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Case Report

ENDONASAL LEISHMANIASIS IN A FROZEN SECTION BIOPSY SPECIMEN

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SUMMARY – We present a case of endonasal leishmaniasis diagnosed on a frozen section biopsy specimen obtained from a 47-year-old woman treated with corticosteroids and anti-TNFα for rheumatoid arthritis. Similar cases of isolated mucosal leishmaniasis have not yet been reported in Croatia. Microscopic analysis of the biopsy specimen sent for frozen sections revealed *Leishmania* amastigotes in macrophages infiltrating nasal mucosa. Subsequent communication with the referring clinician revealed that the patient had been diagnosed with visceral leishmaniasis 13 years prior to current biopsy. Thus, the present nasal lesion was interpreted as a solitary lesion related to reactivation of the previous infection. She received liposomal amphotericin B which led to prompt amelioration of the lesion. As shown in the present case, clinical presentation of leishmaniasis is unspecific and can mimic many other conditions, especially in the setting of concomitant immunosuppressive and anti-inflammatory treatment. It is important to be aware of this entity in order to treat such patients properly.

Key words: *Biopsy; Immunosuppressive treatment; Nasal leishmaniasis; Visceral leishmaniasis reactivation*

Introduction

Leishmaniasis is a parasitic infection that may have numerous clinical manifestations. It is caused by the protozoan parasite *Leishmania* spp. and transmitted by sandflies. There are three major forms of the disease in humans: cutaneous (CL), mucocutaneus (ML) and visceral (VL)[1].

Leishmaniasis is an endemic disease affecting mainly poor, developing countries. More than 90% of VL cases occur in six countries, i.e., in India, Bangladesh, Sudan, South Sudan, Ethiopia and Brazil[2]. More widely distributed is CL that affects three main epidemiological regions, i.e., America, Mediterranean basin and western Asia[2]. However, an increasing number of world travelers have brought leishmaniasis to many nonendemic and developed western countries. We present a case of reactivated VL presenting with localized involvement of nasal septum in a female patient from Croatia.

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Case Report

A 47-year-old female initially presented with a slightly exophytic, reddish nasal mass measuring 1 cm, located on the right side of the nasal septum. She had a one-year history of labored breathing and occasional epistaxis. The patient also suffered from rheumatoid arthritis in the last ten years and underwent six cycles of *in vitro* fertilization. She was on therapy with corticosteroids for several years and started receiving anti-TNFα in the last year prior to current state. Computerized tomography from external institution revealed close contact between nasal septum and right-sided lateral nose wall. Other laboratory and clinical findings were unremarkable.

During clinical and laboratory work-up in the next ten days, initial lesion progressed through the nasal septum on the left nasal vestibule and presented as an ulcerated lesion covered by crust (Fig. 1). Incisional biopsy was obtained and sent for frozen section analysis with clinical suspicion of neoplasm or Wegener granulomatosis.

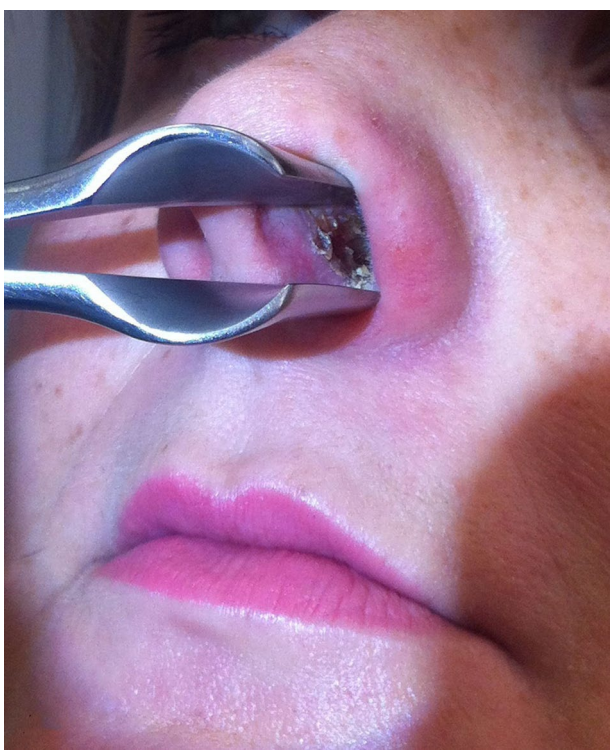

Fig. 1. Endonasal lesion covered by crust.

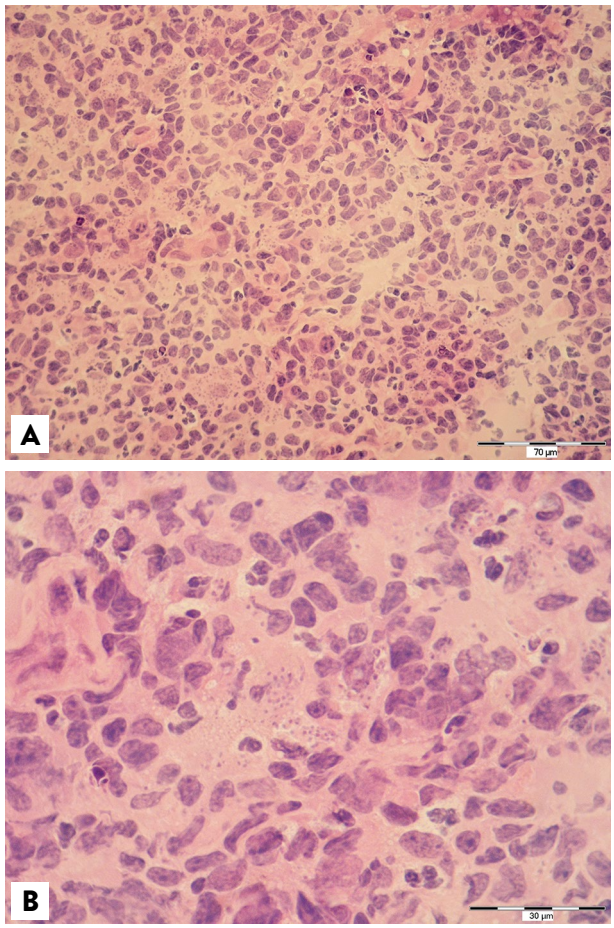

Fig. 2. Microscopic appearance of the lesion with inflammatory infiltrate and Leishmania amastigotes: HEx400 (A); HEx1000 (B).

The specimen was an irregular tissue sample measuring 6 mm. Microscopic analysis revealed a partially necrotic tissue fragment with an extremely abundant inflammatory infiltrate consisting of plasma cells, lymphocytes and macrophages (Fig. 2a). Careful examination led to identification of small, round to oval organisms in macrophage cytoplasm (Fig. 2b), consistent with *Leishmania* amastigotes. Subsequent communication with a clinician revealed that the patient had been diagnosed with VL 13 years prior to current biopsy. Therefore, the biopsy was signed out as inflammatory infiltrate consistent with nasal leishmaniasis. The patient was admitted for treatment and received liposomal amphotericin B, 200 mg/day intravenously for 15 days (total 3000 mg). This treatment led to

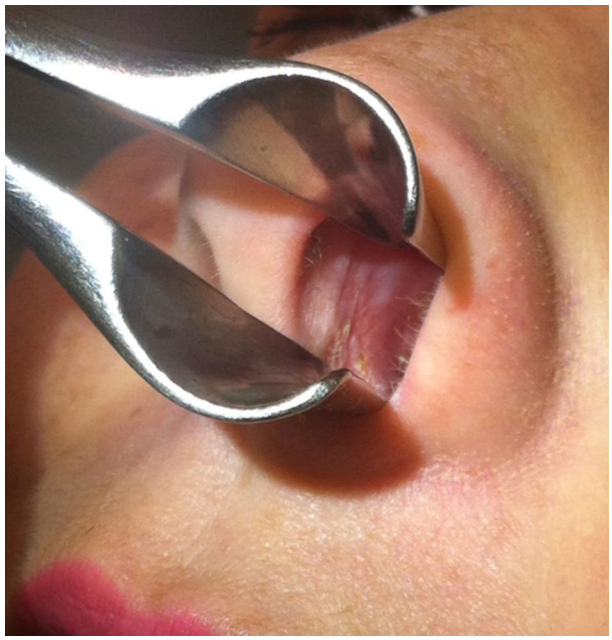

Fig. 3. Regression of the lesion after treatment.

prompt amelioration of the nasal lesion (Fig. 3). After one year of follow up, the patient is still well, without recurrence.

Discussion

Leishmaniasis is a tropical disease with about 2 million new cases diagnosed each year. Isolated mucosal lesions are rarely seen outside of the tropics. They are usually found in patients suffering from VL in India or Sudan[3]. Southern Adriatic coastal zone of Croatia is a known endemic area for VL and CL[4]. There are few reports of patients with a VL relapse during immunosuppressive treatment in the Mediterranean basin area[5-7].

To the best of our knowledge, isolated cases of mucosal lesions have not yet been reported in Croatia. In the present case, the diagnosis was made tentatively on frozen section slides, which has not been reported so far either. The patient's history of VL and prompt regression upon treatment with amphotericin B confirmed the diagnosis. Moreover, our patient was also receiving immunosuppressive and anti-inflammatory treatment, which is an established predisposing factor for VL reactivation.

Identification of parasite DNA by polymerase chain reaction is the most sensitive method but not technically available in all cases[8]. Light microscopic examination of the lesions in patients with CL and ML is one of several possible diagnostic methods. Most common specimens for microscopic examination and confirmation of VL are bone marrow or spleen aspirates. However, biopsy of skin or mucosal changes can also be performed.

Clinical presentation of leishmaniasis can mimic many malignant conditions, other infectious and autoimmune diseases, or vasculitides. CL and ML are reported as the possible causes of midline destructive disease, some with impressive and massive involvement of facial structures[9-11]. Histologic findings suggestive of leishmaniasis include inflammatory infiltrate consisting of macrophages, neutrophils, plasma cells, small epithelioid granulomas, and for definitive diagnosis, identification of amastigotes. However, abundant amastigotes are found in only 45% cases[12].

Conclusion

Advanced globalization and large numbers of world travelers have brought leishmaniasis to non-endemic areas. Moreover, the widespread use of anti-inflammatory and immunosuppressive drugs is a known contributory factor for the onset of leishmaniasis or its reactivation in previously treated patients. Epidemiologic data in unusual clinical presentations of suspicious lesions can be very helpful and low-budget tool in narrowing the differential diagnosis. It is important to be aware of this entity and its presence in non-endemic areas, as well as in order to make an accurate diagnosis and treat such patients properly.

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Sažetak

ENDONAZALNA LIŠMENIJAZA NA UZORKU ZA SMRZNUTU BIOPSIJU

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U ovom radu prikazujemo iznimno rijedak slučaj endonazalne lišmenijaze dijagnosticiran na uzorku tkiva namijenjenom za smrznutu biopsiju u bolesnice koja je na terapiji imunosupresivnim i protuupalnim lijekovima. Slični slučajevi izoliranih mukoznih lezija dosad nisu objavljeni u Hrvatskoj. Četrdesetsedmogodišnja bolesnica pregledana je zbog egzofitične tvorbe promjera 1 cm na desnoj strani nosnog septuma. Bolesnica inače boluje od reumatoidnog artritisa i na terapiji je kortikosteroidima i anti-TNFα lijekom. Učinjena je biopsija lezije i poslana na analizu smrznutim rezom. Mikroskopskom analizom nađen je gusti upalni infiltrat bogat makrofazima. Pažljivom analizom otkriveni su mali okrugli do ovalni mikroorganizmi u citoplazmama makrofaga prisustvo kojih je pobudilo sumnju na amastigote lišmenije. U razgovoru s kliničarom dobiven je podatak da je bolesnica prije 13 godina preboljela visceralnu lišmenijazu. Nalaz je ispisan kao upalni infiltrat s mikroorganizmima indikativnim za lišmenijazu. Bolesnica je liječena liposomnim amfotericinom B, što je dovelo do brzog nestanka lezije. Klinička slika lišmenijaze je nespecifična i nalikuje brojnim drugim stanjima, osobito u kontekstu kada su bolesnici na imunosupresivnoj i protuupalnoj terapiji. Važno je osvijestiti postojanje ovog entiteta kako bi se takvi bolesnici uspješno prepoznali i liječili.

Ključne riječi: *Biopsija; Imunosupresivno liječenje; Lišmenijaza nosa; Reaktivacija visceralne lišmenijaze*