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A case report of herpes zoster in a cutaneous leishmaniasis patient

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ABSTRACT

Saudi Arabia is an endemic area of cutaneous leishmaniasis with *L. major* and *L. tropica* being the causative species. A 47-year-old patient presented to the clinic with large plaque of cutaneous leishmaniasis and sporotrichoid nodules. After 20 days of treatment with intravenous meglumine antimoniate, his leishmania improved but he developed large plaques of herpes zoster on the same limb of the leishmania lesion. Herpes zoster has been reported to be induced by systemic treatment with pentavalent antimonials in leishmania patients. In our patient, herpes zoster plaques were localized but involved multiple dermatomes in the same area of the leishmania lesion.

Keywords: Cutaneous Leishmaniasis, Herpes Zoster, Pentavalent Antimony, Tropical Medicine

1. INTRODUCTION

Cutaneous leishmaniasis (CL) is a skin parasitic infection transmitted by female sandflies. Based upon the causative species, it can be divided into new world or old world leishmaniasis. Old world leishmaniasis is mainly caused by *L. major, L. tropica, and L. aethiopica* (Desjeux, 1991). Saudi Arabia is considered one of the most endemic areas in western Asia (Alvar et al., 2012), with *L. major and L. tropica* being the causative species (Abuzaid et al., 2017). Herpes zoster (HZ) is an agonizing vesicular skin rash due to the reactivation of a latent varicella-zoster virus. Its reactivation could becaused by many risk factors such as such as age, immunodepression, immunosuppressive drugs, ultraviolet radiation, and some systemic diseases (Harpaz et al., 2008).

2. CASE REPORT

A 47-year-old male patient lives in a rural area in Qassim, a CL endemic region in Saudi Arabia, presented with a very large cutaneous plaque on the left elbow. He was otherwise healthy. The clinical presentation of the lesion was typical for CL with sporotrichoid nodules (Fig1 and 2). He was firstly treated with 4 weekly sessions of IL meglumine antimoniate, with insufficient improvement. A treatment with IM meglumine antimoniate 20mg/kg for 20 days was then given. By day 20, there was marked improvement of the cutaneous lesion and disappearance of the subcutaneous ones. Nevertheless,

the patient started to feel a burning sensation in the affected limb, so the treatment was not extended. After two days, the patient came back with typical HZ plaques (Fig 3). Treatment with oral acyclovir was given with complete clearance of HZ lesions in 7 days (Fig 4). CL plaque cured completely with no reactivation at 8-month follow-up.

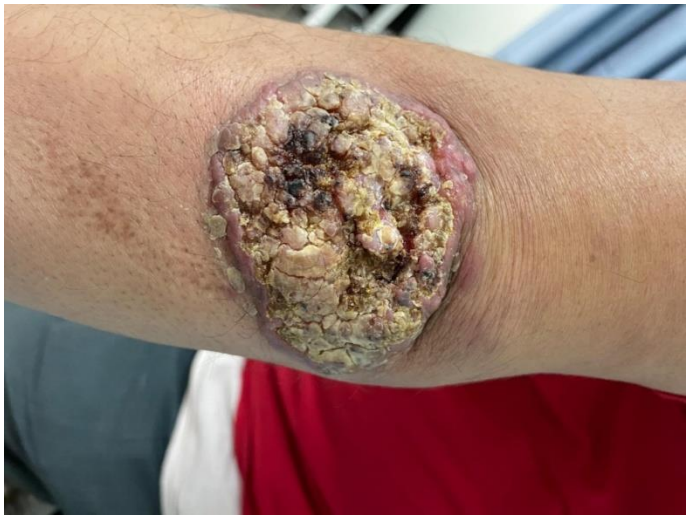

Figure 1 Large ulcerated plaque of cutaneous leishmaniasis on the left elbow.

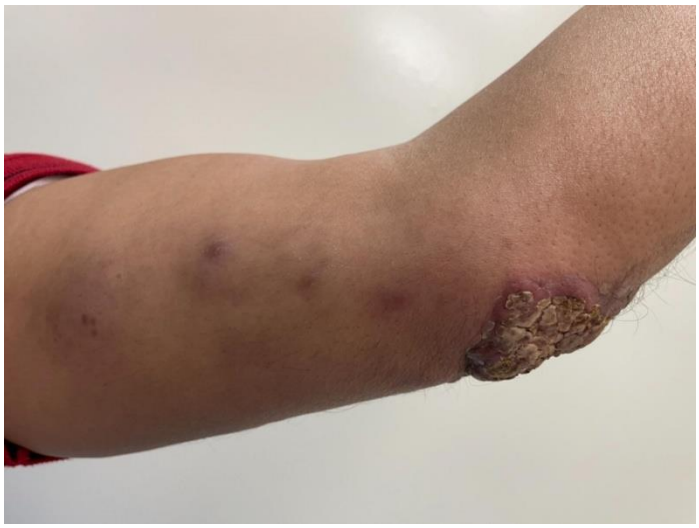

Figure 2 large ulcerated plaques on the left elbow with sporotrichoid nodules.

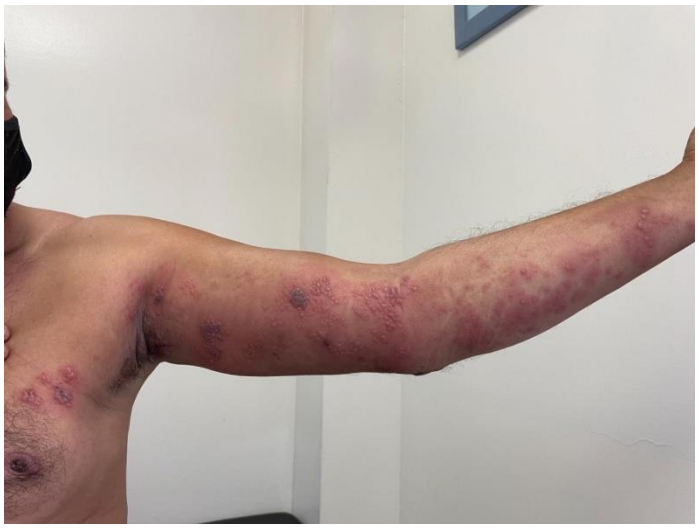

Figure 3 Erythematous plaques and vesicles of HZ on the left upper limb

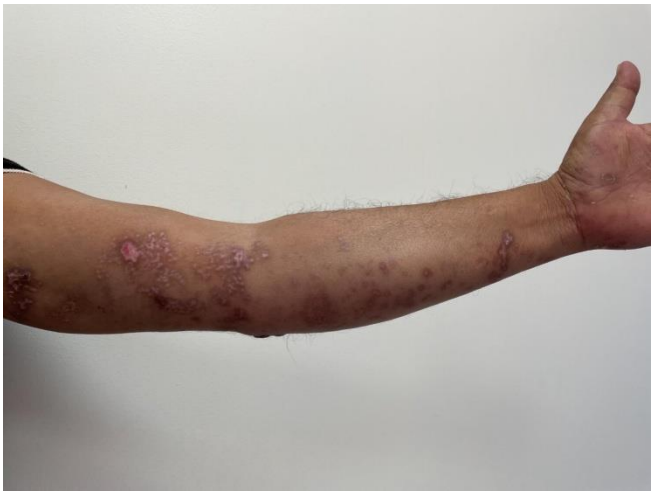

Figure 4 Complete healing of HZ lesions.

3. DISCUSSION

The timing of HZ indicates a causative rule of meglumine antimoniate. When reviewing the literature, few articles have already reported HZ induced by both types of pentavalent antimonials (Wortmann et al., 1998; Barros et al., 2014). In our patient, HZ did not appear after intralesional meglumine antimoniate sessions, but only when he was given 20mg/kg intramuscular sessions. This could indicate a dose-dependent systemic effect of meglumine antimoniate on the immune system. In a study on sodium stibogluconate, lymphocyte count and specifically CD4+ count were found to fall after 7 days of treatment (Wortmann et al., 1998).

A similar effect is thought to happen with meglumine antimoniate, but further studies are needed to confirm the pathophysiology. Wortmann et al., (1998) reported 3 HZ cases out of 84 treated patients. Barros et al., (2014) also reported 16 cases of HZ out of 2137 treated patients, 12 of them were treated with Meglumine antimoniate and the other 4 patients were treated with Sodium stibogluconate. The average time of appearance of HZ in this case series was 22 days after initiation of antimony therapy with a range of (8-36 days). CL is common in Saudi Arabia and most dermatologists are treating these patients with pentavalent Antimonials. Dermatologists treating leishmaniasis should be aware of this rare side effect.

4. CONCLUSION

This case report shows a reactivation of herpes zoster as side effect of pentavalent antimonials. These compounds, which are commonly used to treat leishmaniasis, are known to cause CD4+ lymphocytes count reduction. This immune effect is thought to be the cause of herpes zoster reactivation.

Clinical significance

Systemic administration of meglumine antimonials to treat leishmaniasis may lead to herpes zoster, probably by causing temporary reduction of lymphocytic count.

Acknowledgement

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Authors Contributions

Azzam I. Alkhalifah: Treating physician, supervising the manuscript preparation, final revision.
Rayan Alhumaid: Literature review, writing the first draft.
Azzam S. Alkhalifah: Literature review, writing the first draft.
Reem I. Alkhalifah: Final manuscript preparation and revision.

Informed consent

Both written and oral informed consent was obtained from patient and included in our study.

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Conflict of Interest

The authors declare that there are no conflicts of interests.

Data and materials availability

All data associated with this study are presented in the paper.

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