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Viewpoint

Papular Dermatitis: An Under-Appreciated Condition

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Introduction

Papular dermatitis or subacute prurigo is a commonly misdiagnosed condition that is classically described in Europe as having primary papular pruritic lesions. It is represented by lesions that often erupt symmetrically in the extensor surfaces of the extremities, neck, lower trunk and buttocks. Another communal term for papular dermatitis is "itchy red bump" disease. Papular dermatitis is our preferred term to describe this disease since it highlights the papular lesions, eczematous nature, and intense pruritus iconic to the condition that classically effects patients in late middle age. It falls under the category of prurigo which is a designation used to denote a category of dermatologic disease exemplified by pruritic cutaneous lesions that can be papular and/or nodular. Prurigo can be further classified into three categories: acute (papular urticaria/bug bites), subacute (papular dermatitis), and chronic prurigo (prurigo nodularis). Papular dermatitis can last for a few months to several years and is often refractory to conventional therapy. Histologic signs of papular dermatitis include spongiosis and superficial and deep perivascular mononuclear cell infiltrate with eosinophils. If the primary lesions are not identified, it leads to evaluation of unrelated conditions including occult malignancies, diabetes mellitus, liver and renal disease, but it is differentiated by the presence of primary lesions [1-4].

One of the main issues with papular dermatitis lies in differential diagnosis. In a study with 12 patients, thorough histories of patients with pruritic erythematous papules and atopic features were obtained along with skin biopsies, immunofluorescence studies, food challenges and patch testing. From a clinical perspective the pruritic condition requires exclusion of dermatitis herpetiformis, Grover's disease, and bug bites. Dermatopathologists may describe the pattern as a dermal hypersensitivity reaction if topical corticosteroids were prescribed and masked epidermal changes, or they may overinterpret the eosinophilia as an insect bite or drug reaction leading to inappropriate physician directed patient action. Dermatitis herpetiformis has positive results with immunofluorescence tests [5].

The diagnosis of papular dermatitis is almost never made on referral in our experience. Systemic medications are often discontinued if the pathologist mentions the need to exclude drug eruption. Drug eruptions seldom should be confused clinically with papular dermatitis. Arthropod assault is the term pathologists use to describe histologic features of a bug bite. Histologic tissue eosinophilia could trigger this interpretation. Exterminators and scabies treatments could then be undertaken with much unwarranted expense. Many patients have biopsies from the chest that show histologic features of Grover's disease(transient acanthotic dermatosis), but biopsies from the same patient taken from back lesions show the histology discussed above of papular dermatitis proving the association of both conditions in the same patient. Treatment of the papular dermatitis component yields clinical improvement.

A myriad of topical agents have been used to treat this condition, but they are variably effective and only have short term benefits. However, some systemic treatments have been effective, including nonsteroidal treatment and phototherapy. A retrospective study was done with 14 patients to evaluate the effects of nonsteroidal systemic therapies for long term control of papular dermatitis. The systemic agents tested for treatment among the patient pool included Methotrexate (MTX), Azathioprine (AZA), and Mycophenolate Mofetil (MM). These medications were considered a good alternative to phototherapy due to traveling inconvenience. Low doses of methotrexate were well tolerated by the patients and helped achieve long term control of the condition. Azathioprine was also effective in controlling the papular dermatitis, but the hematologic and GI side effects and slow onset of action made it not optimal for long term use. Mycophenolate mofetilcan be effective for controlling the disease, but cost can limit its use in older patients. The results showed how nonsteroidal treatment, not including phototherapy, can be utilized to successfully treat patients with papular dermatitis [6]. Other than these immunosuppressive drugs, cyclosporine was also tested as a treatment method. It inhibits T-cell activation and IL-2 production by inhibiting an enzyme in the calcium dependent signaling processes which results in a decrease in the production of T-helper cells, cytotoxic lymphocytes, and activates CD4 and CD8 in the epidermis. A retrospective review was done on a group of 16 patients who had papular dermatitis and were treated with cyclosporine. There was a response rate of 75%, in which 12 out of 16 patients had improved significantly with a decreased number of lesions and excoriations. However, when patients were taken off the drug, they often experienced relapse. The majority of the patients required a continuation of the cyclosporine in order to prevent the condition from returning. Some side effects of cyclosporine involved nephrotoxicity and hypertension, which indicates it should be used mostly in the case of refractory patients where no other treatment method was effective [7]. There was a case report that showed how cyclosporine allowed complete control of the disease in a 50-year old woman with diabetes mellitus. After administration

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of the drug, there was almost complete clearing of the lesions, but lesions did return after the drug was stopped [1].

Systemic corticosteroids such as prednisone are effective for short term control of lesions and relief of symptoms in patients with papular dermatitis. Since the disease usually lasts for 2 to 3 years, long term use of systemic corticosteroids would not be justified since disease may rebound on discontinuation. An alternative to systemic drug therapy to treat patients with papular dermatitis would be phototherapy, which is dramatically effective and has longer lasting results. The clinical presentation of papular dermatitis is shown on a subject's lower trunk with pruritic lesions. This patient was included in a study of phototherapy in papular dermatitis. The study was conducted using 11 patients who received a total of 17 phototherapy courses to see how effective various types of phototherapy would be to provide long term control of lesions and symptoms in patients with papular dermatitis. The three types of phototherapy that were tested were psoralen- UVA (PUVA), UVA/UVB light, and UVB alone. The results showed that PUVA phototherapy treatment had the best response rate with the fewest treatment in the shortest amount of time, but PUVA therapy is now not appropriate as treatment for this benign condition due to the melanoma risk. All groups had patients that relapsed with the condition over time. The patients in the UVA/UVB light and UVB alone did show some improvement in controlling of the disease as the treatment progressed. The UVB group had 2 patients that showed total clearing [2]. Another randomized controlled study was also conducted with 33 patients to see the effect of PUVA on papular dermatitis. The 3 treatment groups were PUVA, medium dosage UVA1 (MD-UVA1), and narrowband UVB (NB-UVB). None of the treatment groups experienced severe side effects. The results showed MD-UVA1 as an effective treatment option for papular dermatitis over NB-UVB. This is due to MD-UVA1 having a longer wavelength and ability to penetrate into the mid-dermis better in comparison to NB-UVB. Phototherapy is used for different pruritic conditions and has been shown to have anti-inflammatory effects in part because of its immunosuppressive effects on the skin through the down regulation of Th2 cytokine, depletion of epidermal dendritic cells, and impact on several neuropeptides [3].

Papular dermatitis is a very common condition seen weekly in practices that focus on referral of patients with refractory dermatoses. In our experience, the condition is usually not recognized leaded to waisted resources and patient exasperation. The intense pruritus takes a great toll on patient quality of life and can lead to loss of sleep and health consequences. It is best for physicians to be cognizant of the symptoms of this condition in order to best treat it.

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