Artifactual pseudo-cheilitis: A case series of an underreported condition

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Key words: artifactual pseudo-cheilitis; cheilitis; exfoliative cheilitis; general dermatology; medical dermatology; psychosocial stressors.

INTRODUCTION

Exfoliative cheilitis (EC) is a labial disorder affecting the vermilion lip and characterized by thick keratin scale followed by subsequent desquamation. EC is typically a consequence of chronically inflamed lips due to an underlying condition, but it may also occur in the absence of primary labial disease following a psychosocial stressor. Although the terms “factitial cheilitis” and “artifactual cheilitis” have been used interchangeably, the artifactual variant appears to be distinct due to the intense distress that is not present in the factitial variant. Because artifactual cheilitis is underreported in the literature and there are few guidelines on diagnosis and treatment, patients often undergo extensive and unnecessary diagnostic workup.

We report a case series of 5 patients with artifactual EC and review the relevant literature. This condition can be difficult to diagnose and may be refractory to treatment, emphasizing the need to raise awareness and improve outcomes through increased early recognition, reduction in unnecessary diagnostic procedures, and increased multidisciplinary collaboration.

CASE SERIES

Case 1

A 29-year-old woman was seen in the clinic for evaluation of constant “lip peeling” for more than 8 months. She denied lip picking or using any new lip products and reported excessive concern about her condition. The results of outside laboratory panels and biopsy were unremarkable. Previous treatment with petroleum jelly, topical steroids, and fluconazole was unsuccessful. The physical examination was significant for distinctive lip puckering and thick white scale on the upper and lower lips without involvement of the oral mucosa (Fig 1, A).

Thorough history taking revealed that her symptoms started when she felt depressed from stressful events at home and at work. The patient was encouraged to discuss using a selective serotonin reuptake inhibitor and undergoing behavioral therapy with her psychiatrist. Her cheilitis significantly improved at subsequent monthly follow-up visits, with a regimen of saline soaks, petroleum jelly, tacrolimus ointment, desvenlafaxine, and therapy sessions (Fig 1, B).

Case 2

A 29-year-old man was evaluated via telehealth for constant “lip peeling.” He had experienced symptoms for 3 years and denied lip picking or using any new lip products. Thorough history taking revealed that the patient had been verbally assaulted repeatedly by his previous employer, leading to decreased self-confidence, reduced self-worth, depression, and social isolation. The results of multiple outside dermatologic evaluations were unremarkable, and there was no improvement with salicylic acid gel and topical steroids. Mirtazapine had decreased his symptoms when prescribed for depression in the past.

The physical examination was significant for angular cheilitis, distinctive lip puckering, and thick
white scale on the upper and lower lips without oral mucosal involvement (Supplementary Fig 1, A, available via Mendeley at https://data.mendeley.com/datasets/67xd92zdkt/3). He was placed on a regimen of saline soaks, petroleum jelly, tacrolimus ointment, escitalopram, and oral fluconazole for angular cheilitis. He noted gradual significant improvement at subsequent follow-ups (Supplementary Fig 1, B).

Case 3
A 23-year-old woman with a history of perioral dermatitis was seen in the clinic for evaluation of chronic “dry lips.” Her symptoms began 2 years previously when she began picking her lips due to stress and persisted even after she stopped this behavior. Previously effective therapies of clobetasol and tacrolimus lost effectiveness. The physical examination was significant for distinctive lip puckering and thick white scale of the upper and lower lips (Supplementary Fig 2, A, available via Mendeley at https://data.mendeley.com/datasets/67xd92zdkt/3).

She was prescribed oral prednisone, clobetasol ointment, and calcipotriene cream, which produced limited improvement. Bacterial cultures demonstrated polymicrobial growth, prompting initiation of oral doxycycline and topical gentamicin. There was no significant improvement 1 month later, and therefore saline soaks, tacrolimus ointment, and gentamicin ointment were prescribed, with overall improvement but persistent intermittent flares (Supplementary Fig 2, B). At last follow-up, she was instructed to use petroleum jelly multiple times per day and tacrolimus ointment twice per day, with selective serotonin reuptake inhibitors held in reserve due to patient preference.

Case 4
A 20-year-old man with a history of dysthymia, anxiety, and multiple sclerosis was seen in the clinic for evaluation of “lip peeling.” These symptoms began after he forcibly removed a chapped area of his lip when he received a diagnosis of multiple sclerosis 1 year previously. The results of outside evaluations and biopsies were negative, and regimens of petroleum jelly, mometasone, hydrocortisone, nystatin, trimethoprim-sulfamethoxazole, azithromycin, and prednisone did not lead to improvement. Physical examination was significant for distinctive lip puckering and thick white and yellow scale of the upper and lower lips without oral mucosal involvement (Fig 2, A). He was prescribed fluconazole for positive cultures as well as tacrolimus ointment.

The initial follow-up revealed improvement and potential residual candidiasis, which was treated with fluconazole, ketoconazole cream, and petroleum jelly. Subsequent follow-up revealed worsening symptoms, and he was given courses of nystatin-triamcinolone ointment, oral doxycycline, mupirocin ointment, tacrolimus ointment, and petroleum jelly. He began watching online support videos to reduce his anxiety (Fig 2, B). With this regimen, the patient reported significant improvement of his cheilitis. Further discussions regarding possible contributing stressors as well as initiation of duloxetine led to improved management of anxiety and labial improvement.

Case 5
A 30-year-old woman without a significant medical history was seen in the clinic for evaluation of constant “lip peeling.” Thorough history taking revealed that her lips started burning and “pruning” following her second pregnancy and relocation to another state. Previous treatments with nystatin ointment, cryotherapy, topical steroids, tacrolimus ointment, and excimer laser therapy were ineffective. Outside cultures were positive for yeast and bacteria, and she noted minimal improvement with cephalaxin and fluconazole. The physical examination was significant for distinctive lip puckering and
thick white scale of the upper and lower lips without oral mucosal involvement (Supplementary Fig 3, A, available via Mendeley at https://data.mendeley.com/datasets/67xd92zdkt/3). She was started on tacrolimus ointment and petroleum jelly. Although she was largely lost to follow-up, she sent an update 4 months later indicating that she had moved back home and was being treated by an outside dermatologist, with some improvement (Supplementary Fig 3, B).

DISCUSSION
The demographics, treatment regimens, and outcomes of these 5 cases are detailed in Table 1. All patients presented with thick white scales on the upper and lower lips, with minimal erosion of the underlying tissue but some variety of bacterial and fungal colonization. The mean duration of symptoms was 1.6 years (range, 8 months-3 years), and the patients had seen multiple providers before presenting to us. The lesions commonly started during stressful periods, although 4 of the 5 patients denied a known initial insult. Three patients reported past psychiatric illness, a risk factor for variants of EC.2,7 The mean age of onset was 26.2 years, and there was a female predominance, consistent with reports of similar cases.2,7

Different subtypes of EC may present with overlapping findings. EC most commonly occurs due to chronically inflamed lips and cutaneous inflammatory conditions, but it may also be the result of infection or medications.3,5,4 EC secondary to conscious extensive manipulation typically leads to minimal impairment of patients’ lives, and these patients freely admit to manipulation of the lips.6,8,9 Patients with “factitial cheilitis” are often aware of, but unfazed by, their lip condition. It is theorized that these patients participate in self-injurious behaviors in response to psychosocial stressors and are unconcerned about their condition, leading to low treatment adherence.6,10

In this report, we characterize a distinct form of EC that may occur because of repeated subconscious trauma to the lips during times of stress, causing irritation and hyperkeratosis. Keratin scale then accumulates and is exacerbated by fear of touching the lips to avoid worsening symptoms. Subsequent stressors then lead to additional subconscious trauma, perpetuating this cycle. Microbial colonization may exacerbate this condition, explaining the partial improvement seen with antibiotics and antifungals. Patients are excessively concerned with their appearance and experience significant impairment of daily living, in contrast to patients with other forms of EC, and demonstrate characteristic puckering of the lips (Fig 2 and Supplementary Figs 1 to 3). This puckering has been termed the “protrusion sign” by Nico et al.6 Because of the unique etiology and absence of underlying disease, we suggest that the term “artifactual pseudo-cheilitis” be used for this variant of EC.

Diagnosis requires a high level of clinical suspicion due to variable presentations. Patients are frequently misdiagnosed and undergo unnecessary diagnostic tests and treatments, and therefore it is important to start with minimally invasive diagnostic procedures. Identifying normal underlying tissue decreases the need for invasive diagnostic workup.6 Establishing trust is crucial to managing this condition, and clinicians may build rapport by treating the patient with respect, performing a complete skin examination, completing a stepwise diagnostic workup, and scheduling regular follow-up visits.11

Patients with whom we built rapport had significant improvement in their conditions with a regimen of petroleum jelly, tacrolimus ointment, and antidepressant therapy. Patients treated with antidepressants also had a more rapid recovery, suggesting that treatment of underlying psychiatric conditions is an important component.7,10 Because patients with this
| Case | Sex | Age of onset (y) | Race or ethnicity | Previous diagnoses | Previous pharmacologic therapies | Previous psychopharmacologic therapies | Number of previous therapies | Lesion symptoms and location | Pertinent psychiatric history | Current pharmacologic therapies | Current psychopharmacologic therapies | Follow-up |
|------|-----|-----------------|-------------------|-------------------|---------------------------------|----------------------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------------|---------------------------------|-------------|
| 1    | F   | 29              | Caucasian         | 1 Candidal cheilitis, Exfoliative cheilitis | Hydrocortisone 1% ointment, Clobetasol Petroleum jelly, Fluconazole | Sertraline | 5 | Scaling and crust on upper and lower lips | Anxiety | Fluconazole 130-mg tablet daily 14 days, Saline soaks, Petroleum jelly, Tacrolimus 0.1% topical ointment 1-2 times daily, Escitalopram 10 mg daily | Significant improvement, Minimal residual peeling |
| 2    | M   | 29              | Hispanic          | 3 Exfoliative cheilitis | Salicylic acid 3% gel, Topical steroids | Mirtazapine | 3 | Scaling and crust on upper and lower lips | Depression | Fluconazole 200-mg tablet daily 14 days, Petroleum jelly, Tacrolimus 0.1% topical ointment 2 times daily | Significant improvement, Few scaly papules |
| 3    | F   | 23              | Asian             | 2.5 Cheilitis, Inflammatory dermatitis, Psoriasis | Oral prednisone 40 mg 7 days, Clobetasol Moisturizing cream, Petroleum jelly, Tacrolimus, Calcipotriene 0.005% topical cream | NA | 6 | Scaling and crust on upper and lower lips | No known history | Tacrolimus ointment, Gentamicin ointment 2 times daily until crusting improves, Doxycycline 100 mg orally 2 times daily 30 days, Zinc gluconate supplementation 30 mg orally daily | Improved |
condition may not initially recognize these factors, it is important to encourage multidisciplinary treatment.

In conclusion, this case series describes 5 cases of artifactual pseudo-cheilitis, an underreported condition that occurs in the absence of underlying labial disease. Early recognition of this condition may prevent unnecessary diagnostic tests and treatments, allowing for effective management based on building rapport, moisturizing, and incorporating psychopharmacologic therapies. Future investigations in a larger multicenter cohort setting may reveal the underlying etiology and provide a more standardized approach to workup and treatment of this condition.

Conflicts of interest
None disclosed.

REFERENCES
1. Daley TD, Gupta AK. Exfoliative cheilitis. J Oral Pathol Med. 1995;24(4):177-179. https://doi.org/10.1111/j.1600-0714.1995.tb01161.x
2. Calobrisi SD, Baselga E, Miller ES, Esterly NB. Factitial cheilitis in an adolescent. Pediatr Dermatol. 1999;16(1):12-15. https://doi.org/10.1046/j.1525-1470.1999.99003.x
3. Thomas JR, Greene SL, Dicken CH. Factitious cheilitis. J Am Acad Dermatol. 1983;8(3):368-372. https://doi.org/10.1016/S0190-9622(83)70041-1
4. Girijala RL, Falkner R, Dalton SR, Martin BD. Exfoliative cheilitis as a manifestation of factitial cheilitis. Cureus. 2018;10(5):e2565. https://doi.org/10.7759/cureus.2565
5. Pascual A, Miguélez A, Vanaclocha F, Rubio G, Iglesias L. Periocular and perioral artefactual dermatitis: dermatological and psychiatric management in a hospital setting. Dermatol Psychosom. 2001;2:200-202. https://doi.org/10.1159/000049672
6. Nico MMS, Dwan AJ, Lourenço SV. Ointment pseudo-cheilitis: a disease distinct from factitial cheilitis. J Cutan Med Surg. 2019;23(3):277-281. https://doi.org/10.1177/1203475418825112
7. Aydin E, Gokoglu O, Ozcurumez G, Aydin H. Factitious cheilitis: a case report. J Med Case Rep. 2008;2(1):29. https://doi.org/10.1186/1752-1947-2-29
8. Rogers RS, Bekic M. Diseases of the lips. Semin Cutan Med Surg. 1997;16(4):328-336. https://doi.org/10.1016/S1085-5629(97)0025-9
9. Almazrooa SA, Woo SB, Mawardi H, Treister N. Characterization and management of exfoliative cheilitis: a single-center experience. Oral Surg Oral Med Oral Pathol Oral Radiol. 2013;116(6):e485-e489. https://doi.org/10.1016/j.oooso.2013.08.016
10. Brown GE, Malakouti M, Sorensen E, Gupta R, Koo JYM. Psychodermatology. Adv Psychosom Med. 2015;34:123-134. https://doi.org/10.1159/000369090
11. Aw DC, Thong JY, Chan HL. Delusional parasitosis: case series of 8 patients and review of the literature. Ann Acad Med Singap. 2004;33(1):89-94.