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Cutaneous Leishmaniasis in Dr. Ersin Arslan Training and Research Hospital After Migration and During the Pandemic (2019-2022)

Dr. Ersin Arslan Eğitim ve Araştırma Hastanesi'nde Göç Sonrası ve Pandemi Sırasında Kutanöz Leishmaniasis (2019-2022)

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ABSTRACT

Objective: Cutaneous leishmaniasis is a parasitic skin disease transmitted by the bite of sandflies. In our region, which is endemic for this disease, there has been a great migration from a much more endemic region and population movements from our area to Türkiye and abroad. Afterward, a pandemic was experienced. Due to these two extraordinary events and the possible epidemic potential in our region, it is useful to follow-up on the disease. We aimed to contribute to the evaluation of the disease in these processes by analyzing the data of our laboratory in recent years.

Methods: Between January 2019 and December 2022, samples from patients who came to our laboratory with suspected cutaneous leishmaniasis were taken, stained and examined under a microscope. Patients were evaluated in terms of age, gender, nationality, place of residence, lesion site and duration.

Results: Out of the 144 examined cases, 64 (44.4%) were positive for cutaneous leishmaniasis. Among these positive cases, 40 (62.5%) were women, 24 (37.5%) were men, and 54 (84.3%) belonged to the 0-9 age group. Of those who tested positive, 54 (84.3%) were Turkish citizens and 23 (35.9%) were Syrian citizens. Fifty-four (84.3%) patients had only single lesion. While the number of applications and positivity rates remained within normal levels in 2019 and 2020, a significant decrease was observed in both from 2021 and 2022.

Conclusion: Cutaneous leishmaniasis is carried by migration, decreases in large-scale isolations such as pandemics, and its spread can be prevented with correct diagnosis and treatment. Although the number of patients may change over time and place, cutaneous leishmaniasis is a disease that threatens the health of societies and should always be monitored.

Keywords: Cutaneous leishmaniasis, migration, pandemic, Türkiye, Syria

ÖZ

Amaç: Kutanöz leishmaniasis, kum sineklerinin ısırmasıyla bulaşan paraziter bir deri hastalığıdır. İzi bırakan deri lezyonlarına neden olur. Bu hastalık açısından endemik olan bölgemize çok daha endemik olan bir bölgeden büyük bir göç ve bölgemizden de yurt içine ve yurt dışına nüfus hareketleri olmuştur. Sonrasında bir pandemi yaşanmıştır. Bu iki olağanüstü olay ve bölgemizdeki olası epidemi potansiyeli nedeni ile hastalığın takibinde yarar vardır. Laboratuvarımızın son yıllardaki verilerini analiz ederek bu süreçlerde hastalığı değerlendirmesine katkı sağlamayı amaçladık.

Yöntemler: Ocak 2019-Aralık 2022 tarihleri arasında laboratuvarımıza kutanöz leishmaniasis şüphesiyle gelen hastalardan örnekler alınmış, boyanmış ve mikroskop altında incelenmiştir. Hastalar yaş, cinsiyet, uyruk, ikamet yeri, lezyon bölgesi ve süresi açısından değerlendirilmiştir.

Bulgular: İncelenen 144 olgunun 64'ünde (%44,4) kutanöz leishmaniasis pozitif bulunmuştur. Bu pozitif olguların 40'ı (%62,5) kadın, 24'ü (%37,5) erkek ve 54'ü (%84,3) 0-9 yaş grubuna aitti. Test sonucu pozitif çıkanların 54'ü (%84,3) Türk vatandaşı, 23'ü (%35,9) ise Suriye vatandaşıydı. Hastaların 54'ünde (%84,3) sadece tek lezyon vardı. Başvuru sayısı ve pozitiflik oranları 2019 ve 2020 yıllarında normal seviyelerde seyrederken, 2021 ve 2022 yıllarında her ikisinde de belirgin bir düşüş gözlenmiştir.

Sonuç: Kutanöz leishmaniasis göçlerle taşınmakta, pandemi gibi büyük ölçekli izolasyonlarda azalmakta, doğru tanı ve tedavi ile yayılımı önlenebilmektedir. Hasta sayısı zaman ve mekana göre değişse de kutanöz leishmaniasis toplumların sağlığını tehdit eden ve her zaman takibi gereken bir hastalıktır.

Anahtar Kelimeler: Kutanöz leishmaniasis, göç, pandemi, Türkiye, Suriye

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Türkiye PARAZİTOLOJİ Dergisi

INTRODUCTION

Cutaneous leishmaniasis is a parasitic disease with zoonotic and anthroponotic characteristics. The vector transmits the parasite when biting reservoirs or humans. The lesions are mostly seen on open areas such as the face and extremities where the fly can easily reach. Lesions lasting longer eventually heal by leaving a scar and scar tissue. This scar may cause aesthetics problems in visible areas, especially on the face. Cutaneous leishmaniasis is a common and neglected disease. It has been reported in 98 countries in the world. Low socio-economic level, poor housing and nutrition, population mobility, changes in the environment and climate, and poor health services are the most important risk factors (1-4).

Cutaneous leishmaniasis has been reported in Türkiye since the beginning of the 19th century. It has been known by our people for hundreds of years; it is given different names according to the regions in our country such as oriental boil, Antep boil, Aleppo boil, year boil, beauty sore (5).

Çukurova and Southeastern Anatolia, including Gaziantep, are considered as endemic regions. While the cases were stable in these regions, the Syrian civil war in our nearby geography and migration to our country, followed by population mobility within our country, led to an increase in numbers and prevalence Gaziantep was preferred by migrants due to its proximity to Syrian cities and being an industrial city (5,6). Some of the migrants settled here, some of them stayed here for a while and dispersed to other cities in Türkiye or went to European countries (7).

In our study, we aimed to evaluate the cutaneous leishmaniasis cases admitted to our hospital and the epidemiologic characteristics of these cases during the migration and pandemic process.

METHODS

Between January 2019 and December 2022, patients who applied to the dermatology clinic of our hospital with the complaint of non-healing wounds and were thought to have cutaneous leishmaniasis were referred to our laboratory. At least two samples were taken from all lesions in the patient in accordance with the technique (incision-scraping, aspiration, aspiration following saline injection), fixed with methanol and stained with giemsa stain. After staining, the entire preparation was examined with a x100 objective by the relevant specialist physician. Samples were taken again from very suspicious patients in whom parasites could not be detected and the same procedures were repeated. Samples with amastigotes were considered positive (Figure 1). Patients were recorded in terms of age, sex, nationality, place of residence, site, type and duration of lesion. Patients or their relatives were asked "whether their wounds were associated with a disease they suspected" to understand awareness about the disease.

Statistical Analysis

"Jamovi 2.3.28 Solid" programme was used for statistical analysis. Chi-square test was applied when comparing the data and $p<0.05$ was considered significant.

Ethical approval was obtained from the Clinic Research Ethics Committee of the Gaziantep University (no: 2023/22, date: 12.04.2023).

RESULTS

The total number of patients analysed was 144 and *Leishmania* amastigotes were found in 64 (44.4%) of them. The results of the positive patients were as follows: Twenty-four (37.5%) were male and 40 (62.5%) were female. The age group in which leishmaniasis is most common is 0-9 years old. Fifty-four (84,3%) had a single lesion and 10 (15.6%) had more than one lesion. Positive patients had 39 (48.1%) lesions on the head and neck, 22 (27.1%) on the upper extremities, 14 (17.2%) on the lower extremities and 6 (7.4%) on the trunk. Of the lesions, 50 (61.7%) were papules, 22 (27.1%) nodules, 4 (4.9%) plaques, and 5 (6.1%) other types. Six (9.3%) patients had ulcers and 13 (20%) had crusts (Figure 2). The average time between the onset of lesions and diagnosis was 2.8 months. Forty (62.5%) of the patients were Turkish citizens and 24 (37.5%) were Syrian citizens. Twenty-three (35.9%) were

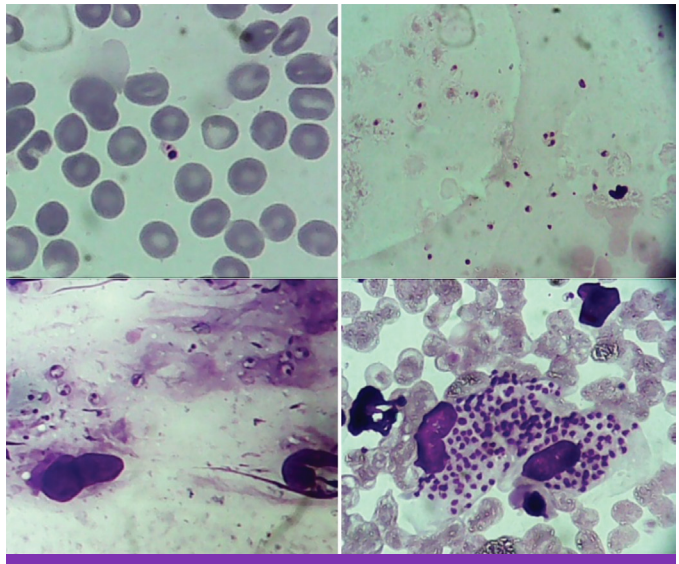

Figure 1. *Leishmania* spp. amastigote forms of in Giemsa staining, x100

Figure 2. The images of lesions seen in patients

from the centre of Gaziantep and 41 (64.0%) were from the villages. Syrian citizens have no history of travelling to Syria in recent years. In the 4-year period, the highest number of patient applications and positivity was in 2019 and 2020. There was very little positivity in 2022 and none in 2021 (Table 1). Statistically, there was no statistically significant difference between women and men, between 0-9 age group and other age groups, between Turkish citizens and Syrian citizens in terms of positivity rate. Of the 144 applicants we asked about their wounds, 113 (78.4 %) referred to the disease by its local name.

Table 1. Distribution of patients by years

	Turkish	Syrian	Total
2019	30	14	44
2020	6	9	15
2021	0	0	0
2022	4	1	5
Total	40	24	64

DISCUSSION

The leishmaniasis positivity rate of 44.4% in our study was found to be 46% and 50% in previous studies conducted in our city (8,9). Diagnosis rates of stained preparations vary between 30% and 96%. Reasons for this variation include the experience of the examiner, the location and method of lesion acquisition (10). Our study is limited in this respect and additional methods such as culture and polymerase chain reaction should be used for more efficient results.

The number of females and males with *Leishmania* was 40 (62.5) and 24 (37.5), respectively. In previous studies in our province, the rate of female patients was found to be 47.1% by Cömert et al. (11) and Eroglu and Özgöztaşi (6) 53.5% was found. The fact that women are more concerned about physical appearance than men may have increased the number of applicants.

In line with many studies, the highest number of applications and positivity was observed in the 0-9 age group in our study (11,12). As in many infectious diseases, the incidence of leishmaniasis is higher in the pediatric age group. The immune system in children is not fully developed, they cannot protect themselves against the vector, and they spend more time outside during the play-school age (3,5).

The presence of a single lesion in most of the cases and the majority of the lesions on the face are expected results in leishmaniasis. Midges bite exposed areas especially when people are sleeping. Since the face is the most exposed area in all seasons, lesions are mostly seen on the face. The fact that the lesions generally have a papule appearance, papule is an early stage finding and in our opinion, it is related to the awareness of the disease and early presentation. (3,5).

The mean duration of onset of lesions was 2.8 months according to the patients' testimony. This is consistent with the incubation period of the disease. The time of the first appearance of the lesion is based on the patient's statement and generally vague dates are given. Naturally, the duration of lesions is also subjective. However, the fact that the disease is recognized by most of the cases (78.4%) is positive and may help early presentation and early treatment.

The number of Turkish citizens who were positive was 40 (62.5%) and the number of Syrian citizens was 24 (37.5%). The high number and proportion of Turkish citizens is not something we expect. In many previous studies, it is seen that the number of patients with Syrian citizenship is higher than the number of local cases (5,6,8,9,11-14). The fact that Syrian patients are treated in our city (6) may have reduced the rate of anthroponotic transmission and the number of patients. None of the patients had a history of travelling to Syria or abroad in recent years. This indicates that the source of transmission and infection is entirely in Türkiye. Most patients (64%) live in rural areas. This is usual for cutaneous leishmaniasis (5).

The data we evaluated in our study varied over the years. From January 2019 until April 10, 2020, when there was a lockdown due to the pandemic, the number of patients was consistent with previous years. After this date, although outpatient services were provided from time to time, the number of applications and cases decreased significantly. In March 2022, the health system started to work completely, and although there were applications, there was no noticeable increase in cutaneous leishmaniasis cases. This may be due to the fact that all travel between villages, cities and countries has stopped, and people cannot even go outside. Although the pandemic is an unpleasant situation, it is a fact that our cutaneous leishmaniasis cases decreased during and after this period.

CONCLUSION

Migration is expected to increase in the world due to wars, climate crisis, economic and social problems. Cutaneous leishmaniasis, which is one of these diseases, is carried by migration, decreases in large-scale isolations such as pandemics, and its spread can be prevented with correct diagnosis and treatment. Although the number of patients may change over time and place, cutaneous leishmaniasis is a disease that threatens the health of societies and should always be monitored.

***Ethics**

Ethics Committee Approval: Ethical approval was obtained from the Clinic Research Ethics Committee of the Gaziantep University (no: 2023/22, date: 12.04.2023).

Informed Consent: Retrospective study.

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