Nasal continuous positive airway pressure (CPAP) is commonly used to treat various respiratory conditions including obstructive sleep apnea (OSA). Several side effects related to the use of nasal CPAP are described in the literature. The side effects can cause patients to discontinue this effective therapy. We report 2 patients who used nasal CPAP for several years for the treatment of OSA and developed irritant contact dermatitis (ICD) from a CPAP nasal mask.

Obstructive sleep apnea (OSA) is a common sleep disorder with an estimated prevalence of 15 million individuals in the United States. Continuous positive airway pressure (CPAP) is the gold standard therapy for OSA, but the medical literature contains reports of several complications of nasal CPAP, including skin ulceration, rhinitis, xerostomia, and nasal congestion. We present 2 patients who developed irritant contact dermatitis (ICD) following the use of a CPAP nasal mask for the treatment of OSA.

Case Reports
Patient 1—A 64-year-old man presented to our dermatology clinic with a persistent pruritic facial rash in the underlying area of his CPAP nasal mask. He reported that the rash had been present for 3 to 4 years and occurred 3 months out of the year, worsening in the winter and improving in the summer. He had a history of OSA and received prior treatment with nasal CPAP for 11 years.

On physical examination the patient had a well-demarcated, angulated, erythematous patch with scaling and lichenification over the paranasal area, medial lower eyelid, and bridge of his nose (Figure 1). He was treated with hydrocortisone cream 1% twice daily. A patch test was initiated 5 days later with a standard series; preservatives; and shavings of his CPAP nasal mask, which consisted of silicone and foam. Seventy-two allergens were tested.

A week later the patch test results were analyzed and no allergic reactions were noted. His presentation was consistent with ICD due to the use of a CPAP nasal mask and dermatographism. He was administered hydrocortisone cream 1% twice daily and cetirizine hydrochloride 10 mg daily with moderate improvement. He changed his CPAP nasal mask 2 months after the patch test and initiated use of triamcinolone acetonide cream 0.025%. A year later he reported persistent symptoms. His medication was changed to pimecrolimus cream 1% twice daily without recurrence of the rash. He was told to use the medication on an as-needed basis if the rash reoccurred.

Patient 2—A 58-year-old woman presented to our dermatology clinic with a 2-year history of OSA and treatment with nasal CPAP. She reported erythema and a rash around her nose and paranasal area since initiating use of her CPAP nasal mask. She reported
that each morning she had a rash where her CPAP nasal mask was positioned on her face during the night. She denied recent changes in oral medications, ointments, and foods. She denied pruritus or pain in the areas associated with the rash. She applied tretinoin cream 0.1% daily for cosmetic purposes. She had no history of eczema, hay fever, or asthma.

On physical examination she had a large, well-demarcated, erythematous, angulated patch surrounding the nasal and bilateral paranasal area in the underlying location of her CPAP nasal mask, with a well-demarcated linear patch near the superior bridge of her nose (Figure 2). No other lesions were noted on the side of her face and scalp where the rubber strap of the CPAP nasal mask was placed. Patch testing was not performed. The likely diagnosis was ICD. She was treated with hydrocortisone cream 1% to be used as needed for 1 to 2 weeks for each occurrence. No follow-up was available on this patient.

**Comment**

We present these cases to illustrate that nasal CPAP can be associated with ICD. A CPAP device is used to treat individuals with a pulmonary disease such as OSA. Several forms of CPAP are used in OSA with nasal CPAP being the most effective and most commonly used therapy.3
Side effects associated with nasal CPAP treatment have been previously reported and selected reports are summarized in the Table. In our patients, initial therapy was a mild-potency corticosteroid. Topical calcineurin inhibitors such as pimecrolimus or tacrolimus may be successfully used in patients who are not adequately treated with topical corticosteroids, as in patient 1. Physicians should consult with a pulmonologist to determine if the patient could use another type of nasal mask or alternative respiratory therapy, which may be less irritating to the skin. Additionally, adjunctive therapy with a barrier may be used in patients who must use nasal CPAP for pulmonary disease. Adding a mold or changing an existing nasal mask may help alleviate irritation and mask discomfort in patients.

**Conclusion**

Continuous positive airway pressure nasal masks can be associated with a number of side effects including ICD, as demonstrated in our patients. A diagnosis of ICD should be considered in patients who present with an unusual pattern of dermatitis on the central face in the underlying area of a CPAP nasal mask.

**REFERENCES**

