


Chronic Bilateral Earlobes Thickening: A Case Report of Irritant Contact Dermatitis Mimicking Leprosy

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ABSTRACT

Introduction: Irritant contact dermatitis (ICD) is an inflammatory cutaneous disorder induced by the breakdown of the barrier and activation of innate immune responses. In the chronic stage, plaques thicken and cause scaling, hyperkeratosis, fissures, rhagades, and/or lichenification. **Case:** A 34-year-old male presented with both earlobe thickening and minor numbness, particularly while sweating or being exposed to direct sunlight. Physical examination revealed erythematous patches, as well as edema and thickness of both earlobes. Patch test and slit skin smears yielded negative findings, ruling out allergic contact dermatitis (ACD) and leprosy. The diagnosis of irritant contact dermatitis was caused by sweat and sun exposure. The treatment consisted of twice daily of desoximethasone and mupirocin cream, and 10 mg loratadine once daily. **Discussion:** ICD is an inflammatory cutaneous disorder induced by the breakdown of the skin barrier and the activation of the innate immune response. Thickening and numbness of both earlobes are caused by repetitive irritation from sweat and sunlight exposure over time. **Conclusion:** Irritant contact dermatitis in both earlobes should be differentiated from other skin diseases, particularly leprosy.

Keywords: Case report, earlobe thickening, irritant contact dermatitis, leprosy.

ABSTRAK

Pendahuluan: Dermatitis kontak iritan (DKI) adalah kondisi inflamasi kulit yang disebabkan oleh rusaknya sawar kulit dan aktivasi respons imun. Pada tahap kronis, akan timbul penebalan dan bisa menyebabkan hiperkeratosis, fisura, *rhagades*, dan/atau likenifikasi. **Kasus:** Seorang laki-laki berusia 34 tahun dengan penebalan daun telinga dan terasa sedikit baal, terutama saat berkeringat atau terkena sinar matahari langsung. Pada pemeriksaan fisik ditemukan plak eritematosa, serta edema dan penebalan di kedua daun telinga. Uji tempel kulit dan pemeriksaan kerokan kulit terhadap bakteri tahan asam (BTA) negatif, hasil ini menyingkirkan kemungkinan dermatitis kontak alergi (DKA) dan kusta. Diagnosis dermatitis kontak iritan disebabkan keringat sendiri serta paparan sinar matahari. Terapi krim *desoximethasone* dan *mupirocin* dua kali sehari, serta *loratadine* 10 mg satu kali sehari. **Diskusi:** DKI merupakan kelainan inflamasi pada kulit yang disebabkan oleh rusaknya lapisan kulit dan aktifnya respons imun bawaan. Penebalan dan rasa baal pada kedua daun telinga disebabkan oleh iritasi berulang akibat keringat dan paparan sinar matahari dalam jangka panjang. **Simpulan:** Dermatitis kontak iritan pada kedua cuping telinga harus dibedakan dari penyakit kulit lainnya, terutama kusta. **Maria Ulfa Noor Alika, Felix Hartanto. Penebalan Daun Telinga Kronis: Sebuah Laporan Kasus Dermatitis Kontak Iritan Mirip Kusta.**

Kata Kunci: Laporan kasus, penebalan telinga, dermatitis kontak iritan, kusta.

INTRODUCTION

Irritant contact dermatitis (ICD) is an inflammatory cutaneous disorder caused by skin barrier breakdown, caused by external substances or environmental factors that weaken the skin's barrier. Irritant contact dermatitis is typically difficult to diagnose since there is no accurate confirmatory test; it is frequently used as a default diagnosis when allergic contact dermatitis and leprosy have been ruled out. Early detection, prevention, and treatment are critical in management, particularly if it is related to occupational ICD.[1] ICDs may develop anywhere in the body, with both ears being fairly uncommon, and are often caused by irritation from the earring or piercing substance. In this case, diagnosis was hampered by the similar appearance of both earlobes, which resembled leprosy.

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CASE

A 34-year-old male with both earlobe thickening and minor numbness. Both earlobes were reddened and swollen while sweating and exposed to sunshine. It's extremely irritating, and sores may emerge if scratched too hard. Accidental stroke and massage made the sores worse and irritating. This problem has been present for years, particularly while sweating or being exposed to sunlight for an extended period of time.

The history of piercing and wearing earrings was denied, as was the use of lotion or other materials on both earlobes. A history of any allergies was denied. No additional lesions on the rest of the body. The presence of any white spots on the face or torso was also denied. He did not complain of any numbness in either the palms or soles of his feet. A history of leprosy in the family or current treatment was denied.

Physical examination revealed erythematous patches on both earlobes, as well as edema and thickness throughout the earlobes **(Figure)**. His earlobes also had numerous scales and itching sores. No other lesions were identified. No thickening of the great auricular, ulnar, common peroneal, or posterior tibial nerves.

Patch tests to various substances yielded negative findings, as did slit skin smears from both earlobes, ruling out allergic contact dermatitis (ACD) and leprosy. Chronic irritant contact dermatitis caused by his own sweat was diagnosed. The treatment consists of desoximetasone cream and mupirocin cream twice a day for scratch-injured lesions and loratadine 10 mg once daily for the itch. This treatment was maintained for two weeks and resulted in considerable improvements. We advise the patient to also avoid exposure to heat and direct sunlight.

DISCUSSION

Irritant contact dermatitis (ICD) is an inflammatory cutaneous disorder induced by the breakdown of the skin barrier and the activation of innate immune responses.[1,2] External substances or environmental factors cause damage to the skin barrier, resulting in ICD. ICD often affects the hands and can affect people of all ages and genders.[1] ICD is more frequent than allergic contact dermatitis (ACD), and it is the most common type of occupational skin disease.[1] Photo contact dermatitis (an ICD subtype) causes lesions only in areas exposed to sunlight, although the allergen also touches protected areas.[3] The acute stage is marked by redness, swelling, leaking, crusting, papules, and/or blisters. In contrast, in the chronic stage, plaques thicken and cause scaling, hyperkeratosis, fissures, rhagades, and/or lichenification.[4] ICD accounts for 95% of occupational skin problems and is typically caused by chronic exposure to moderate irritants. It accounts for 80% of all contact dermatitis cases.[5]

Photo documentation by dr. Maria Ulfa Noor Alika

Figure. Thickened lesions on both earlobes. Note that the earlobes appear very erythematous and edematous. There are also visible wounds due to scratching.

ICD is a multifaceted response driven by both intrinsic (genetic) and extrinsic (environmental) elements that play important roles in its etiology.[6] Age, sex, body area, and history of atopy all influence ICD susceptibility. When analyzing ICD, it is also important to examine the irritant, exposure quantity, concentration, duration, frequency, and the surrounding environmental and mechanical impacts. It is uncertain whether endogenous or external variables have a stronger role in the development of ICD.[7]

The irritant triggering his condition was his own sweat and prolonged exposure to sunlight, as confirmed by the patient after he left his previous job that involved outdoor activities and moved to an office that frequently involved indoor activities for the last month; the complaints rarely recurred (or even almost never recurred), except if in outdoor activities for an extended period and was very sweaty. The most common type of ICD encountered is chronic ICD caused by repetitive exposure to a weak or marginal irritant over the years.[5] Sweat is considered a minor irritant for some individuals; this patient got recurrent irritation, culminating in lesions on both earlobes.

Heat, cold, humidity, and ultraviolet irradiation are all environmental conditions. Sweating is common when the skin is exposed to heat. Sweat retention can cause skin irritation because it is more irritating than water. Heat, particularly in conjunction with occlusion, can cause ICD.[8] An irritant's capacity to enter the skin is influenced by several factors, including its concentration, volume, and time of exposure. Increasing the volume and length of exposure increases an irritant's


capacity to permeate the skin. Increasing the intervals between exposures will typically lower the risk of irritation. In occupational-related ICD, workers may be able to continue owing to a "hardening phenomenon" of the skin, which can occur after extended exposure to a harmful substance without causing irritating contact dermatitis. This hardening process has a hyperkeratotic impact on the stratum corneum, resulting in a thicker stratum granulosum due to numerous inflammatory mediators and indicators.[9] Thickening of both earlobes in this patient was caused by repetitive exposure.

Occupational dermatitis is distinguished by pruritus, discomfort, redness, swelling, blisters or wheals, and dry, peeling skin. On physical examination, irritant contact dermatitis may appear as distinct regions of macular erythema, vesiculation, and hyperkeratosis.[9] Repeated exposure to irritants can have an additive impact, with first exposures causing an increase in trans-epidermal water loss (TEWL), followed by a reduction, indicating functional adaptation or skin hardening.[10] Burning, itching, stinging, discomfort, and pain are common symptoms of ICD, particularly in the early stages. The probability of ICD rises with the length, intensity, and concentration of the substance.[10] The most common subjective symptom of contact dermatitis is acute itching; discomfort, burning, and stinging sensations are all prominent symptoms. Itch is more common in ACD than in ICD.[4] Our patient acknowledged that his burning and stinging symptoms appear and worsen with perspiration and extended direct sun exposure.

Leprosy was suspected because of thickening of both earlobes, similar to leprosy. However, disease history, family and surroundings history, and other factors did not support a leprosy diagnosis. He frequently worked in the field and was exposed to direct sunlight for extended periods of time. This is further confirmed by the negative findings of the slit skin smear investigation, which add to the evidence that this is not leprosy. However, a comprehensive examination to rule out leprosy is necessary, noting that misdiagnosis can lead to persistent disability affecting quality of life.

Leprosy is a chronic infection caused by *Mycobacterium leprae*.[11] It predominantly affects the skin, eyes, and peripheral nervous system, potentially causing muscular atrophy and injury in certain parts of the body. The disease has a long incubation time and is frequently misdiagnosed as another skin or neurological issue.[12] Leprosy is associated with a variety of skin lesions, including macules, papules, plaques, nodules, and even diffuse infiltration (such as on the face and earlobes), a wide spectrum of symptoms due to alterations in immunological responses.[13] Its appearance might be similar to many different skin disorders. Despite a 20-year drop in leprosy prevalence as a result of the WHO's vigorous multidrug treatment, the disease remains a public health concern. One significant concern is a lack of access to competent healthcare experts for an appropriate diagnosis before therapy begins.[7]

Leprosy can present in the ear in a variety of forms, ranging from minor nodules to more severe ulceration and deformities such as megalobule. Uncommon types of lepromatous leprosy might resemble other cutaneous nodular lesions.[7] Isolated bilateral involvement of the earlobes without concomitant systemic or cutaneous signs is relatively unusual and might provide considerable diagnostic issues. While earlobes are regularly damaged, it is uncommon for both earlobes to be afflicted separately. This uncommon form of leprosy can confuse early diagnosis, especially when symptoms overlap with irritating contact dermatitis. Misdiagnosis is possible, especially if the healthcare provider is unfamiliar with unusual leprosy presentations.[14,15]

In this particular case, the patient's enlarged earlobes looked identical to diffuse infiltrates in leprosy. In chronic ICD, particularly when the predilection is in both earlobes, we must consider the potential diagnosis of leprosy.

CONCLUSION

Irritant contact dermatitis in both earlobes should be differentiated from other skin diseases, particularly leprosy. This case highlights the importance of careful clinical evaluation and exclusion of infectious and allergic causes before establishing a diagnosis of chronic ICD. Early recognition and avoidance of irritant exposure are essential to prevent recurrence and chronic thickening. Comprehensive patient education regarding trigger identification, protective measures, and appropriate topical therapy can significantly improve long-term outcomes and reduce the risk of misdiagnosis.

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