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SHORT COMMUNICATIONS

A CASE OF CUTANEOUS LEISHMANIASIS WITH THE ISOLATION OF THE PARASITE

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Dedicated to Dr. J. Šlais D.Sc. on the occasion of his 60th birthday

Abstract. Cutaneous leishmaniasis of the zoonotic, rural type caused by *Leishmania major* was diagnosed in a Czechoslovak citizen returning from Iraq. A *Leishmania* strain was isolated for the first time in Czechoslovakia from the skin lesion on the right forearm of the patient. No treatment was necessary because spontaneous healing of the lesion was well under way.

A considerable, recent rise in close contacts with countries of the torrid zone has created favourable conditions for an introduction of diseases endemic to these regions. Among these infections is leishmaniasis. So far, reports are available of visceral leishmaniasis imported to Czechoslovakia (Bednář, 1951, Hromec et al. 1967). Toward the end of 1980, we diagnosed a cutaneous leishmaniasis in a Czechoslovak citizen returning from Iraq, and succeeded in isolating the parasite, for the first time in Czechoslovakia.

MATERIAL AND METHODS

Before his departure to Iraq, the patient K. J., born in 1941, was examined on June 20, 1980 in the Centre for Tropical Diseases, at the Clinic for infectious diseases, Medical School Hospital, Košice. He was diagnosed as having hypertension. Skin changes were not found. The patient left Czechoslovakia on July 1980 and he was stationed in the south-western part of Iraq, about 80 km north of Basri in a tract of swampy and sandy soil, at about 20—25 km from the nearest settlement. In the daytime, he was attacked by tabanids, after sunset, from 6 p.m. to midnight, by small flies and mosquitoes. Apart from vagrant dogs, he did not observe any other animals (rodents) but evidently, there could not have been many there in the swamp-ridden area.

On September 22, 1980, the patient observed a painless erythema and a swelling of the skin appearing on the bottom third of his right forearm. Soon, the skin affection developed in a small boil which burst and released pus. Treatment with Ichtoxyl prescribed by the local physician was ineffective. Later, a crater with granulation developed in the centre of the boil. The patient returned to Czechoslovakia on October 13, 1980 and on October 28, 1980, underwent a complete, ambulatory examination at the Centre for Tropical Diseases. The skin lesion was evaluated as a furuncle (0.5—0.8 cm) with slightly elevated margins (Plate I, Plate II, Fig. 1). There was no enlargement of regional, lymphatic nodules. Both the remaining objective findings and results of laboratory examinations were normal. Because the skin lesion did not heal, the patient was returned to the Centre for Tropical Diseases with a diagnosis suspective of leishmaniasis. In order to confirm the diagnosis by laboratory tests, the patient was transferred to the Department of Parasitology, District Station of Hygiene, Košice, on December 8, 1980.

Following a superficial disinfection of the boil by means of a pulpextractor (a stomatological needle with a thread), seven samples were taken from the borderline between the healthy skin and the lesion. Smears on slides were made from four of these samples, three samples were inoculated into condensation water underlying an NNN blood agar medium.

RESULTS

The most numerous component of the smear preparations were erythrocytes with an incidental admixture of blood. The next in quantity were flat epithelial cells, lymphocytes, plasmic cells and macrophages. The number of neutrophiles present was small. Ovoid corpuscles (2—5 × 1.7 × 2.0 μm) with a larger ovoid and a smaller rod-shaped structure inside them staining a dark red to bluish colour with Giemsa, were found either in an occasional macrophage or extracellularly. The remaining part of the corpuscle, staining a faint blue or grey colour, frequently resembled a vacuole.

The morphology of the structures inside the macrophages suggested that these are amastigotic of leishmanial stages. The correctness of our diagnosis was confirmed by the finding of promastigotic stages in the NNN agar on day 9 of inoculation.

DISCUSSION

Two forms of cutaneous leishmaniases of the Old World can be distinguished from the mode of development of the lesion. These are: the anthroponotic form with a longer incubation period, a dry ulcer and a prolonged period of spontaneous healing, and the zoonotic form with a short incubation period, a wet ulcer and a shorter healing period (Šerý 1979). Bray (1974) distinguished five *Leishmania* species of the Old World — *L. infantum*, *L. donovani*, *L. tropica*, *L. major* and *L. aethiopica* of which only *L. tropica* and *L. major* cause cutaneous leishmaniases. In our patient, the first sign of the disease (a skin erythema) appeared 63 days after his departure from Czechoslovakia, a span of time qualified as a short incubation period. Pus released from the ruptured boil indicated that the ulcer was of the wet type. At the time of the parasitological diagnosis, i.e., at day 77 from the first appearance of the skin erythema, it was already at an advanced state of healing (Plate I, Plate II, Fig. 1). Building upon this knowledge, we diagnosed the disease as a cutaneous leishmaniasis of the zoonotic, rural type caused by *Leishmania major* (Jírovec 1977, Bray 1974).

The isolated strain, the first *Leishmania* strain isolated in Czechoslovakia, has been maintained in two different ways, i.e. at the Parasitological Department of the District station of hygiene in Košice on NNN agar at 25 °C adding to it 2—4 drops of sterile saline solution on days 7—10 after reincubation. Mobile promastigotes were present for a maximum of 78 days, good growth was observed for a period of 40—50 days. Cultures were re-inoculated under sterile conditions at a maximum age of 4 weeks. Each new medium was tested for its sterility.

At the Department of Parasitology and Hydrobiology, Charles University, Prague, the isolated strain is stored in a frozen state in liquid nitrogen from the third passage onwards.

In their survey on the incidence of leishmaniases in Iraq, Rassam and Al-Mudhaffar (1979) recorded an endemic incidence of kala-azar for the Bagdad area with about 5 000 cases a year, mostly children. Since kala-azar is not listed among the reportable diseases, the first strain was isolated as late as in 1967. The survey does not contain data on the incidence of cutaneous leishmaniases in Iraq. Other authors (Jírovec 1977, Šerý 1979) regard Iraq as an endemic area of cutaneous leishmaniasis.

Krampitz (1976) emphasized the importance of a correct diagnosis of cutaneous leishmaniasis in Central Europe with regard to the fact that cutaneous leishmaniases are among the most frequent parasitic diseases introduced to the German Federal Republic from countries of the torrid zone.

There was no necessity to treat the patient because good progress was made in the spontaneous healing of the lesion (Plate II, Fig. 2).

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ПЕРВЫЙ СЛУЧАЙ КОЖНОГО ЛЕЙШМАНИОЗА С ВЫДЕЛЕНИЕМ ПАРАЗИТА

М. Гибода и М. Маловеска

Резюме. Описан случай кожного лейшманиоза зоонотического типа, возбудителем которого *Leishmania major*, у гражданина ЧССР после его пребывания в Ираке. Паразит был изолирован из предплечья правой руки и это первая находка этого вида в Чехословакии. Ввиду того, что спонтанное заживление протекало хорошо, терапия не применялась.

REFERENCES

BEDNÁŘ B., Differential diagnosis and confirmation of visceral leishmaniasis kala-azar in a bioptic examination. Čas. lék. čes. 90: 1019—1020, 1951. (In Czech.)

BRAY R. S., *Leishmania*. Ann. Rev. Microbiol. 28: 189—217, 1974.

HROMEC A., ĎURIŠ I., HOLLÝ D., Case of visceral leishmaniasis kala-azar. Bratisl. Lek. listy 48: 667—674, 1967. (In Slovak.)

JÍROVEC O., Parasitologie pro lékaře. (Medical parasitology.) Avicenum, Praha, 798 pp., 1977. (In Czech.)

KRAMPITZ H. E., Nach Zentraleuropa importierte Hautleishmaniase — Beobachtungen und Überlegungen ausserhalb ihrer Naturherde. 2. Internat. Arbeitskoll. Naturh. Infektionskrankh. Zentraleur., Graz, 25. 2—28. 2. 1976, pp. 437—438, 1976.

RASSAM M. B., AL-MUDHAFFAR S. A., The primary isolation of *Leishmania donovani* from Iraq on different culture media. Ann. Trop. Med. Parasitol. 73: 245—347, 1979.

ŠERÝ V., Nemoci na zemi. (Diseases in the World.) Academia, Praha, 355 pp., 1979. (In Czech.)

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Fig. 1. The ulcer at day 77 from the first time of the appearance of the disease.

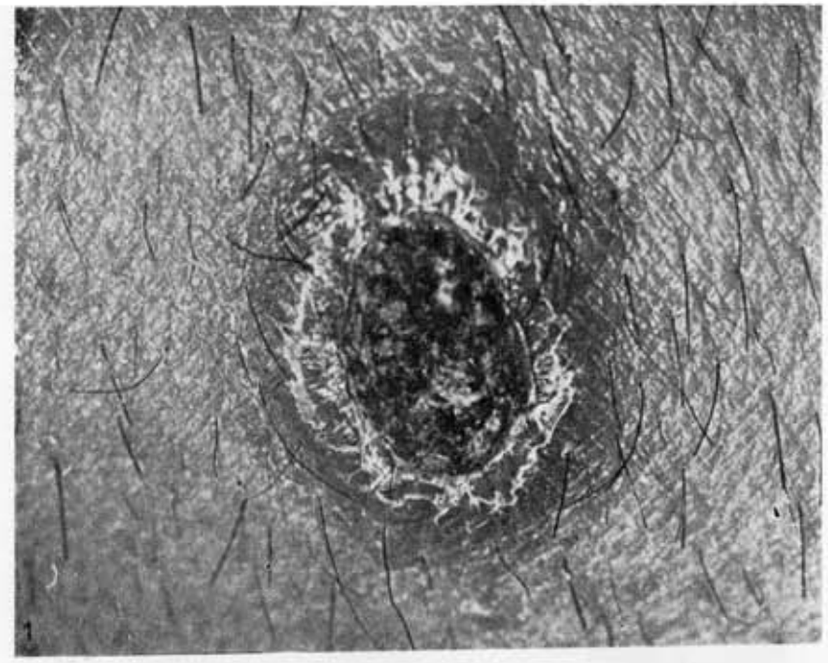

Fig. 1. Detail of the ulcer from Plate I. **Fig. 2.** Spontaneously healed ulcer five months after the isolation of the parasite.