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CLINICAL VIGNETTE

Pruritus in the Older Adult: Diagnostic Approach and Treatment Considerations

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Case Presentation

A 97-year-old male with severely photodamaged skin, history of actinic keratoses and squamous cell carcinoma, presented with severe pruritus of his trunk and extremities. He denied fevers, chills, night sweats, and other systemic symptoms. He had tried various over-the-counter moisturizers with incomplete relief. The itching on his back was so distressing that he had used a toilet brush to scratch his back. He noted partial improvement with twice daily liberal use of a petrolatum-based ointment applied after bathing in conjunction with 2.5% menthol cream and avoidance of prolonged, frequent hot showers. Despite these interventions he continued to scratch, with development of prurigo nodularis over his right arm and mid-lower back (Figures 1,2). He was prescribed clobetasol ointment and a caregiver was needed for proper use of this topical steroid due to his underlying cognitive impairment and mobility issues which made it difficult to reach his back.

On physical exam, he had photodamaged skin, particularly over the distal upper and lower extremities and back with multiple lentiginos. Generalized xerosis was present over the trunk and extremities, without a rash. There were prurigo nodules, with excoriation and crusting on his extensor upper arms and lower back (Figures 1, 2). There were no burrows in the digital web spaces, palms, or wrists. Laboratory evaluation showed no evidence of renal, hepatic, thyroid, or parathyroid disease. Labs were also negative for diabetes mellitus, iron deficiency, polycythemia, essential thrombocytosis, or myelofibrosis. A chest x-ray was unremarkable. His medication list did not include any calcium channel blockers (CCBs) or angiotensin-converting enzyme inhibitors (ACE-i), and there was no relation between onset of pruritus and initiation of any medication.

Various options regarding management were considered. We chose to continue a petrolatum ointment twice daily, replace the menthol 2.5% spot treatment with a pramoxine-containing lotion, and to continue clobetasol 0.05% ointment to prurigo nodules. We avoided using oral medications such as steroids, antihistamines, and gabapentin due to the increased potential for adverse effects in older adults.

Discussion

Prevalence and Quality of Life Impairment due to Pruritus in Older Adults

Pruritus is a common complaint in older adults. In one study, pruritus was the most frequent chief complaint in an ambulatory dermatology clinic in patients over 85 years of age, with a rate of 20%.¹ The extent of quality of life (QoL) impairment from chronic pruritus, defined as pruritus lasting longer than 6 weeks, has been well established in the literature.^{2,3} In one population, the impact on QoL from pruritus was comparable to that of chronic pain.³ Pruritus frequently interferes with sleep, and an association between depression and sleep disturbance secondary to severe pruritus has been reported.⁴ Given the high prevalence and significant impairment in quality of life, familiarity with the diagnosis, evaluation, and management of pruritus is important for health care providers.

Evaluation of Pruritus in the Older Adult

Xerosis, or dry skin, is highly prevalent in the older adult and is frequently the cause of pruritus, however, excluding primary dermatologic disease is important. Common dermatologic conditions in the older adult that may contribute to pruritus include: seborrheic dermatitis (greasy flaking/scaling and erythema in scalp, behind ears, face/nose, chest), Grover's disease (itchy rash over mid-chest and mid-back, with red crusted papules, typically sparing the face/scalp), and eczematous dermatitis secondary to irritants (such as water from frequent washing, irritation at peristomal site etc), contact allergens (frequently to dyes, soaps, bandage adhesives, nickel, topical antibiotics), or medications (calcium channel blockers, angiotensin converting enzyme inhibitors). The wrists, foot soles, digital web spaces, and genital region should be examined for evidence of scabies. Mycosis fungoides and bullous pemphigoid are additional primary dermatologic conditions where the diagnosis may often be missed due to heterogeneity in presentation. Mycosis fungoides is often mistaken for inflammatory dermatoses such as eczema or psoriasis, as the disease may take the form of scaly erythematous patches or plaques in its early stages.⁵ The presence of atrophy as well as lack of response to topical directed therapy can be a clue to the diagnosis of mycosis fungoides, but a confirmatory biopsy is needed.⁶ Bullous

pemphigoid may also present with pruritus in the older adult with diagnoses being largely dependent on confirmatory biopsy. Approximately 20% of patients with bullous pemphigoid (BP) lack bullae, presenting instead with eczematous lesions, papules, nodules, or only excoriations.⁷⁻⁹ Thus, in patients with chronic refractory pruritus, a biopsy with direct immunofluorescence and indirect immunofluorescence on salt-split skin should be considered.¹⁰

Systemic causes of pruritus should also be considered. Underlying systemic diseases may cause pruritus without a primary skin rash. Underlying etiologies for generalized pruritus can include renal insufficiency, hyperthyroidism, hypothyroidism, hyperparathyroidism, iron deficiency, and liver disease/cholestatic disease. Evaluation for malignancy may be warranted especially in the presence of concomitant symptoms such as fevers, chills, night sweats, lymphadenopathy or organomegaly.¹¹ All evaluations for pruritus should include a thorough medication reconciliation. Several commonly prescribed medications such as hydrochlorothiazide, calcium channel blockers and ACE inhibitors are known to cause pruritus, with or without a rash.¹²⁻¹⁴

A final consideration in the workup of pruritus is the potential for a neuropathic etiology. This cause of pruritus is important to recognize because topical treatments such as emollients or steroids will be of limited use. For example, diabetes mellitus can be associated with generalized truncal pruritus, thought to be secondary to small-fiber polyneuropathy.¹⁵ Neuropathic pruritus may also be present in a more localized form due to neuroanatomical pathology. In the older adult, spinal nerve-root compression is common due to degenerative disc disease and may lead to pruritus in its respective distribution. In descending order there are 3 well-described types of localized pruritus secondary to spinal nerve-root compression: brachioradial pruritus which refers to localized itch over the brachioradial area, notalgia paresthetica, which refers to localized pruritic patches located on the back, and neuropathic pruritus ani, present in the anogenital region. In all cases, the site of pruritus depends on the level at which spinal disc disease is present.¹⁵⁻¹⁷

Xerosis: pathophysiology

In the absence of other primary skin lesion or underlying systemic cause for pruritus, xerosis may be the main factor underlying the patient's symptoms. Xerosis appears as dry, cracked skin with superficial flaking, which when severe can become fissured or adopt the appearance of "fish-scales" or ichthyosis. Xerosis is common in older adults. In this population, the skin barrier is compromised, with the ability of the stratum corneum to maintain hydration reduced. The skin of older adults has less active sebaceous and sweat glands which are critical to maintain the integrity of the skin barrier.^{18,19} These structural and compositional changes prevent a diffuse, uniform distribution of water throughout the skin, contributing to xerosis and the wrinkled appearance of photodamaged skin.²⁰⁻²²

Management

Management of pruritus depends on the underlying etiology. Controlling an underlying systemic disease and avoidance of triggers is essential. The rash, if present, may be obscured by secondary change such as excoriated prurigo papules or nodules. If there is no primary rash morphology to suggest a primary dermatologic disease outside of xerosis, and lesions suspected to be due to secondary change are only in locations that the patient can reach, the likelihood of a primary dermatologic condition besides xerosis is low. Management of xerosis should include the use of petrolatum containing moisturizers after bathing and the avoidance of long, hot, frequent showers.¹¹ Topical treatments such as occlusive wraps can be considered for difficult to treat cases. Potential benefits from sedating antihistamines for pruritus are thought to be outweighed by the anticholinergic side effects which increase the risk for delirium or confusion in older adults.²³ Non-sedating, second generation antihistamines are not generally useful unless there is associated urticaria.²⁴

Our patient also had prurigo nodules, secondary to repeated excoriation of his skin due to itch from xerosis. Management of prurigo nodularis can be difficult and depends on whether an underlying dermatologic condition or a systemic disease-causing itch exists. Treatment is important to limit potential for superinfection of excoriated lesions. Treatment options include high potency topical steroids or intralesional triamcinolone, topical calcineurin inhibitors, calcipotriene, or narrowband ultraviolet B (UVB) phototherapy. A modified form of Goeckerman therapy (broadband UVB followed by coal tar) has also been used for prurigo nodularis.²⁵ More recently, serlopitant, a neurokinin-1 receptor antagonist and nemolizumab, an interleukin-31 receptor targeting biologic, were reported to be useful for treating prurigo nodularis.^{26,27}

Conclusion

Pruritus is common in older adults and can significantly impair quality of life. While xerosis is frequently the cause, primary dermatologic, systemic, and neurologic disease should be considered as potential etiologies. Secondary skin changes such as prurigo nodularis may occur. The proper identification of the underlying etiology of pruritus can guide treatment and help patients manage this condition.



Figure 1. Frequent lentiginosities and wrinkled skin secondary to photodamage, with chronic prurigo nodules concentrated over the lower back.



Figure 2. Excoriated prurigo nodules over the patient's right upper arm.

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