



Skin squamous cell carcinoma or Cutaneous Leishmaniasis? Case report and review of the literature

To the Editor,

The observation of advanced stages of skin squamous cell carcinoma (SSCC) in patients has dramatically increased during the current post-pandemic phase. The reduction of screening visits, access limitations to hospitals, and fear of contracting diseases within the hospital during the pandemic period in the wards have resulted in a progressive increase of head and neck cancers advanced cases, even in young patients not influenced by socio-economic problems [1].

Despite cutaneous cancer pathognomonic characteristics, unfortunately, the differential diagnosis with less common cutaneous lesions isn't always straightforward.

Leishmaniasis is a parasitic infection caused by a protozoan parasite. There are over 20 *Leishmania* species and over 90 species of sandflies that transmit the *Leishmania* parasite. The main forms of Leishmaniasis are cutaneous (CL), mucosal, and visceral, depending on the ability of the parasite to migrate from the skin to the mucosa and disseminate to internal organs. CL is the most frequent form and is characterized by the protozoa presence in the skin, causing painless chronic skin lesions. These lesions can occur all over the body and have different appearances, ranging from nodules to considerable ulcers. Frequently, these lesions leave lifelong scars and can result in severe disability or stigma [2–4].

The diagnosis is made by finding the protozoan parasite in human cells, as this parasite is an obligate intracellular protozoan. Unfortunately detecting this pathology is not easy since parasites are usually difficult to find or isolate in culture from biopsies [2].

According to the data reported by the WHO regarding the CL disease, about 95% of cases occur in the Americas, the Middle East, Central Asia and the Mediterranean basin. It is estimated that between 600,000 and 1 million new cases occur each year worldwide [3].

Leishmaniasis is fortunately rare in humans in European countries, like Italy, where it could even be defined as anecdotal.

In non-endemic countries, the differential diagnosis of SSCC can be very difficult, but crucial. Moreover, the atypical clinical presentation of CL makes differential diagnosis with SSCC or cutaneous lymphomas very challenging.

Unnecessary surgical treatment should be avoided, and appropriate therapy should be prescribed to prevent disease complications [4,5].

We present the case of a patient coming to our attention from another hospital with the erroneous diagnosis of SSCC, while affected by CL. In our opinion CL should be added to the differential diagnosis guidelines even in regions considered free of the disease, as the misdiagnosis of SSCC it's a serious mistake and must be prevented [3].

The patient presented an extended ulcerated skin lesion on the right

zygomatic region that didn't present healing aspects in the past three months. The clinical appearance mimicked a cancerous ulceration with irregular margins, moderate tendency to bleeding, low-grade pain, tender to palpation in the middle with hedges augmented in consistency (Fig. 1).

Considering SSCC guidelines treatment, a large demolitive excision surgery, that would have left the patient with severe aesthetic and functional consequences, had already been planned. To verify the nature of the lesion an incisional biopsy was performed and the anatomopathological report found: focal images of pseudoepitheliomatous squamous hyperplasia and presence of numerous hematoxylin bodies, suggesting a parasitic infection (amastigotes).

The presence of amastigotes is fortunately the only diagnostic figure of leishmaniasis and depends on T cell response. On the other hand, the presence of pseudoepitheliomatous squamous hyperplasia, representing chronic epithelial irritation seen in leishmaniasis, can mimic an SSCC. Therefore, the differential diagnosis with SSCC was not immediate.

Another pathological aspect characterizing the patient and discouraging the diagnosis of cancer was the presence of different lesions, all over the body, at different stages of healing (Fig. 2).

This important data wasn't considered in the first hospital, leading to a diagnostic and therapeutic delay.

Therefore, the patient started systemic therapy for leishmaniasis and now has completely recovered.

In the literature only four case reports describe mistaken differential diagnosis between CL and SSCC that led to an inadequate treatment of CL-affected patients.

In Oetken et al. case the patient was surgically treated to remove the lesion, but the histological examination reported a diagnosis of CL [5]. In other two cases described by Khorsandi-Ashtiani et al. and Quintella et al. the differential diagnosis was correctly conducted thanks to additional histopathological and serological examinations [6,7]. On the other hand, in the last case published by Prieto et al. the patient was treated for CL but he was unfortunately affected by a SSCC with lymphadenopathy, leading to a cancer progression [8].

Since leishmaniasis is not endemic in Italy the lack of awareness among healthcare workers could lead to a misdiagnosis and improper demolition surgical treatment, as seen in the first case report.

Moreover, CL is also referred to as "the great imitator" [9] and differential diagnosis with SSCC can be very challenging, considering both acute and chronic phases of cutaneous lesions. The absence of pain is an important factor that can help with the clinical diagnosis, but sometimes a bacterial superinfection on these lesions can cause pain and tenderness to palpation [9]. Saab et al. study showed that in 145 biopsy samples

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Fig. 1. Ulcerated skin lesion on the right zygomatic region.



Fig. 2. Lesion on the right ear.

performed before treatment, 68 cases (46,8%) of lesions presented typical CL histopathological characteristics, confirmed by PCR, while 6 cases (4%) of the sample were suggestive for SCC [10].

It is therefore clear that, due to the pathology characteristics, the unequivocal diagnosis of CL is very complex.

In conclusion, CL must be considered in the differential diagnosis workflow for head and neck skin cancer lesions; the ease of traveling worldwide, new migratory flows, climate changes, and other factors place us in front of different types of skin diseases, less known in our countries, but important to recognize to ensure the patient receives proper treatment.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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