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Original Research Paper

Pharmacology

ALLERGIC CONTACT CHEILITIS OF BOTH LIPS CAUSED BY WHITE PETROLEUM JELLY

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ABSTRACT White petroleum jelly is commonly used as a skin protectant for dry skin and dry lips. The active ingredient of white petroleum jelly is "petrolatum". Petroleum jelly very rarely causes hypersensitivity reactions. Even though it is a very rare case, allergic reaction to petroleum jelly is a potential problem of its common use of petroleum jelly for cosmetic and medical purposes. We report a case of a 25years old male patient with allergic contact cheilitis of both lips. The patient presented with complaints of cheilitis of both lips due to the white petroleum jelly application, which was treated with topical and oral steroids. Rechallenge was not done in the interest of the patient and due to ethical constraints. Due to the emerging adverse events related to white petroleum jelly, All health care providers should create awareness about the adverse events related to white petroleum jelly among the public. White petroleum jelly is used worldwide in most of cosmetic products, it should be used with caution. We can use natural cocoa butter kind of products as moisturizers instead of petroleum jelly.

KEYWORDS : white petroleum jelly, petrolatum, cheilitis, hypersensitivity, petroleum

INTRODUCTION

Cheilitis, a common inflammatory condition of lips, which can be caused by endogenous factors or exogenous factors and cosmetics like sunscreen agents, tanning creams, hair dyes, lip balms, lipsticks, nail polish, toothpaste, etc., medications, food items and nutritional deficiencies. White petroleum jelly is a mineral oil made from petroleum which acts by covering the skin with a protective film and preventing water loss, and infection and reducing itching. Used as a skin protectant to improve skin hydration, scaliness, eczema, and psoriasis[1]. In this report, we will discuss one of the rare cases of a 25year male clinically diagnosed with white petroleum jelly-induced cheilitis. Until now only 14 Skin and subcutaneous adverse drug reactions related to white petroleum jelly were reported to WHO worldwide.

CASE HISTORY

The 25years old male patient had complaints of dry lips and irritation due to wearing a mask continuously during the covid times, for which the patient himself applied white petroleum jelly (PETROLATUM) over both lips. The next day patient developed

- Swelling of both lips (Figure: 1)
- Pain over both lips (Figure: 1)
- Crusting over lips (Figure: 1)
- Fissures in lips (Figure: 1)
- Bleeding from lips (Figure: 1)

He reported to the private dermatology clinic. The case was clinically diagnosed as white petroleum jelly-induced cheilitis & angioedema. Further Rechallenge was not done in the interest of the patient and due to ethical constraints. He was treated with

- Tab. Methylprednisolone 16mg BD x 7 days followed by Tab. Methylprednisolone 8mg BD x 7 days followed by Once daily for 7 days
- Tab. Paracetamol 500mg BD (SOS) x 15days
- Tab. Fexofenadine 120mg BD x 15 days
- LIPZ cream(Non petroleum jelly containing Lip moisturiser) + Oraways oromucosal paste(Triamcinolone acetonide 0.1%W/W/PASTE) mixed external application 2-3times a day
- 0.9% Normal saline with Sterile-gauze sponging 2-4times a day

According to the WHO–UMC (World Health Organisation–Uppsala Monitoring Centre) causality assessment scale[2] and Naranjo Adverse Drug Reaction (ADR) probability scale[3], it is a probable reaction. The case was reported to AMC-Report No – RMC/AUG-2022/02 and uploaded through Vigiflow, which can be accessed through vigiaccess[4].

Figure 1: Clinical Features Are Seen In The White Petroleum Jelly-induced Cheilitis

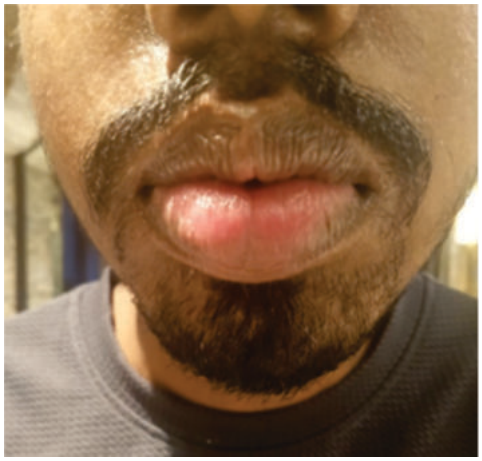

Figure 2: After Treatment Of Cheilitis

DISCUSSION

Cheilitis

Lip inflammation known as cheilitis can be either acute or persistent. The vermilion zone is where the inflammation first appears, but it can also affect nearby skin and, less frequently, the oral mucosa. Numerous variables, such as contact irritants or allergens, long-term sun exposure, nutritional inadequacies, as well as other cutaneous and systemic disorders, may contribute to its development[5-7].

Drug-induced Cheilitis

Almost all patients who use systemic retinoids, such as etretinate and isotretinoin, experience dryness, erythema, scaling, and cracking of the lips(which may extend to the angle of mouth). It may also be brought on less frequently by any other medicines that make mouth and lips dry[6],[8].

Allergic Contact Cheilitis

A delayed-type hypersensitivity reaction to allergens that come in contact with the lips can cause inflammation of the lips. Due to the potential irritating properties of various lipstick chemicals, it is also referred to as "lipstick cheilitis." Patch testing has been used to identify nickel, Myroxylon pereirae, and perfumes as the most prevalent cosmetic sensitizers. Lip dermatitis can be brought on by particular chemicals that are exclusive to lipsticks. For instance, azo colours, sesame oil, preservatives, ozonated olive oil, propolis, and copolymers. Other than lipsticks, a wide range of other chemicals that come into touch with the lips might cause allergic contact cheilitis[6],[9]. Lipstick cheilitis may show up as chronic itching and scaling, occasionally accompanied by oedema and vascularization, and may be limited to vermillion or may occasionally spread beyond. The skin around the mouth may be affected by cheilitis brought on by food[6],[10].

White Petroleum Jelly (PETROLATUM)

Petroleum jelly, a mineral oil derived from petroleum, works by coating the skin with a protective layer, halting the loss of moisture, fending off infections, and minimising itching. Improves skin moisture, scaliness, eczema, and psoriasis when used as a skin protectant. Petrolatum, or white petroleum jelly, is essentially non-irritating and non-sensitizing. Due to these characteristics, it is frequently employed in topical medications and cosmetics, and is regarded as the finest patch-test vehicle for the majority of drugs. Petrolatum hypersensitivity responses have not been seen frequently. We describe a case of white petrolatum-related allergic contact dermatitis. Petrolatum is a blend of semisolid hydrocarbons(CnH2n+2). Petrolatum comes in four different varieties: natural, synthetic, gatsch, and artificial. To eliminate odours and change colour, petroleum is purified to produce natural petrolatum. Yellow and white petrolatums are both made naturally. Compared to yellow petrolatum, the purification process takes longer in white petrolatum, so almost all of the yellow colour is eliminated. Refined paraffin oils and natural hydrocarbon waxes are combined to create synthetic petrolatum. By combining paraffin oil and the leftovers from petroleum distillation, Gatsch petrolatum is created. The final step in the production of synthetic petrolatum is the hydrogenation of synthetic hydrocarbons with carbon monoxide[6],[10].

White petroleum jelly causes adverse events when it comes in contact with abraded or fissured or injured skin and mucous membranes. So white petroleum jelly should be applied over the skin and mucous membranes with caution. Cheilitis, a delayed hypersensitivity reaction to petroleum jelly which caused inflammation of lips, is mediated by cytokines and T-helper cells.

CONCLUSION

We describe a case of allergic contact cheilitis brought on by white petroleum jelly on harmed skin. Petrolatum allergic hypersensitivity responses are uncommon. Despite the ubiquitous usage of petrolatum, few cases have been documented. Such patients can frequently be identified by their intolerance to a wide range of topical medications and their many positive patch-testing findings. Patch testing on scratched skin should be taken into consideration for patients with suspected petrolatum allergies if routine patch testing produces negative results because petrolatum can only trigger a reaction on injured skin. If synthetic petrolatum can be produced to have properties and advantages compared to those of natural petrolatum, it may be a beneficial replacement for natural petrolatum if petrolatum allergy becomes more prevalent in the future.

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