

SHORT COMMUNICATION

Successful Treatment of Refractory Neuropathic Pruritus with Capsaicin 8% Patch: A Bicentric Retrospective Study with Long-term Follow-up

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Neuropathic pruritus is itch caused by neuronal or glial damage. Its treatment is difficult and there is a need for new therapeutic options (1). A new capsaicin 8% dermal patch has proven effective against pruritus in patients with post-herpetic neuralgia (2). We report here a retrospective study, conducted in the Departments of Dermatology of Nice and Brest University Hospitals from May 2012 to July 2014, of 7 patients treated with a single application of capsaicin 8% patch for neuropathic pruritus due to disorders of the peripheral nervous system that were not ameliorated by previous treatments.

CASE REPORTS

Case 1. A 64-year-old woman was referred to our dermatological department with brachio-radial pruritus of the left arm of one year's duration. The patient had been treated with adalimumab for the preceding 2 years for psoriatic arthritis. She had no other significant medical history. The pruritus was severe, evaluated at 17 according to the 5-D itch-scale (3) and 8/10 on a visual analogue scale (VAS), localized on the lateral left arm. There were no associated dermatological signs on the overlying skin. Neurological examination was normal. The symptoms were typical for brachio-radial pruritus. The patient was initially treated with moisturizers and topical corticosteroids with no improvement. Because of severe deterioration in her quality of life (Dermatology Life Quality Index; DLQI 12), gabapentin was introduced, but was discontinued after one month at a dose of 900 mg/day due to adverse effects (severe dizziness).

Case 2. A 71-year-old woman consulted for brachio-radial pruritus of the right shoulder and arm of 15 years' duration. The patient had been treated repeatedly with topical corticosteroids with no improvement. The pruritus was mild, evaluated at 10 according to the 5-D itch-scale and 5/10 on the VAS. The patient had no other significant medical history, and neurological and dermatological examinations were otherwise normal.

Case 3. A 78-year-old woman consulted with a 3-year history of right-sided brachio-radial pruritus, treated previously with 3,600 mg/day of gabapentin for one year. She had initially responded to treatment, but her symptoms returned 2 years later. The pruritus was severe, evaluated at 16 according to the 5-D itch-scale and 7/10 on the VAS. The patient had no other significant medical history, and neurological and dermatological examinations were otherwise normal.

Case 4. A 67-year-old woman presented with unilateral brachio-radial pruritus of 20 years' duration, previously treated with anti-histamines with no improvement. The pruritus was evaluated at 17 according to the 5-D itch scale and at 8/10 on the VAS. There was no significant medical history, and no overlying erythema was noted during dermatological examination.

Case 5. A 63-year-old woman presented with a 4-year history of bilateral brachio-radial pruritus that was aggravated during the summer months by sun exposure. Treatment with high-potency topical steroids did not lead to any improvement of the symptoms. The pruritus was evaluated at 16 according to the 5-D itch scale and 7/10 on the VAS. There was no pain associated with the pruritus and no overlying erythema was noted during dermatological examination.

Case 6. An 88-year-old woman presented with pruritus and burning pain in a well-defined area of the back, with no skin lesion, leading to a diagnosis of notalgia paraesthetica. The symptoms were poorly ameliorated after 2 months by topical application of a preparation of capsaicin 0.7% and cold cream Codexial (Codexial Dermatologie, Vandœuvre-lès-Nancy, France) twice a day. Radiography showed a vertebral compression at the same level as the pain. The pruritus was evaluated at 7/10 on the VAS.

Case 7. A 53-year-old female patient presented with pruritus and burning pain on the hands and feet, that had extended progressively up to the elbows and knees over 7 years. A diagnosis of small-fibre neuropathy was made based on clinical presentation, normal nerve sural conduction and a dramatic decrease in intra-epidermal nerve fibre density. No aetiology was found. Treatment with pregabalin (25 to 300 mg/day; total duration 1 year), gabapentin (increased progressively from 100 to 600 mg/day; total duration 6 months) and ropinirole hydrochloride (0.25 mg/day; total duration: 3 months) did not provide sufficient amelioration. Duloxetine 60 mg provided substantial amelioration, but the patient had persisting pruritus and electrical sensations under her feet 2 years later.

All 7 patients were treated with a single application of 8% capsaicin patch (for 60 min) (Qutenza® (Astellas Pharma, Tokyo, Japan) 8% 640 µg/cm²). Patient 7 was treated only under her feet. In order to reduce discomfort prilocaine-lidocaine cream (EMLA) was applied to the affected area under occlusion 1 h before application of the patch. Blood pressure was monitored prior to, periodically during, and following treatment. Mild erythema, which lasted approximately 60 min, was observed on the treated area following removal of the patch. Six out of the 7 patients described no pain or discomfort during or following treatment. One patient (case 4) described an intense burning sensation during treatment that was relieved by paracetamol. All patients described full remission of pruritus within one week of treatment, after an initial amelioration the day after the application. None of the patients reported relapse of their pruritus at 6 months. Four out of the 7 patients underwent at least one year follow-up and none of them has a relapse so far. The results are summarized in Table I.

DISCUSSION

All 7 patients with neuropathic pruritus reported a dramatic, rapid and long-lasting amelioration after a

Table I. Patient characteristics and response to capsaicin patch treatment (for previous treatment see text)

Case/age, years/sex	Type of neurological pruritus	Duration of symptoms, years	5-D itch-scale		Visual analogue scale (scores 0–10)		Patch-related side-effects	Onset of response to treatment (days)	Recurrence of symptoms	
			At baseline	After treatment	At baseline	After treatment			At 6 months	At 1 year
1/64/F	BP	1	17	0	8	0	Mild erythema	15	0	0
2/71/F	BP	15	10	0	5	0	Erythema	7	0	N/A
3/67/F	BP	3	16	0	7	0	Mild burn	3	0	N/A
4/67/F	BP	20	17	0	8	0	Severe burn	10	0	0
5/63/F	BP	4	16	0	7	0	Mild erythema	7	0	0
6/88/F	NP	1	N/A	N/A	7	2	None	7	0	0
7/53/F	SN	7	N/A	N/A	5	0	None	7	0	N/A

BP: brachioradial pruritus; NP: notalgia paraesthetica; SN: small-fibre neuropathy; N/A: not available.

single application of capsaicin 8% patch. The treatment was well-tolerated. Clinical trials are needed to confirm these promising results, but similar results have been reported in brachio-radial pruritus (3, 4) and notalgia paraesthetica (5), both of which are considered as entrapment neuropathies. The diagnosis can be made clinically (1), but radiological studies, specifically magnetic resonance tomography (MRT) or computerized tomography (CT) are optimal for detecting foraminal stenosis or other structural lesions that can impinge on cranial or spinal nerve roots to cause brachioradial pruritus or other radiculopathies (6). However, in our experience MRT frequently does not reveal any lesion. The neuropathic pruritus are supposed to be related to compression of dorsal rami of the thoracic spinal nerves T2–T6 (notalgia paraesthetica) or cervical rami C5–C6 (brachioradial pruritus) by posterior vertebral arthrosis (7). Reduced intra-epidermal nerve fibre density has also been observed in the pruritic regions compared with “anatomically identical” non-involved sites (8). Patient 7 had a small-fibre neuropathy, which is also characterized by a decrease in intra-epidermal nerve fibre density (9). Regarding these pathophysiological hypotheses and the supposed mechanism of action of capsaicin, the favourable effects of capsaicin patch in our patients may be surprising. Indeed, capsaicin patch is known to induce the disappearance of peripheral nerve endings. This paradoxical therapeutic effect in our patients is probably related to the disappearance of suffering nerve endings. The previous decrease in nerve fibre density is a symptom of nerve suffering. Absence of relapse 3 months later, meaning that it was not necessary to apply a new patch, suggests either that there is no reinnervation or that healthy nerve endings are growing.

This series suggests that capsaicin 8% patch could be used in many localized pruritic disorders related to small-fibre neuropathies and/or entrapment neuropathies.

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