ARQUIVOS DE ASMA, ALERGIA E IMUNOLOGIA

Contact dermatitis to cinchocaine: is cross-reactivity between local anesthetics a problem?

Dermatite de contato à cinchocaína: a reatividade cruzada dos anestésicos locais é um problema?

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ABSTRACT

Contact dermatitis caused by local anesthetics from the ester group is more common than with the amide group. While cross-reactivity is well-documented within the ester group, it is less understood within the amide group and does not appear to occur between the ester and amide groups. We report a case of allergic contact dermatitis to cinchocaine, an amide anesthetic, with no reactivity to lidocaine. Differences in the chemical structure of amide anesthetics, such as cinchocaine's unique aromatic double-ring, might explain the lack of cross-reactivity. This case highlights the importance of accurate diagnosis and thorough allergological evaluation. Testing as many amide-type anesthetics as possible is recommended in cases of delayed allergy to any member of this family.

Keywords: Local anesthetics, drug hypersensitivity, contact dermatitis.

RESUMO

A dermatite de contato causada por anestésicos locais é mais comum no grupo dos ésteres do que no grupo das amidas. Embora a reatividade cruzada esteja bem documentada no grupo dos ésteres, é menos conhecida no grupo das amidas e não parece ocorrer entre os grupos dos ésteres e das amidas. Este caso de dermatite de contato alérgica à cinchocaína, um anestésico amida, sem reatividade à lidocaína, realça a importância de um diagnóstico preciso e de uma avaliação alergológica completa. Sugere que as diferenças na estrutura química dos anestésicos amida, como o duplo anel aromático único da cinchocaína, podem explicar a falta de reatividade cruzada. Testar o maior número possível de anestésicos do tipo amida é recomendado em casos de alergia tardia a qualquer membro desta família.

Descritores: Anestésicos locais, hipersensibilidade a drogas, dermatite de contato.

Introduction

Local anesthetics from the ester group are relatively common causes of contact sensitization. In contrast, sensitization to anesthetics from the amide group is considered rare. Cross-reactivity within the ester group is common and well recognized, whereas cross-reactivity between the amide and ester groups is not observed, and cross-reactivity within the amide group is poorly understood.[1-4]

Case report

A 42-year-old woman reported the development of pruritic, erythematous, and exudative skin lesions in the perianal region, extending to the upper posterior region of the lower limbs (Figure 1), on day 6 (D6) of using Scheriproct® rectal ointment (prednisolone caproate + cinchocaine hydrochloride) and Vessel® capsules (sulodexide). Her treatment was switched to Faktu® rectal ointment (policresulen + cinchocaine

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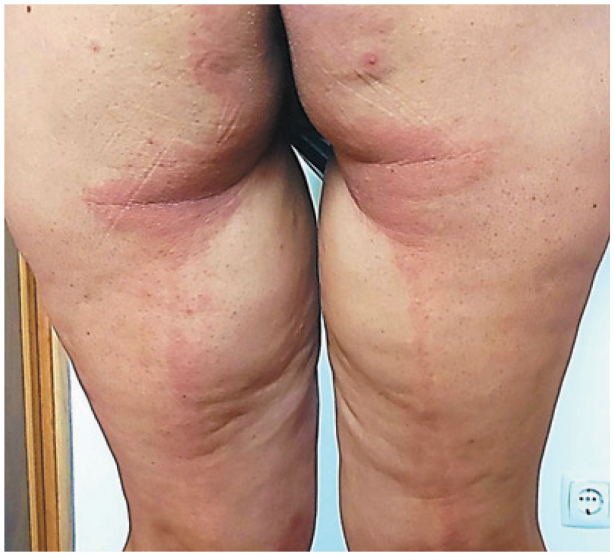

Figure 1
Clinical presentation of pruritic erythema in the perianal region

hydrochloride) and Daflon® tablets (bioflavonoids). However, her condition continued to worsen, leading to the appearance of a fungal infection in the same region. Her therapy was changed to Pevisone® ointment (econazole + triamcinolone acetonide), with no improvement, and then to Baycuten® (clotrimazole + dexamethasone acetate) and Salofalk® suppositories (mesalazine), with clinical resolution.

The patient was referred to the Allergy and Clinical Immunology department, where epicutaneous testing was conducted using corticosteroid and caine series, along with the medications previously used by the patient (to rule out reaction to inactive ingredients if all corticosteroids and local anesthetics were negative). The results showed strong positive reactions at D2 to cinchocaine hydrochloride (dibucaine, percaine) 5% (+++), quinoline mix 6% (+++ with cutaneous detachment), Faktu® (++), and Scheriproct® (++) (Figure 2). The other tests were negative, with readings on D2, D3, and D7 (Table 1).

Given the negative epicutaneous results for lidocaine hydrochloride and the patient's own ointment – Ultraproct® (fluocortolone pivalate + lidocaine hydrochloride, tested as a safe alternative) –, a drug challenge test with Ultraproct® cream was performed, with no skin reaction or local pruritus. Additionally, a subcutaneous challenge test with lidocaine produced no immediate or delayed reaction.

Discussion

The patient in this report presented allergic contact dermatitis to cinchocaine with tolerance to lidocaine hydrochloride, both of which belong to the amide group. The lack of cross-reactivity between these drugs underscores the importance of accurate diagnosis and thorough allergological examination, allowing the identification of the causative drug and the exploration of safe alternatives. Moreover, this case highlights the complexity of classifying and understanding cross-reactivity between local anesthetic agents, particularly within the amide group.

There are 3 potential sensitization groups among amide-type local anesthetics: benzene ring, thiophene ring, and quinoline derivatives. Notably, cinchocaine is a quinoline derivative that has a distinctive aromatic double-ring structure in its lipophilic aromatic ring.[2] This structural difference from other local amide anesthetics could explain the lack of cross-reactivity.

In the absence of definitive guidelines on cross-reactivity between different amide-type local anesthetics, it is recommended to test as many of them as possible in cases of delayed allergy to any member of this family. Although reports of concomitant contact allergies within the amide group are rare, it remains uncertain whether these cases represent true cross-reactivity or only concomitant contact allergies.

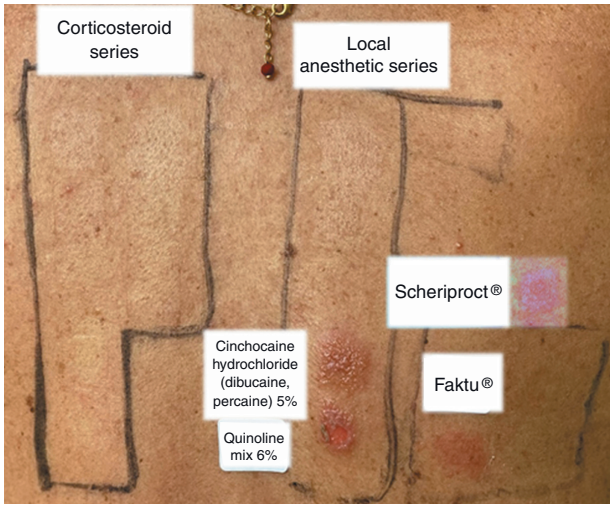

Figure 2
Patch testing with corticosteroids, local anesthetics, and ointments and medications used by the patient

Existing evidence on cross-reactivity between the ester and amide groups is limited to isolated case reports and a single series of 29 cases of allergic contact dermatitis from lignocaine, with inconsistent findings.[5] A comprehensive study involving simultaneous testing of multiple local anesthetics across all classes could be helpful in further clarifying these cross-reactivities.

Table 1
Patch testing results

	Patch results on D2 and D3	Patch results on D7
Corticosteroid series (in petrolatum)		
Hydrocortisone 0.1	Negative	Negative
Prednisolone 50 mg/mL	Negative	Negative
Betamethasone 1%	Negative	Negative
Betamethasone dipropionate 0.5%	Negative	Negative
Dexamethasone 1%	Negative	Negative
Hydrocortisone 17-butyrate 0.1%	Negative	Negative
Triamcinolone acetonide	Negative	Negative
Local anesthetic series (in petrolatum)		
Benzocaine (Anesthesin) 5%	Negative	Negative
Lidocaine (lignocaine, xylocaine) 5%	Negative	Negative
Procaine hydrochloride (novocaine chloride) 1%	Negative	Negative
Lidocaine hydrochloride 1%	Negative	Negative
Caine mix 10%	Negative	Negative
Cinchocaine hydrochloride (dibucaine, percaine) 5%	+++	+++
Quinoline mix 6%	+++	+++
Previously used medications (“as is”)		
Daflon®	Negative	Negative
Vessel®	Negative	Negative
Pevisone®	Negative	Negative
Faktu®	++	+
Scheriproct®	++	++
Baycuten®	Negative	Negative
Ultraproct®	Negative	Negative

It is acknowledged that patients with contact allergy to one local anesthetic do not necessarily need to avoid all other local anesthetics within the same group. However, whether all patients with allergic contact dermatitis to a specific anesthetic should be evaluated for potential cross-reactivity and alternative therapeutic options is a topic that warrants further discussion. The possibility of providing a therapeutic alternative without allergological examination remains uncertain.

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