

e-mail: czm@unife.it

Allergic contact dermatitis due to transdermal buprenorphine

Contact Dermatitis 2008: 58: 310–312

Lidia Pérez-Pérez, Miguel Cabanillas,
Manuel Loureiro, Virginia Fernández-
Redondo, Javier Labandeira and
Jaime Toribio

Department of Dermatology, Faculty of
Medicine, Complejo Hospitalario Universi-
tario, 15782 Santiago de Compostela, Spain

Key words: buprenorphine; contact dermatitis;
opioids; patch testing; transdermal delivery
systems.

Transdermal delivery systems (TDS) constitute a recent therapeutic tool, allowing the administration through the skin of a wide variety of drugs, including nitroglycerin, nicardipine, nicotine, scopolamine, oestradiol,

testosterone, clonidine, ketoprofen, glipizide, triamcinolone acetonide, fentanyl, and buprenorphine. This route is advantageous since it avoids hepatic metabolism and enhances compliance, but may cause a range of skin adverse effects (1).

Case Report

An 81-year-old patient with a medical history of chronic bone pain because of D11–D12 vertebral fractures secondary to osteoporosis came to our clinic complaining about itching and redness on her back. She had been applying Transtec® 35 µg/hr transdermal patches (Grünenthal, Madrid, Spain) to relieve her bone pain for the previous 2 weeks. She had used these patches once before and was not aware of any skin problems from them.

On dermatologic examination, we observed 5 well-delimited rectangular erythematous plaques on the patient's back, their shape having the same form as the patches (Fig. 1). Slight desquamation and intense vesiculation with yellowish crusts extending beyond the outlines of the plaques were also evident.

The patient was recommended to stop using the patches immediately and to apply a topical preparation of fusidic acid and dexamethasone valerate twice daily for 2 weeks. The lesions improved significantly and progressively resolved, leaving post-inflammatory hyperpigmentation.

Patch testing was subsequently conducted with the Spanish standard series (GEIDCAC), Transtec® 35 µg/hr patches 'as is', Buprex® 0.3 mg vial (Schering-Plough, Madrid, Spain) as is, and buprenorphine at 0.001% and 0.002% in pet. In an attempt to exclude the possibility of sensitization to one or more of the vehicle components in the patch, we tested separately different pieces of it, one of them containing the drug (Transtec® 35 µg/hr patch A) and the other including the adhesive only (Transtec® 35 µg/hr patch B). Readings were performed at 2 and 4 D according to international recommendations. They yielded a strong positive reaction to Transtec® 35 µg/hr patch A as is, Buprex® 0.3 mg vial as is, and buprenorphine at 0.001% and 0.002% in pet. (Fig. 2) at both 2 and 4 D, therefore confirming an allergic contact dermatitis to transdermal buprenorphine.



Fig. 1. Well-defined, erythematous lesions on the patient's back. Spreading beyond the outlines and crusting are also evident. The patient had been removing the patches every third day.

Our patient subsequently started treatment with fentanyl transdermal patches, which she is applying at the moment without any adverse effect.

Comments

Buprenorphine is a potent semi-synthetic opioid analgesic derived from thebaine, widely used to treat moderate-to-severe chronic cancer and non cancer-pain. A transdermal patch formulation has recently been introduced, allowing a controlled delivery of this drug. Three different dosages are available (35, 52.5 and 70 µg/hr), reaching a daily amount

of 0.8, 1.2, and 1.6 mg of buprenorphine, respectively.

The most common systemic side-effects when receiving buprenorphine by transdermal systems are similar, although milder, to those seen when the drug is taken orally, including nausea, dizziness, sleeping, and vomiting. Local adverse effects are seen in up to 35.6% of the patients after removal of the patches, the vast majority consisting of erythema and pruritus, both of them transient and mild to moderate (2). Severe skin reactions caused by buprenorphine are rarely seen or otherwise under-reported, and thus by searching the PubMed database (January 2007), we only found one other case of

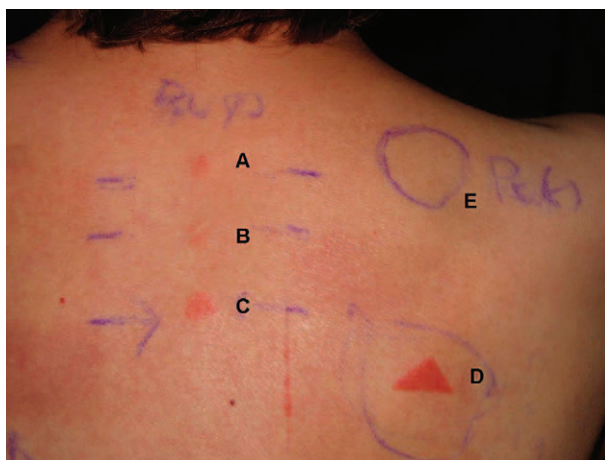


Fig. 2. Patch testing. Readings at 4 D showing positive results to Buprex® 0.3 mg vial as is (A) (+), buprenorphine 0.001% pet. (B) (+), buprenorphine 0.002% pet. (C) (++), and Transtec® 35 µg/hr patch A (D) (see text) (+++). Patch testing with Transtec® 35 µg/hr patch B (adhesive only) (E) was negative.

allergic contact dermatitis due to this drug (3) in the English literature. These cases, and also similar ones reported in relation to other different drugs, constitute enough evidence to include transdermal medications in the group of allergens capable of inducing cutaneous allergic reactions.

Given the fact that these TDS are being widely used in medical practice throughout many different specialties (4), sensitization may increase. Systemic sensitization has been reported, and thus caution is needed to prevent systemic reactions when the oral route is used with the causative agents (5). As in our patient, fentanyl could be a useful alternative in those who develop skin sensitivity to buprenorphine, as it is better tolerated.

Acknowledgements

We are grateful to Ana Hermida Cao and Laura Campano Pérez (Pharmacy Department, Hospital Gil Casares), who kindly prepared buprenorphine in pet. for patch testing.

References

1. Holdiness M R. A review of contact dermatitis associated with transdermal therapeutic systems. *Contact Dermatitis* 1989; 20: 3–9.
2. Buprenorfina. In: Martindale. Guía completa de consulta farmacoterapéutica. *Dermatología*, 2nd edition. Mallol Mirón J, Sureda Batlle F X (eds): Barcelona, 2006: 28–29.
3. Callejo Melgosa A M, Martínez J C, Fuentes M J, Martín C. Allergic contact dermatitis from buprenorphine. *Allergy* 2005; 60: 1217–1218.
4. Musel A L, Warshaw E M. Cutaneous reactions to transdermal therapeutic systems. *Dermatitis* 2006; 17: 109–122.
5. Grebe S K, Adams J D, Feek C M. Systemic sensitization to ethanol by transdermal estrogen. *Arch Dermatol* 1993; 129: 379–380.

Address:

Lidia Pérez-Pérez

Department of Dermatology

Faculty of Medicine

C./San Francisco s/n

15782 Santiago de Compostela

Spain

Tel: +0034 981594488, ext. 12245

Fax: +0034 981956091

e-mail: mejaim@usc.es