

## Palmoplantar Pustulosis associated with Membranous Glomerulonephritis

Palmoplantar pustulosis (PPP) is a chronic dermatosis of the palms and soles, that has been conventionally classified as a type of localized pustular psoriasis. Renal disease has been increasingly reported with psoriasis vulgaris leading to a concept of “psoriatic nephropathy”.<sup>[1]</sup> Palmoplantar pustulosis has been previously reported to be associated with IgA nephropathy and acute glomerulonephritis, where preceding infection was attributed as the causative factor for simultaneous occurrence of both entities.<sup>[2,3]</sup> Herein we report a case of PPP associated with membranous glomerulonephritis (MGN).

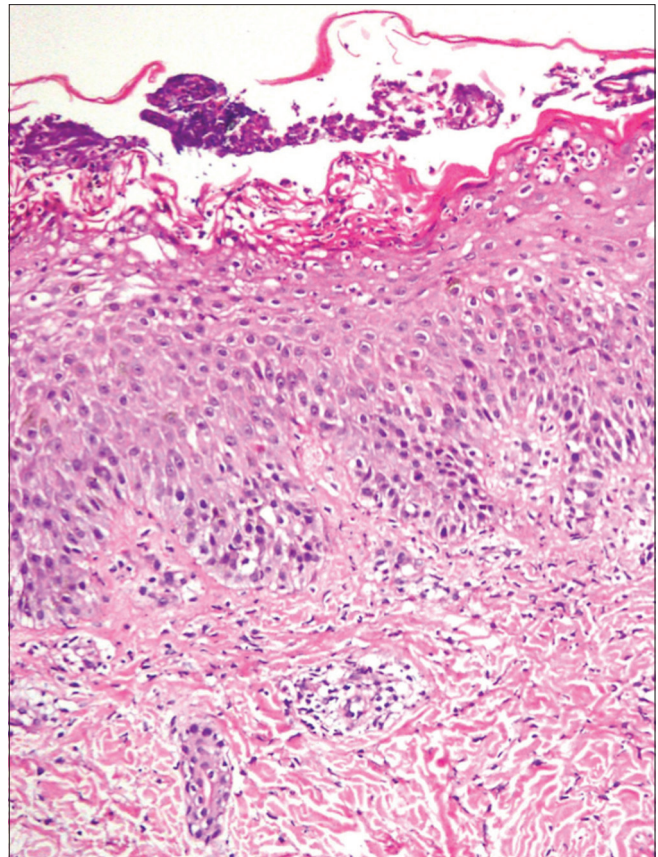
A 44-year-old man sought consultation for pruritic scaly lesions and desquamation of palms and soles of 4 years duration. On examination, deep seated pustules were seen on bilateral palms and soles along with diffuse desquamation [Figure 1a and b]. Brownish scaly plaques were also present over bilateral legs, along with excoriation marks. Nails showed dystrophy, yellowish discoloration, and onychomadesis. He denied history of joint pains or any drug intake. He had no history of smoking, alcohol consumption, thyroid disorders, diabetes, and hypertension. Histopathological examination from palm revealed focal parakeratosis, hypogranulosis, acanthosis and irregular elongation of rete pegs and collection of neutrophils in the epidermis [Figure 2]. Mild supra-papillary thinning was seen along with mild perivascular lymphomononuclear infiltrate. A diagnosis of palmoplantar pustulosis was ascertained. Significant medical history included progressive breathlessness (NYHA Grade III), generalised weakness and frothuria for 3 months. Investigations revealed serum creatinine of 7.5 mg/dl, 24-hour urine protein of 6564.5 mg/total volume, serum albumin of 2.8. After 5 sessions of hemodialysis, kidney biopsy was done that showed diffuse capillary wall thickening and chronic interstitial nephritis on light microscopy with deposits of IgG and C3 on immunofluorescence

suggestive of membranous glomerulonephritis (MGN). The immunohistochemistry was positive for anti-phospholipase A2 receptor (anti-PLA2R) suggestive of primary MGN. Other Investigations including hemogram, viral markers, chest radiology, antinuclear antibody, rheumatoid factor were done that were negative thus ruling out secondary causes of MGN. A provisional diagnosis of palmoplantar pustulosis with PLA2R MGN was made. MGN was treated with 500 mg methylprednisolone pulse for 3 days followed by oral prednisolone 40 mg per day. Palmoplantar pustulosis was treated with mometasone furoate 0.1% cream twice a day along with anti-histamines and emollients. At third week follow-up, serum creatinine was 5.36 mg/dl; palmoplantar lesions had shown significant improvement followed by complete clearance at 1 month.

Palmoplantar pustulosis is a chronic inflammatory disease associated with chronic focal bacterial infections, such as tonsillitis, chronic sinusitis, and dental infection as well as autoimmune thyroiditis.<sup>[4]</sup>



**Figure 1:** A case of palmoplantar pustulosis showing diffuse erythema and scaling; and rust colored deep-seated pustules on bilateral palms (a) and soles (b)



**Figure 2:** Epidermis shows crusting with presence of a pustule containing acute inflammatory cells, and irregular acanthosis with mild spongiosis and focal parakeratosis. Dermis shows mild perivascular lymphocytic infiltrate (Hematoxylin and eosin 200×)

Though classified separately, palmoplantar pustulosis is associated with co-existing psoriasis at other body parts in nearly one-third of the patients.<sup>[5]</sup> Psoriasis patients are known to have subclinical renal involvement and microalbuminuria occurs in about 22% of all patients with psoriasis.<sup>[1]</sup> IgA nephropathy has been reported to be the most common finding in patients with symptomatic renal disease. Association of psoriasis and PLA2R MGN has been reported in literature and serum anti-PLA2R antibody and glomerular expression of PLA2R was found lower in patients with psoriasis and MGN than in those with idiopathic MGN.<sup>[6]</sup> In another report, 2 patients with moderately severe psoriasis associated with PLA2R positive primary MGN were described.<sup>[7]</sup> Though the exact etiopathogenesis of renal disease in psoriasis patients is not known, probable causes include cytokine mediated damage as a part of systemic inflammation, immune-mediated response (IgA containing immune complexes) and nephrotoxic anti-psoriatic agents.<sup>[1,8]</sup> Treatment of palmoplantar pustulosis can often be unsatisfactory. Potent topical corticosteroids under occlusion is the preferred first-line therapy and systemic agents like acitretin or ciclosporin are often required for induction of remission.<sup>[9]</sup> The index case showed excellent response to topical corticosteroids and emollients; however, patient received oral steroids also and may have led to improvement. Renal disease in association with psoriasis is an evolving entity and association of PPP with MGN observed in the index case may be purely coincidental. However, associated renal involvement should be ruled out while treating patients of psoriasis or PPP. Hence, a routine urinalysis should be done in all psoriasis cases.

### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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