

## SHORT COMMUNICATIONS

### Asymmetric Prurigo Nodularis after Paralysis: A Case Report

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#### ABSTRACT

Prurigo nodularis (PN) is a chronic cutaneous condition characterized by hyperkeratotic pruritic nodules and a vicious itch-scratch cycle. The exact etiology of PN is unclear and thus it remains difficult to treat. Here we present a case of an 82-year-old female with PN and right-sided paralysis after a stroke, uniquely presenting with PN lesions localized to her right arm and left leg only on the sites which she would easily scratch after her stroke. This case highlights the importance of managing pruritus in PN patients as the patient presented with a drastically reduced affliction on hard to reach areas due to her paralysis.

#### INTRODUCTION

Prurigo nodularis (PN) is defined by hyperkeratotic pruritic nodules most commonly localized symmetrically on the bilateral extensor lower extremities.<sup>1</sup> The disorder is characterized by intense pruritus which leads to a vicious itch-scratch cycle. This itch-scratch cycle promotes chronic excoriated nodules that can result in nodular lichenification, hyperkeratosis, hyperpigmentation, and skin thickening.<sup>2</sup> While the exact etiology is not fully understood, a broad variety of diseases have been reported to underlie PN including atopic dispositions, several systemic diseases, infections, and psychiatric and neurologic disorders.<sup>3</sup> Treatment options for PN generally target the itch-scratch cycle. Here we present the case of an 82-year-old female with right-sided paralysis after stroke, presenting with asymmetrical distribution of papules and nodules over her extremities.

#### CASE REPORT

We present the case of an 82-year-old woman with a history of psoriasis, hypertension, diabetes mellitus, and a stroke in December 2014, leading to right-sided paralysis. She initially presented to our clinic with a chief complaint of worsening pruritus. She had previously been treated with topical steroids, calcipotriene, and apremilast without success. Clinical examination revealed hyperpigmented papules and nodules with overlying erosions and ulcerations. The papules and nodules were more prominent on the right arm and left leg (Figure 1). A skin biopsy of the left leg revealed a dense eosinophilic infiltrate with scattered mononuclear cells and areas of fibrosis. Clinical and histologic findings were consistent with a diagnosis of prurigo nodularis. Interestingly, due to the patient's right-sided paralysis, lesions were localized to the right arm and left leg, those areas easiest for her to scratch. The left arm and right leg which were difficult to reach

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following her stroke were dramatically less involved.

**Figure 1.** Prurigo nodules on the patient's arms (a) and legs (b).



(a)



(b)

## DISCUSSION

Our case underscores the importance of the itch-scratch cycle in the propagation of prurigo nodularis. Our patient presented with an asymmetric distribution of her prurigo lesions secondary to right-sided paralysis after stroke. The disparity between the presence of nodules on the right arm and left leg and the absence of nodules on the left arm and right leg highlights the importance of itch-scratch cycle and its propagation of the disease.<sup>5</sup> Since the patient is unable to easily scratch her left arm and right leg, these extremities are less affected. While the exact etiology of PN remains unclear, our case highlights the direct relationship between skin nodules and ability to scratch. In an overwhelming majority of patients, pruritus or a pruritus-associated dermatosis is found to be the etiologic cause. Treating the underlying pruritus should therefore be of paramount importance. New drugs like the neurokinin receptor antagonists and antibodies to IL-31 are promising as neurokinin receptors contribute to itch transmission and IL-31 is known as the itch cytokine.<sup>6</sup>

## CONCLUSION

Our patient presented with an asymmetric distribution of prurigo nodules due to her underlying right-sided paralysis, highlighting the role of the itch-scratch cycle in the pathogenesis of prurigo nodularis and the importance of managing underlying pruritus in the treatment of this complex disease.

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