Cutaneous leishmaniasis of the fingers: A case series including a case involving a pregnant woman

Mohammad M Al-Qattan MBBS[1], Amel AF El Sayed MBBS[2]

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The authors report a case series involving leishmaniasis of the fingers. The presentation was variable. The clinical diagnosis was suspected on obtaining travel history. The response to sodium stibogluconate was excellent. Hot compresses may be used in pregnant women because the teratogenicity of sodium stibogluconate is unknown.

Key Words: *Cutaneous leishmaniasis; Fingers; Pregnancy*

Leishmaniasis is an infection of the skin caused by the protozoan *Leishmania*. The disease is transmitted by sandflies in endemic areas. Approximately 1.5 million new cases occur annually, with 95% of cases occurring in only seven countries: Saudi Arabia, Syria, Iran, Pakistan, Afghanistan, Brazil and Peru (1).

The increase in both international travel and migrating populations has led to the increase in the number of reported cases in Europe and North America (2-4). Cutaneous leishmaniasis commonly affects the hand; hence, hand surgeons all over the world should be aware of the disease. The usual presentation in the hand is a nodule on the dorsum of the hand (following sandfly bite), which grows and ultimately forms an ulcer (2-4).

We report six cases of cutaneous leishmaniasis of the fingers. The cases were unusual because the site involved were the fingers (rather than the dorsum of hand) and because the presentation was variable including eczematous skin lesions. We also review the literature regarding cutaneous leishmaniasis of the hand to increase the awareness of hand surgeons to this entity.

METHODS

A retrospective chart review was performed on cutaneous leishmaniasis of the hand seen at the author's hand clinic in Riyadh, Saudi Arabia over the past 10 years. Six cases with cutaneous leishmaniasis were identified and all involved the fingers. Clinical data from the six cases are shown in Table 1. There were three males and three females (including one who was pregnant) with a mean age of 40 years. The dorsum or border of the fingers varied and included nodule ulcerative, nodular, ulceration and eczematous skin lesions. Demonstrative examples are shown in Figures 1A to 1C. All lesions were painless and there was no lymphadenopathy. Complete blood counts, erythrocyte sedimentation rate and C-reactive protein levels were all normal. The clinical diagnosis was suspected because all patients had a recent history of travel to the Southern part of Saudi Arabia (a well-known endemic area in the country). The diagnosis was confirmed by a skin biopsy demonstrating macrophages with intracytoplasmic inclusion bodies, which represent the dot-like organisms. The pregnant female was treated with hot compresses every 6 h for three weeks. The other five cases were treated with intravenous sodium stibogluconate (20 mg/kg/day) for three weeks.

RESULTS

The pregnant woman treated with hot compresses had an excellent response. The lesion completely resolved four weeks later and delivery was uneventful. The other five cases treated with intravenous sodium stibogluconate tolerated the drug well, with minimal side effects (mild malaise, myalgia) and complete healing five to seven weeks later. Patients were followed-up for a mean of four months and did not experience recurrence.

DISCUSSION

The life cycle of cutaneous leishmaniasis has been well described (1-4). The bite of the sandfly introduces the 'promastigotes' into the skin of the host (humans or dogs). The promastigotes are phagocytosed by macrophages, loose their flagella and multiply. The infected macrophages burst, releasing the 'amastigotes' (also known as Leishman Donovan bodies). The cycle is completed when the sandfly bites an infected host. Within the sandfly, the amastigotes develop into promastigotes.

TABLE 1
Clinical data from six cases of leishmaniasis of the fingers

Case	Age, years/sex	Site of infection	Clinical presentation	Systemic comorbidities	Follow-up, months
1	30/male	Middle finger, radial border around the distal interphalangeal joint	Nodule (3cm) with early central ulceration	Diabetes	6
2	32/female	Middle finger, dorsum of middle phalanx	Eczematous skin lesion with diffuse swelling of the finger	Pregnancy	4
3	65/male	Index finger, radial border around the distal interphalangeal joint	Ulcer	None	4
4	20/female	Middle finger, dorsum of proximal phalanx	Eczematous skin lesion	None	5
5	42/male	Ring finger, dorsum of middle phalanx	Eczematous skin lesion	None	3
6	48/female	Little finger, dorsum of proximal phalanx	Nodule (2 cm)	None	4

[1]*Department of Surgery;* [2]*Department of Obstetrics and Gynecology, King Saud University, Riyadh, Saudi Arabia*
Correspondence: Dr MM Al-Qattan, PO Box 18097 Riyadh 11415, Saudi Arabia. Telephone 966-505-27-4885, e-mail moqattan@hotmail.com

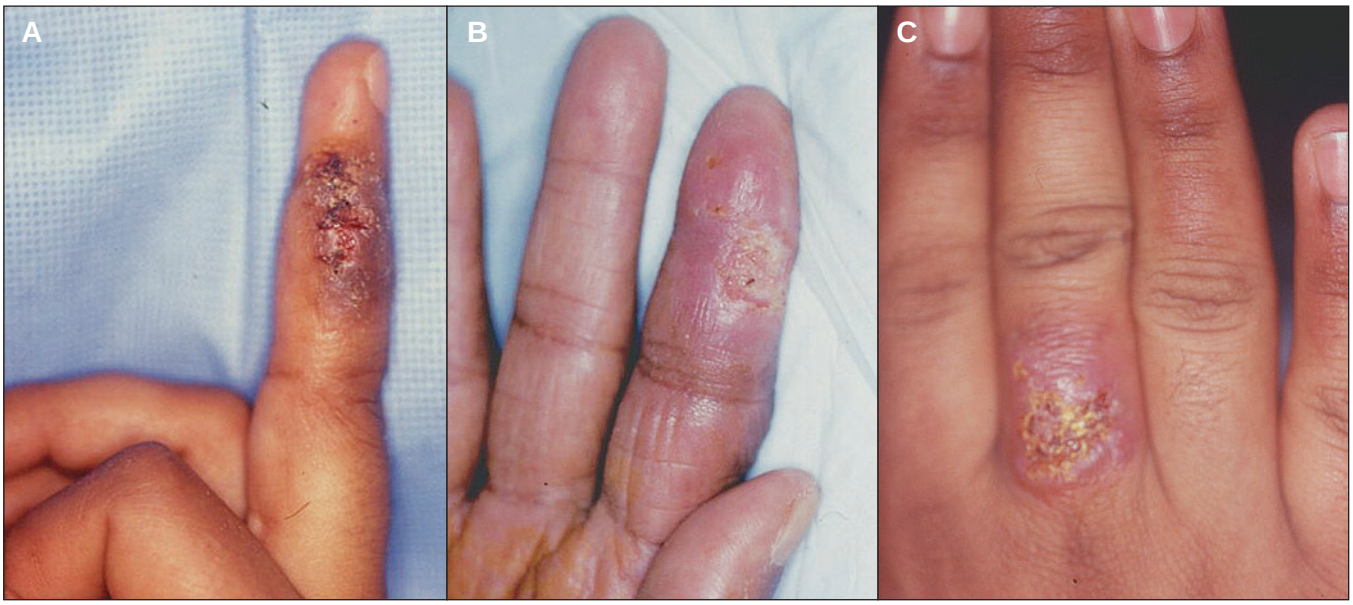

Figure 1) *Illustrative examples of cutaneous leishmaniasis of the fingers*. **A** *nodular growth with early central ulceration*. **B** *An ulcer*. **C** *An eczematous skin lesion*

The hand surgeon should suspect cutaneous leishmaniasis with the presence of any unusual skin lesion or ulcer, and should obtain the travel history of the patient. We reviewed the literature regarding the clinical presentation of cutaneous leishmaniasis of the hand. The two most common presentations are a nodule or a nodule with central ulceration on the dorsum of the hand (1-4). Other presentations may mimic a herpetic whitlow (5) or paronychia (6). Sporotrichoid cutaneous leishmaniasis is another rare presentation in the hand, and may relate to specific species of *Leishmania* (such as *L major*). The primary lesion is usually on the dorsum of the hand, which is accompanied by multiple satellite lesions along the draining lymphatics (7). This unusual presentation occurs due to the dissemination of amastigotes via the lymphatics to the subcutaneous tissues, and mimics the clinical presentation of fungal sporotrichosis of the hand (8).

Eczematous leishmaniasis of the hand is rare and mimics eczema (9). Three of our cases had this presentation in the fingers. Immunocompromised patients may present with extensive ulcers involving the entire upper limb (10). In these cases, medical treatment results in rapid healing without contracture or hypertrophic scarring and, hence, skin grafting is unnecessary. Finally, one case of extensor tendon rupture secondary to leishmania skin ulcer on the hand has been reported (11). Surgical management of the ruptured tendon should be delayed until resolution of the infection. Once suspected, a diagnosis of cutaneous leishmaniasis of the hand should be confirmed by further testing such as smears, histology, culture and polymerase chain reaction (1-7,9-11). In our cases, the diagnosis was confirmed by histology demonstrating amastigotic dot-like organisms.

The treatment of choice of cutaneous leishmaniasis is sodium stibogluconate, which is known to have an excellent response with minimal side effects (10), and this was confirmed in our series. Topical thermotherapy is less effective but is considered to be an acceptable method of treatment in endemic areas where drugs are not available or are expensive (12). One of our patients was pregnant and had an excellent response to hot compresses. We elected to use this method because the teratogenicity of sodium stibogluconate is unknown.

CONCLUSION

The presentation of leishmaniasis of the hand is variable. The clinical diagnosis is suspected on obtaining travel history. The response to sodium stibogluconate is excellent. Hot compresses may be used in pregnant women because the teratogenicity of sodium stibogluconate is unknown.

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