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WHEN THE SKIN SPEAKS BEFORE THE NERVES: A CASE OF CUTANEOUS VASCULITIS PRESENTING AS ASYMMETRIC NEUROPATHY

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ABSTRACT

Vasculitic neuropathy represents a challenging diagnostic entity due to its heterogeneous clinical presentation and multi-system involvement. We report the case of a 59-year-old woman who initially presented with erythematous rashes progressing to palpable purpura over both lower limbs, abdomen, and forearms, followed by the development of asymmetric motor and sensory neuropathy manifesting as right foot drop and distal sensory loss. The onset of neuropathy occurred three days after the appearance of cutaneous lesions, raising clinical suspicion of an underlying small-vessel vasculitis. Laboratory workup revealed nephrotic-range proteinuria with preserved renal morphology on ultrasonography. Autoimmune profiling showed ANA 1+, while ANCA and complement levels were normal. Nerve conduction studies demonstrated sensory-predominant motor polyradiculoneuropathy with primary demyelination and secondary axonal loss. Skin biopsy confirmed leukocytoclastic vasculitis, and nerve biopsy showed chronic axonal neuropathy with vascular changes indicative of vasculitic neuropathy. MRI of the lumbosacral spine ruled out compressive etiologies. This case highlights the importance of early recognition of cutaneous and neurological manifestations of vasculitis, as timely biopsy-driven diagnosis is essential for preventing progressive neurological damage.

KEYWORDS: Vasculitic neuropathy; Palpable purpura; Mononeuritis multiplex; Proteinuria; Small-vessel vasculitis; Leukocytoclastic vasculitis.

INTRODUCTION

Vasculitic neuropathy is a well-recognized manifestation of systemic and isolated vasculitic disorders. It results from inflammation of the vasa nervorum leading to ischemic nerve injury. Clinically, it may present as painful mononeuritis multiplex, asymmetric neuropathy, or distal sensorimotor neuropathy. Cutaneous signs such as palpable purpura provide early diagnostic clues, particularly in small-vessel vasculitis. Renal involvement may manifest as isolated proteinuria without overt renal impairment. The diagnostic approach requires integration of clinical features, electrophysiological findings, autoimmune markers, imaging, and tissue biopsy. We present a detailed case of vasculitic neuropathy with cutaneous and renal involvement, highlighting the multisystem nature of the disease.

Case Description

A 59-year-old woman with known hypertension, Type 2 diabetes mellitus, and hypothyroidism presented with a 10-day history of erythematous rashes over both lower limbs, later involving the lower abdomen and forearms. The lesions progressed to form palpable purpura. Three days following the onset of skin lesions, she developed progressive difficulty in dorsiflexion of the right foot, leading to foot drop, along with numbness over the right leg and entire foot. There was no history of low back pain, radicular pain, gait unsteadiness, cranial nerve involvement, bowel or bladder disturbances, fever, arthralgia, or constitutional symptoms. Examination findings included a right-sided high-stepping gait, distal motor weakness of the right lower limb, and impaired sensation over the dorsum and sole of the right foot.

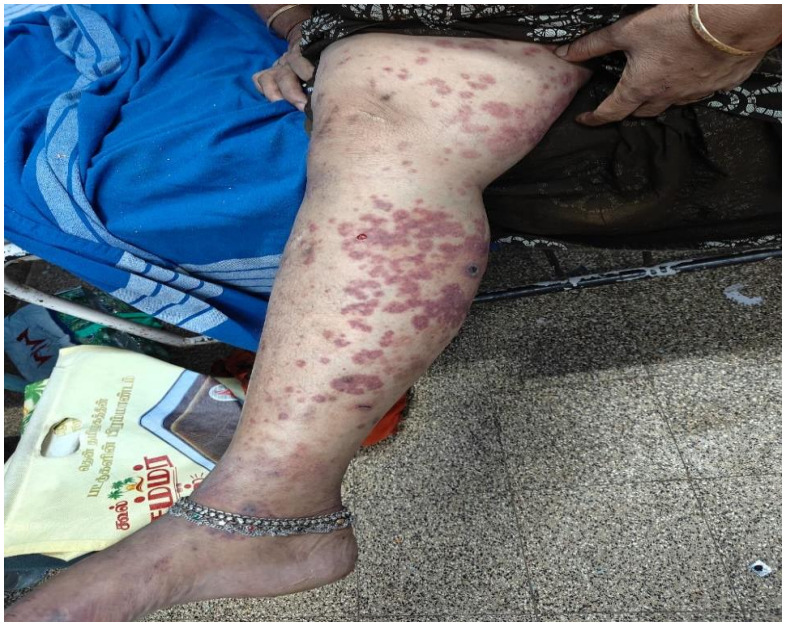

Figure 1

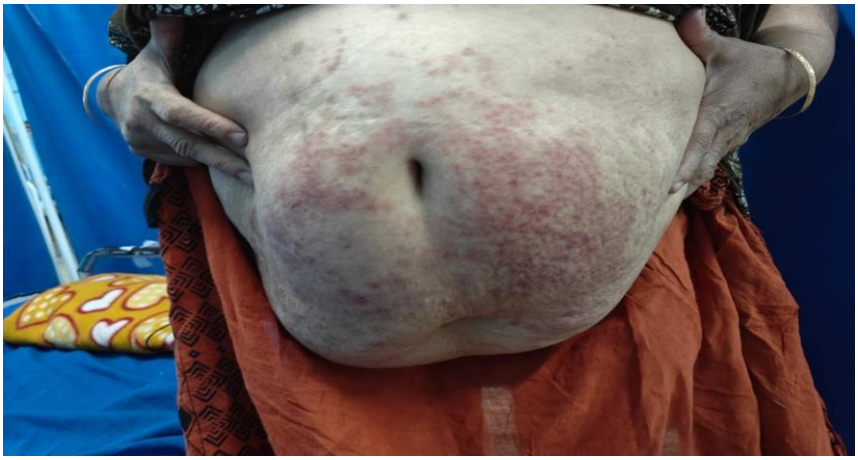

Figure 2.

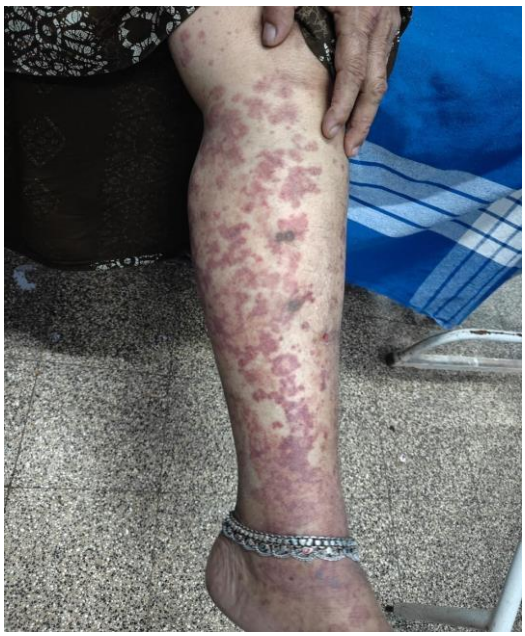

Figure 3

Investigations

A comprehensive set of laboratory, imaging, electrophysiological, and histopathological investigations were performed. Key findings included nephrotic-range proteinuria, low-titer ANA positivity, negative ANCA status, normal complement levels, and absence of monoclonal proteins.

Table 1: Major Laboratory, Neurophysiological and Histopathological Findings.

Investigation	Result	Interpretation
Urine Protein-Creatinine Ratio	4.9 g/g	Nephrotic-range proteinuria
ANA (IF method)	1+	Low-titer positivity
ANCA (C & P ANCA)	Negative	Non-ANCA vasculitis
Nerve Conduction Study	Sensory-predominant polyradiculoneuropathy	Demyelinating with axonal loss
Skin Biopsy	Leukocytoclastic vasculitis	Small-vessel vasculitis
Nerve Biopsy	Chronic axonal neuropathy with vascular changes	Vasculitic neuropathy

DISCUSSION

The patient's presentation of cutaneous vasculitis followed by asymmetric neuropathy is characteristic of small-vessel vasculitis affecting the skin and peripheral nerves. The temporal sequence strongly suggests immune-mediated vascular inflammation. The negative ANCA and normal complement levels point towards an immune-complex–mediated vasculitis. Electrophysiological findings were consistent with vasculitic neuropathy, and biopsy provided definitive confirmation. MRI spine helped exclude compressive etiologies, which is essential in evaluating acute foot drop. Early identification is crucial, as untreated vasculitic neuropathy can lead to irreversible nerve damage.

CONCLUSION

This case emphasizes that vasculitic neuropathy may evolve rapidly, with neurological deficits developing within days of cutaneous involvement. Early tissue diagnosis is crucial, as delays in recognition can lead to irreversible nerve injury, chronic disability, and long-term morbidity. Clinicians should maintain a high index of suspicion for vasculitis in patients presenting with unexplained foot drop, sensory loss, or painful neuropathy accompanied by purpuric skin lesions. A structured diagnostic approach, incorporating autoimmune profiling, nerve conduction studies, and targeted biopsies, remains essential for accurate classification and timely initiation of immunosuppressive therapy. Ultimately, this case reinforces the importance of multidisciplinary evaluation in identifying subtle but clinically significant patterns of multisystem vasculitis.

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