

Scurvy presenting as vulvar folliculitis, a case report and review of the literature

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Precis

This case examines clinical features and care of a patient with scurvy presenting with vulvar folliculitis.

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Introduction

Vitamin C deficiency, is a disease that has been recognized since ancient times, with Hippocrates recognizing the sequela of scurvy.¹ Scurvy classically presents cutaneously with perifollicular hemorrhage that is most prominent on the extremities in addition to corkscrew hairs.² Additionally bleeding swollen gums, myalgias, and arthralgias are possible.¹ The prevalence rate for vitamin C deficiency in the United States is approximately 7.1%, with lower income

people and smokers at a higher risk.³ Treatment of vitamin C deficiency consists of nutrition supplementation. If oral replacement is possible, twice daily dosing for a total of 1000mg is preferred for maximal absorption.¹

Case Report

A 68-year-old post-menopausal female with a history of lichen sclerosus presented for routine follow up. Lichen sclerosus was well controlled with triamcinolone applied nightly (limited to the vulva). However, she noted a one-month history of red raised lesions on her vulva, perineum and buttocks. She was diagnosed by an outside dermatologist with vulvar folliculitis and prescribed chlorhexidine gluconate (Hibiclens®) for two weeks in addition to her usual maintenance steroid for lichen sclerosus, with no improvement of red raised lesions. On examination there were multiple erythematous pustules and

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nodules with halo erythema on the vulva, perineum, buttocks and medial thighs (Figure 1). A review of systems was positive for muscle aches and one lesion on each her face and right thigh. Laboratory analysis revealed a Vitamin C level of < 5 $\mu\text{mol/L}$ (normal 23-114

$\mu\text{mol/L}$) and a vitamin D, 25-OH level of 27 ng/mL (normal 20-80 ng/mL). Biopsy of a representative lesion demonstrated subepithelial mixed acute and chronic inflammation. A diagnosis of Vitamin C deficiency, or scurvy, was made.



Figure 1: Lesions of the vulva, perineum, and medial thighs at initial presentation (A), and close-up of the buttocks(B)

Further questioning revealed the patient was following a restrictive diet that was based on proteins and vegetables, and absent of fruits. After supplementation with 500 mg vitamin C twice daily for approximately 10 weeks the patient's

symptoms improved and her vitamin C level improved to 66 $\mu\text{mol/L}$. Her symptoms continued to improve and after 7 months, she had near complete resolution of the lesions (Figure 2).



Figure 2: Lesions of the vulva, perineum, and medial thighs after approximately 7 months of Vitamin C supplementation (A), and close-up of the buttocks (B)

Discussion

Vitamin C is important in many different cellular human functions. Vitamin C is important in reactions leading to the synthesis of amino acids and collagen.¹ The body cannot synthesize Vitamin C, so lack of appropriate nutritional intake will lead to scurvy.

Although our patient had underlying lichen sclerosus, the new onset of vulvar pustules was not a finding described for either lichen sclerosus flare nor vulvar skin atrophy from the use of topical corticosteroid.^{4,5} Additionally, while steroid dermatitis involving the face has been described to resemble Rosacea with generalized redness, telangiectasia, and rebound phenomenon with papulopustular eruption, our patient's findings were limited to isolated vulvar pustules (Figure 1).⁶ Corticosteroid withdrawal may also present as a rash within days to weeks of discontinuing a topical corticosteroid that has been used for many months.⁷ Corticosteroid withdrawal should be considered if the redness is confluent and associated with burning rather than itch as the main symptom.⁷ The differential diagnosis should be broad when considering vulvar skin changes. In our patient, the presence of vulvar pustules was an isolated finding, not described with lichen sclerosus, steroid dermatitis, or steroid withdrawal. Additional history revealed a change in our patient's diet and the etiology.

We present the interesting and uncommon case of vulvar pustules as the presenting sign of vitamin C deficiency. To date, there has been little published regarding vulvar lesions in scurvy. There

has been one reported case series on vulvar ulcerations in the setting of vitamin C deficiency, published in 1944.⁸ However, there have been no reported cases of vulvar pustules in Vitamin C deficiency. With the increase in popularity of restrictive diets, where it is possible for nutrient deficiency, it is important for providers to be aware of possible presentations.

IRB status: IRB approval is not required for case reports. Patient permission for images and report were obtained.

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