Isotretinoin is commonly prescribed to adolescents for the treatment of acne vulgaris. Numerous adverse effects are well documented and include xerostomia and cheilitis. However, perioral abscesses as a complication of isotretinoin-associated cheilitis are not commonly reported but represent substantial morbidity to patients. The rarity of such occurrences can lead to misdiagnosis or delayed diagnosis.

The overall incidence of perioral abscesses, including lip abscesses, is not reported in the pediatric literature to our knowledge, but the condition can be regarded as an unusual entity. We present the dramatic case of a severe lip abscess in a 15-year-old boy likely related to concurrent use of isotretinoin. Although uncommon, this entity should be recognized as a potential complication of isotretinoin therapy and differentiated from angioedema or severe mucositis in order for appropriate therapy to be started promptly.

Report of a Case

A 15-year-old boy presented urgently to the pediatric otolaryngology clinic with a 2-day history of lower lip swelling. He and his mother described rapid onset of edema, erythema, and pain of the lower lip. Because his symptoms were initially thought to be caused by allergic angioedema, corticosteroid therapy was initiated by a pediatrician. This did not lead to resolution of the edema. The patient was then prescribed cephalixin antibiotic therapy for presumed infection. Despite 3 doses of the medication, the lip swelling had progressed substantially. He otherwise felt well and did not have fevers or chills. His medical history was notable only for acne vulgaris, for which he was taking systemic isotretinoin. Both parents were health care providers.

On examination, the patient was afebrile and normotensive. The lip was extremely edematous and erythematous (Figure). Both sides of the lower lip were exquisitely tender to palpation and indurated. Facial strength and sensation were intact. The remainder of his physical examination was unremarkable.

Given the suspicion of abscess formation, needle aspiration of the lip was performed with return of frank purulence. The lip was then incised and drained under local anesthesia with release of a copious amount of purulence. The abscess pocket extended the full length of the lip. Samples were obtained for culture. The patient was admitted for empirical intravenous ampicillin-sulbactam and vancomycin therapy.

He remained afebrile throughout the hospitalization, with substantial improvement in lower lip edema, erythema, and pain. The cultures grew methicillin-resistant *Staphylococcus aureus* (MRSA) that was also resistant to clindamycin. The patient was discharged with a prescription for trimethoprim-sulfamethoxazole oral therapy.

Discussion

Since its approval by the Food and Drug Administration in 1982, isotretinoin has been frequently prescribed for a variety of cu-
taneous conditions, most commonly cystic nodular acne vulgaris. It is estimated that more than 20 million people worldwide have taken isotretinoin.

The exact mechanism of isotretinoin in its function in the treatment of acne is not well understood. Isotretinoin (13-cis-retinoic acid), a vitamin A derivative, regulates transcription in order to decrease proliferation, differentiation, and activity of basal sebocytes. In addition, isotretinoin induces apoptosis of sebocytes, thereby reducing the overall sebum excretion rate. By altering the microfollicular environment, isotretinoin also decreases the total number of Propionibacterium acnes, which are follicle-dwelling bacteria often implicated in acne vulgaris.

Despite its elusive mechanism of action, much has been published regarding the adverse effects of isotretinoin. Most notable and controversial are the teratogenic effects of the medication that are so severe that dual methods of contraception are required for young women taking the drug. However, a plethora of other adverse effects are also well described, including xerostomia, cheilitis, depression and suicidal ideation, acral desquamation, alopecia, ocular abnormalities, and hypertriglyceridemia. The mucocutaneous effects of isotretinoin are so common that the absence of these symptoms implies medication nonadherence. More than 90% of patients taking isotretinoin report dry mucous membranes and cheilitis. This is usually treated with topical emollients and steroids.

The fissuring and cracking of the lips associated with cheilitis lead to the breakdown of an important mucocutaneous barrier, which can predispose patients to bacterial or viral infection. Dramatic presentations of complete mucosal denuding of the lip have been described. In addition to causing breakdown of the mucosal membrane barriers, isotretinoin also leads to increased colonization with Staphylococcus aureus, which increases the incidence of folliculitis and furunculosis.

This “perfect storm” of isotretinoin leading to cheilitis, decreased mucocutaneous barriers, and staphylococcal colonization likely caused the severe lip abscess in our patient that was initially misdiagnosed as allergic angioedema. In addition, both of the patient’s parents were health care providers and presumably exposed the patient to carriage of MRSA. Prompt recognition of a lip abscess led to successful and rapid treatment and resolution of the problem.

Our case is strikingly similar to one previously reported by Beer et al. In the previous report, the authors present a case of a MRSA lip abscess thought to be related to concurrent isotretinoin use. To our knowledge, no other cases have been reported in the literature. By presenting our case, we hope to raise awareness of the development of severe lip abscesses related to isotretinoin use and prevent delayed diagnosis or misdiagnosis of this serious complication of a commonly used acne treatment. Pediatricians of patients receiving isotretinoin should suspect infectious etiologies in the presence of rapid and dramatic lip swelling.

**REFERENCES**


