and Ramban. These areas are located around the river Chenab in the middle and outer Himalayan range of Jammu and Kashmir. The region has an average elevation of 1107 meters (3361) feet, and receive minimal rainfall throughout the year. The explosion in the incidence of cutaneous leishmaniasis in the region can be explained by environmental changes because of new hydro-electric

Fig.1& 2. Showing Cutaneous Leishmaniasis

Fig.3. Histopathology of Cutaneous Leishmaniasis Lession



projects, irrigation schemes and construction works taken up during last few years. The immigration of labor population from endemic areas like Rajasthan and Himachal Pradesh for various hydroelectric projects in the valley may be another reason.

Majority of our patients (62%) were between 21-40 years of age. This age group is perhaps more exposed to sand-fly bites because of more outdoor activities. These findings are consistent with earlier studies13.The male preponderance in our studies can be justified on the basis that men worked more in open environment than women. Aara-et-al have also described male preponderance in their study (14).Among various occupations farmers,laborers and students were the predominantgroup. This is comparable to earlier studies (15).

Demonstration of parasites in skin smear remains the easiest a specific method of diagnosis. The positivity of smear depends upon the age of the lesion; younger lesions being more likely to be positive (16).Tissue smear positivity was 59 % in our patients and majority of the lesions were of 2-4 months duration.

Most of our patients had lesions over face and hands (exposed parts) which confirms to the established clinical picture of the disease. Various morphological forms of cutaneous leishmaniasis have been described of which nodulo-ulcerative classically known as 'oriental sore' is the most common (12). This was the most common type of cutaneous leishmaniasis in our study. Mucosal lesions are most commonly caused by L.tropica and occur usually on lips and nostrils (16).It may occur by hematic or lymphatic dissemination or by contiguous spread. In our series mucosal involvement in one patient is possibly by contiguous spread. The histological characteristics and patterns in our study were similar to those described earlier (17).the skin biopsy can be regarded as another relatively economical procedure. We could not perform other sophisticated and more modern test due to non-availability.

Conclusion

The present study has highlighted that incidence of cutaneous leishmaniasis is increasing in a particular region of Jammu and Kashmir state. Further epidemiological studies are needed to establish the identity of vector and Leishman strain to control this important health problem.

References

1. Mujtaba G, Khalid M. Cutaneous leishmaniasis in Multan ,Pakistan. *Int J Dermatol* 1998;37:843-5
2. Ul Bari , Ber Rahman S. Correlationof clinical histopathological and microbiological findings in 60 cases of cutaneous leishmaniasis.*Indian J Dermatol Venereol Leprol* 2006;72:28-32
3. WHO Geneva, Control of Leishmaniasis. *WHO Technical Report Series* 793; 1990:66-94
4. Grevilink SA, Lerner EA.Leishmaniasis. *J Am Acad Dermatol* 1996;34:257-72
5. World Health Organization. Control of leishmaniasis .WHO Tech Rep Ser 793.Geneva: World Health Organization: 1990. P 66-94
6. Chance M. New development in the chemotherapy of leishmaniasis. *Am Trop Med Parasitol* 1995 ;89 (suppl. 1): 37-43
7. Kubba R , Al-Gundan Y. Some recent observations in Cutaneous Leishmaniasis. *Indian J Dermatol Venereol Leprol* 1989;55:7-17
8. Kaul N , Gupta V , Bhardwaj S. A new focus of Cutaneous Leishmaniasis in Jammu Division.*Indian J Dermatol Venereol Leprol* 2016;2:145-50
9. Zare S , Bhageshwari S.Cutaneous Leishmaniasis in Hormozgan, Iran. *Int J Dermatol* 2001; 40 (10):629-31
10. Berman JD. Human Leishmaniasis , clinical , diagnostic and chemo therapeutic development in last 10 years.*Clin Infect Dis* 1997 ; 21 (suppl.1):168
11. Sharma RC, Mahajan VK, Sharma NL.A new focus of cutaneous leishmaniasis in Himachal Pradesh (India). *Indian J Dermatol Venereol Leprol* 2003; 2:170-72.
12. Masood Q, Majid I, Hassan I, Khan D. Cutaneous leishmaniasis in Kashmir: A new Phenomenon. *KMJ* 2009 ; 3 :395-7
13. Momeni AZ, Aminjavaheri M .Clinical picture of cutaneous leishmaniasis in Istahan , Iran. *Int J Dermatol* 1994 ; 33: 260-65
14. Aara N, Khandelwal K , Bumb RA , Mehta RD,Ghiya BC.Clinico-epidemiological study of cutaneous leishmaniasis in Bikaner , Rajasthan , India. *Am J Trop Med Hyg* 2013;89:111-5
15. Abdellatif MZ, EL Mabourak K,Ewis AA.An epidemiological study of cutaneous leishmaniais in AL-Jabal, AL-gharbi , Libiya. *Korean J Parasitol* 2013;51: 75-84
16. Schewach-Millet M, Khana M, Rinen M . Mucosal involvement of cutaneous leishmainiasis.*Int J Dermatol* 1986;25:1[1] 113-114
17. Venkatraman M , Moosa M , Devi L .Histopathological spectrum in cutaneous leishmaniasis : A study in Oman.*Indian J Dermatol Venereol Leprol* 2001; 67:294-8