

Case Series

Vulvar Pruritus Improved with Dupilumab

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Abstract

Vulvar pruritus is a common complaint among girls and women that affects patients' quality of life and sexual function in women. This vulvar itching and burning sensation produces the "itch-scratch" cycle, causing thickened skin known as vulvar lichen simplex chronicus. The cause of vulvar itch is multifactorial and poorly understood. After failing conventional therapies, we report three cases of patients with vulvar LSC with successful treatment with dupilumab.

Keywords

- Vulvar lichen simplex chronicus
- Vulvar pruritus
- Dupilumab

INTRODUCTION

Vulvar pruritus is a common distressing skin disease among girls and women that affects patients' quality of life and sexual function in women. The cause of vulvar itch is multifactorial and poorly understood. Vulvar lichen simplex chronicus (LSC) is a pruritic skin disease from chronic rubbing and scratching with epidermal hypertrophy, characterized by well-demarcated plaques with exaggerated skin tension lines [1,2]. Vulvar pruritus and LSC are strongly associated with atopy but also can be attributed to other dermatologic conditions, neuropathy, systemic pruritus, irritants, and psychogenic etiologies [3]. Though multifactorial and poorly understood, Th2 cytokines including interleukin-4, interleukin-13, and interleukin-31, have been implicated in addition to itch receptors, neuropeptides, neurotransmitters in the pathogenesis of pruritus, prurigo nodularis, and lichen simplex chronicus [4,5]. Therapies include topical and systemic therapies, but lichen simplex chronicus can be challenging to treat [4].

Case 1

A 46-year-old woman presented with vulvar and perineal pruritus ongoing for 15 years. Physical exam revealed accentuated skin markings of vulva. Previous treatments included mid and high potency topical steroids which resulted in no improvement, and gabapentin and spironolactone by mouth, which resulted in mild improvement. She was subsequently started on dupilumab dosed for atopic dermatitis, which significantly improved her pruritus and lichen simplex chronicus. Unfortunately, the patient's insurance did not approve dupilumab, and therapy was discontinued after 2 months, and which has resulted in worsening of her LSC.

Case 2

A 15 year old girl was referred for vulvar pain ongoing since

8 years of age. Physical exam revealed an erythematous firm irregular plaque in a linear distribution localized to the left labia majora. Biopsy was performed and showed as spongiotic dermatitis with lichenification.

Previous treatments included topical corticosteroids with no improvement, intralesional steroids, and gabapentin by mouth, hydroxyzine by mouth and tricyclic antidepressants by mouth, all with no improvement. The patient was started on dupilumab dosed for atopic dermatitis, and she reported significant improvement in pruritus and sleep quality after 12 months.

Case 3

A 36 year old woman presented with vulvar pruritus ongoing for over 2 years. Physical exam revealed erythematous lichenified plaques on the labia majora and perineum. Previous treatments included high potency topical steroids, intralesional steroids, doxepin by mouth, all with no improvement. She was started dupilumab dosed for atopic dermatitis, and she reported significant improvement of her pruritus and LSC after 12 months.

DISCUSSION

Pruritic vulvar conditions, including LSC, affect patient's quality of life, producing interruption of work, sleep, sexual function, and general discomfort. The goal of treatment is to break the "itch-scratch" cycle and improve skin lesions with topical and systemic treatments [3,4].

Dupilumab is an IgG4 human monoclonal antibody that binds the alpha subunit of interleukin 4, effectively inhibiting interleukin 4 and 13 [3]. It has been approved by the Food and Drug Administration to treat moderate to severe atopic dermatitis, asthma, chronic rhinosinusitis, and eosinophilic esophagitis, and recently has been approved for the treatment of prurigo nodularis [6].

Th-2 cytokines, including IL-4 and IL-13, are implicated in the pathogenesis of LSC, like prurigo nodularis, and may explain the efficacy of dupilumab therapy in patients with recalcitrant vulvar LSC [4,5]. Dupilumab therapy is has demonstrated a low incidence of adverse events and was well tolerated by all 3 patients. To the best of our knowledge, we report the first cases of vulvar lichen simplex chronicus treated with dupilumab. While additional studies are required to investigate the safety and efficacy, duplimab offers a promising treatment option for vulvar LSC to stop the itch-scratch cycle and improve the quality of life of these patients.

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