Original article

Cutaneous leishmaniasis in Sadda, Kurram Agency, Pakistan

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Abstract ***Background*** Cutaneous leishmaniasis (CL) is endemic in the tribal belt bordering Afghanistan .This study was carried out to determine the demographic and clinical pattern of the disease in Sadda , Kurram Agency.

Patients and methods CL patients presenting to leishmaniasis clinic of Tehsil Headquarter Hospital, Sadda from 1st November, 2003 to 30th March, 2004 were included in the study. The patients were diagnosed clinically and confirmed by laboratory confirmation of parasites in a Giemsa-stained smear prepared from the lesion. All important clinical details were recorded on a specially designed proforma and patients were registered for the purpose of treatment and a card was issued to them for subsequent visits and follow up.

Results A total of one hundred and fifty patients with 325 lesions were seen during a period of five months. Dry type of cutaneous leishmaniasis was seen in 120 (80%) patients and wet type was noted in 30 (20%) patients. Most of the lesions (98%) were present on exposed parts of the body. Sixty (40%) patients had one and 75 (50%) had two lesions. More than two lesions were seen in 10% of patients. Eighty per cent of sufferers were less than 30 years of age. The disease was more common in males (70%). Family history was positive in 45 (30%) patients. History regarding traveling to Afghanistan was negative in most of the patients (98%).

Conclusion CL is endemic in this part of tribal belt. Both type of CL is prevalent among the local population.

Key words
Cutaneous leishmaniasis, Sadda

Introduction

Cutaneous leishmaniasis (CL) is a chronic granulomatous infection of reticuloendothelial cells of skin caused by the protozoan parasite *Leishmania*.[1] Although, the infection occurs in all continents, it is endemic in tropical and subtropical countries. In Pakistan, the disease is endemic in Sindh and Baluchistan provinces.[2] It has also been reported from Multan, Dera Ghazi Khan and Chakwal districts in the province of Punjab.[3] In NWFP, the disease has been reported from District Dir,[4] Kohat,[5] and Afghan refugees settlements. In Afghanistan and Pakistan two *Leishmania* species; *L. tropica* causing dry type of lesions and *L. major* producing wet type of lesions are mainly seen.[6] Visceral leishmaniasis has been reported from district Dir in NWFP.[7]

Cutaneous leishmaniasis is called *saal dana* in Afghanistan and areas of NWFP where it is endemic (saal=year, dana=lesion). CL has been common in parts of Afghanistan for centuries.[6] During Soviet occupation of Afghanistan, tribal

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belt bordering Afghanistan was the home to millions of Afghan refugees, and Kurram Agency in Federally administered tribal area (FATA) had the largest population of Afghan refugees. These war-related population movements and environmental destruction have caused a large increase in the CL prevalence in tribal belt bordering Afghanistan. CL spread to refugee camps in FATA of Pakistan and is now transmitted locally in these areas.[8]

Kurram Agency is divided into three parts Upper Kurram, lower Kurram and central Kurram. Sadda is the headquarter of the lower Kurram with a population of half a million. Due to increase in the prevalence of cutaneous leishmaniasis in Sadda, a Leishmaniasis Clinic was established in 2001 where patients are diagnosed on the basis of smear for parasites and treated with pentavalent antimonial compounds. This study was conducted to determine the demographic and clinical pattern of cutaneous leishmaniasis in patients presenting to leishmaniasis clinic of Tehsil head quarter hospital Sadda.

Patients and methods

This study was carried out in the *L*eishmaniasis *C*linic of Tehsil headquarter hospital (THQ), Sadda, Kurram agency from 1st November 2003 to 30th April, 2004. One hundred and fifty patients with clinically suspected leishmaniasis presenting to the Leishmaniasis Clinic of THQ hospital, Sadda, Parachinar were included in the study. Clinical features including age, gender, nationality, site and number of the lesions, family history, inquiry regarding visit to Afghanistan were recorded on a register. The lesion was examined clinically and diagnosis was confirmed by the presence of amastigotes of *Leishmania* in a Giemsa-stained smear from the edge of the lesion. Smear examination is the earliest and sole method to confirm the clinical diagnosis in an endemic area. In our study only smear positive cases were included in the study. All the cases were registered and a card was issued for the purpose of treatment and follow-up. Patients were treated according to WHO recommendations with either sodium stibogluconate or meglumine antimonate.

Results

A total of 150 patients were seen in the clinic during a period of 4 months from 1st November, 2003 to 30th March, 2004. There were 105 (70%) males and 45 (30%) females. Although disease was prevalent in all age groups (range 1-60 years), 83% of the patients were less than 30 years of age. Dry type of leishmaniasis was seen in 120 (80%) patients while wet type was noted in 30 (20%) patients **Table 1**.

The duration of lesion ranged from 4 weeks to 3 months. The lesions were situated on the exposed parts of the body face, hands and feet. Face was the commonest site involved and trunk the least **Table 2**. Family history of leishmaniasis was positive in 22 patients. None of the patients reported traveling to Afghanistan. Majority of patients were local whereas 17 patients were Afghan refugees. The total number of lesions in all the patients was 325. Sixty patients (40%) had one lesion, 75 (50%) had two lesions and 15 (10%) had more than two lesions. The maximum number of lesions i.e. 6 was seen in brother and sister who were from Sherinao, a small village next to Pak-Afghan border in Afghanistan **Table 3**.

Table 1 Age and gender of the study population (n=150)

Age (years)	*n (%)*
0-10	30 (20)
11-20	48 (33)
21-30	40 (27)
31-40	11 (7.3)
51-60	9 (6)

Table 2 Anatomical distribution of lesions (n=325)

Site	*n (%)*
Face	103 (32)
Hands	82 (25)
Forearms	48 (15)
Feet	58 (17.8)
Legs	26 (8)
Trunk	7 (2.2)
Total	325 (100)

Table 3 Frequency of number of lesions (n=325)

Number of lesions	*n (%)*
1	60 (40)
2	75 (50)
3	4 (2.7)
4	1 (0.7)
5	3 (2)
6	2 (1.3)

Discussion

Cutaneous leishmaniasis is a world wide problem and is endemic in Afghanistan for centuries. It is of clinical importance because of its chronicity and its potential for local destruction and disfigurement. The disease is commonly known as saal-dana in parts of Afghanistan and tribal areas where it is endemic.[8] Sporadic cases of cutaneous leishmaniasis were seen in Afghan refugees living in this area as evidenced by the presence of healed lesions in Afghan refugees. The disease has been endemic in Afghanistan for a long time.[8] The present outbreak in this part of tribal belt can be linked to large scale movement of refugees across the border and environmental destruction as a result of massive bombing carried out in this area that disturbed the ecology. Initially the disease was localized to Afghan refugees but gradually it involved the local population, which was non immune to the disease as reported from other parts of country.[8]

In the present study, both types of cutaneous leishmaniasis were seen, although dry type of lesions were more common (80%). In contrast Rab *et al*.[9] reported wet type of lesions from Baluchistan whereas another study from Multan[10] reported dry type of lesions. The occurrence of both type of cutaneous leishmaniasis may be due to presence of *L. major* as well as *L. tropica* in this region.

Almost all the patients were local except two patients who were admitted in the hospital with extensive lesions referred from Afghanistan. This signifies that the disease is locally endemic. Afghan refugees living in Sadda are provided health facilities by Project Directorate Health for Afghan refugees, having separate centers for provision of health facilities to Afghan refugees.

Most of the patients were from poor socioeconomic background living in congested houses having mud-lined walls with poor sanitary conditions. Family history of involvement was positive in 30% of cases.

Lesions were found mainly on exposed parts of the body because these are easily accessible sites for the sandflies to bite. The duration of lesions ranged from 4 weeks to three months. The disease was more common in 11-20 years age group.

Smear for Leishman-Donovan bodies is the sole method available to confirm these cases. Patients presenting with unusual lesions with negative smear were referred to tertiary level hospitals for diagnosis and management. Unusual clinical variants of cutaneous leishmaniasis have been reported from other endemic areas.[11] Due to lack of facilities and trained personnel, the disease is overdiagnosed and many skin ailments are wrongly treated as leishmaniasis.

Conclusion

Cutaneous leishmaniasis is endemic in this part of tribal area bordering Afghanistan. It is for first time that cutaneous leishmaniasis has been reported from this area. The disease can be controlled by elimination of sand flies and improving sanitary conditions.

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