

A CLINICO-EPIDEMIOLOGICAL STUDY OF CUTANEOUS LEISHMANIASIS IN BIKANER

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Clinico-epidemiological features of 142 smear positive cases of oriental sore detected out of 394 clinically diagnosed cases, in 1 year duration, are described. A distinct endemic belt of high cases density was observed in the thickly populated area of old walled city of Bikaner in close proximity of terrains revines & having high dog population. The current epidemiologic status of the disease has been evaluated. 72.53% cases were from age group 5 to 29 years; 60.56% of the positive cases had lesion on exposed body parts; lesions were ulcerative in 59.15% of cases and 73.94% of cases had single lesion on body. The majority of cases (73.94%) had duration of lesions from 1 to 3 months. 68.31% cases belonged to low socio-economic group. Males were affected more than females.

Key Words : Oriental sore, *Leishmania tropica*.

Introduction

Of the diseases caused by protozoal parasites leishmaniasis is probably second in importance after malaria. Cutaneous leishmaniasis caused by *Leishmania tropica* is limited to one or several lesions on the skin of the exposed body parts. It is commonly called Oriental sore. Depending on the endemicity in different areas, local names have been given to the disease viz. Delhi boil, Ambala sore, Kamal sore, Gujrat sore etc.^{1,2} A large epidemic was recorded in Delhi involving approximately 20,000 individuals.³ Similarly, another epidemic in Jodhpur followed exodus of displaced persons from Pakistan in 1950.⁴

Since the number of oriental sore cases have increased during the past a few years an attempt was made in present study to assess the current status of the endemicity of this disease in Bikaner city and to describe its important clinico-epidemiological features. The

study area, investigated in the present report has an eccentric geographical location in the north western region of Rajasthan in Thar desert, it has high incidence of oriental sore and an earlier out break of oriental sore in Bikaner city in 1971⁵ and in 1973.⁴

Materials and Methods

All cases of chronic non-healing cutaneous ulcers clinically suspected of oriental sore attending the Skin & V D and Surgical out patient Department of the Medical College Hospital, Bikaner and all the five peripheral dispensaries of Bikaner city, during 14 month period were included in the study. The clinical details of these cases were recorded. Several smears made from different lesions were stained by Giemsa and Leishman's stain and were examined for the presence of *Leishmania tropica* bodies in macrophages. The endemic area of maximum density of oriental sore cases was located and its topographic feature with dog population was also recorded.

Results

Bikaner : is situated 28° north and 73° east on a slight elevation about 227 meters

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above the mean sea level. The interior walled city is surrounded by a stone wall and has overcrowded lofty houses, temples, tanks and nallahs. There are 5 major gates which are portals of entry into the walled city and still their geographical locations mark an approximate junction of an interior and external urban area. The Municipal area is approximately 37.95 Sq.Km. and has a population of 2,80,366 as per 1981 census. The climate of Bikaner is dry. The normal annual rainfall is 263.7 mm and the rainy season often extends from June to September. The monthly mean temperature varies from 14° C (January) to 43.5°C (June) and relative humidity from 23.4% to 57.8% (May to August). On account of cultural habits of the people to protect dogs, the dog population of the city varies between 15 to 20 thousand (approximately estimated by Municipality).

Of the total 394 clinically diagnosed oriental sore patients, only 142 (36.04 percent) were confirmed on smear examination showing *Leishmania tropica* bodies intra cellularly.

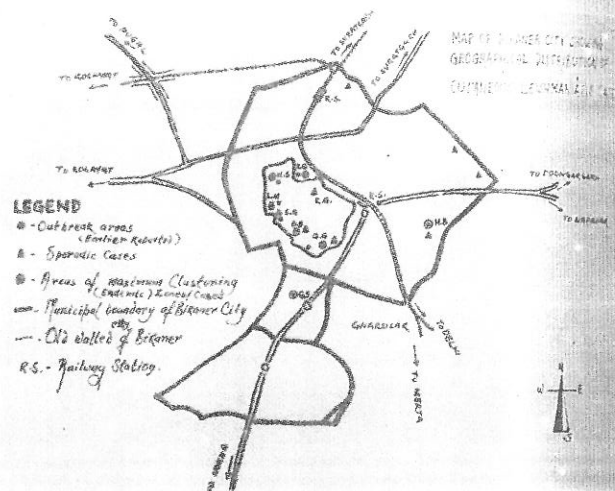
On evaluating the distribution of these 142 positive cases according to age and sex, there were 85 males and 57 females, maximum proportions of cases (72.53%) belonged to the age group 5-29 years.

Of the 142 smear positive cases the lesions were seen as ulcerative 84 (59.15), nodular 49 (34.51%) and both nodulo-ulcerative in 9 cases (6.34%). In majority of cases 105 (73.94%) single lesion was observed, whereas multiple lesions ranging from 2-5 were seen in 35 cases (24.65%) and 5 in 2 cases (1.41%). While analysing the duration of lesions, it was observed that most cases 105 (73.94%) belonged to 1-3 months durations, 12 cases (8.45%) had 1 month

duration and 25 (17.61%) belonged to 3 months duration.

The lesions of oriental sore displayed a characteristic distribution pattern to different anatomical sites; 85 (60.56%) were seen on exposed body parts : face 43 (30.28%), forearm 21 (14.79%), hand 10 (7.04%), foot 5 (3.52%), leg 7 (4.93%). 17 (11.97%) cases showed lesions on unexposed body parts (thigh, arm, back and abdomen) 39 (27.47%) cases showed multiple lesions.

Majority of these cases belonged to the peripheral areas of the old walled city of Bikaner. Fig -1, which shows a distinct endemic belt of Oriental sore cases. These



areas are thickly populated and conditions there, can not be considered conducive to healthy living owing to substandard sanitation over protection of dogs with their high population and close proximity of the area to terrains.

Only a few sporadic cases belonged to areas outside the walled city, these areas being Rajasthan Cannal Project Colony, Ginani and Hanuman Hatha (North-West localities). The vector detection and identification could not be made in present study.

Comments

There has been earlier reports describing an outbreak of cutaneous leishmaniasis in Bikaner confined to Simavarti Chatravas (South-East locality) and the other defining the epidemiological and entomological features of the outbreak in Bikaner.^{4,5} These reports highlighted the endemicity of the disease in the city with prevalence rate of 0.16%. The present study revealed that after a decade, the status of endemicity of the disease remains at 1 per thousand population stressing the endemicity of the disease in the city with prevalence rate of 0.16%.

Certain localities in the city has larger concentration of oriental sore cases and a distinct endemic belt in close proximity to the terrains. Previous investigations also showed increased percentage of affected persons in these areas. The higher transmission potentials of this belt is on account of its close proximity to terrains and lodging rodents and dogs, being cool in summer.^{4,6}

Greater preponderance of case between the ages 5 and 29 years and a slight male preponderance over females is possibly due to the fact that women are less exposed to sandfly bite due to their stay at home and wearing heavy clothing. Our observations are in accordance with the earlier observations⁴. Exposed parts of the body formed the common sites for infection in comparison to unexposed body parts. Cases in which lesions involved multiple sites on the body, 87.93% lesions were on exposed body parts. Lesions on face were mainly on nose, lips and cheeks in the order of frequency and were mainly nodular in type. This probably, is due to quick reporting of cases for cosmetic reasons when

the lesion exists in its nodular stage before ulcerations has taken place.

Majority (68.31%) belonged to low income group of the socio-economic groups earlier described.⁷ Although no group is immune to the disease, yet hygienic status of persons in different group is probably responsible for this increase occurrence of the disease in a particular socio-economic group.

Bikaner city has a relatively high dog population. In earlier studies, infected dog in some affected localities were reported.^{4,6,8}

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