

Improvement in excoriation (skin-picking) with use of risperidone in a patient with developmental disability

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Abstract

Patients with Autism Spectrum Disorder present with a heterogeneous mix of features beyond the core symptoms of the disorder. These features can be emotional, cognitive or behavioral. Behavioral symptoms often include self-injury, and this may take the form of repetitive skin-picking. The prevalence of skin-picking disorder in Autism is unknown. Skin-picking may lead to significant medical and psychosocial complications. Recent data suggest that behavioral interventions may be more effective than medications at reducing skin-picking in neurotypical patients. In this case, an 11-year-old male with intellectual disability and autistic spectrum disorder, with self-injurious skin-picking, was treated with risperidone with complete resolution of skin-picking symptoms. risperidone has been approved for irritability and aggression in Autistic spectrum disorder, and may be a valuable treatment option for skin-picking in pediatric patients with developmental disabilities.

Introduction

Autism spectrum disorder (DSM-5) is a condition defined by significant deficits in social communication and interaction as well as restrictive or repetitive behaviors and activities.¹ In addition to these core features, individuals with Autism may demonstrate self-injurious behaviors including head banging, biting, and skin-picking, also known as excoriation. The incidence of skin-picking in Autism is not reported. This behavior can present as an independent diagnosis (Excoriation (skin-picking) Disorder) or as comorbid with many other psychiatric conditions. Excoriation (skin-

picking) Disorder is currently categorized under the Obsessive compulsive and Related Disorders (DSM-5).¹ Excoriation may be common and presents along a continuum from mild to severe.² Excoriation (skin-picking) Disorder has a prevalence of 1-5% and can present at any age.² Compulsive skin-picking can be defined as repetitive, or ritualistic behavior, occurring regularly during the day for a sustained period leading to damage of the skin or its appendages by pulling, scratching, lancing, digging, or gouging of one's own body.^{3,4} Negative consequences associated with excoriation include social shame, embarrassment, guilt and potential for serious infection.^{2,3} Skin-picking is often conceptualized as a compulsive behavior and may serve as a method of reducing anxiety or self-soothing, potentially as the result of elevated arousal induced by contextual events in the absence of adaptive coping behaviour.⁵ Triggers vary greatly, and may include: stress, anxiety, interruption of routine, boredom, perceived skin blemishes, feeling tired or angry, emotion regulation deficits and emotional reactivity.² Prevalence of skin-picking is commonly higher in individuals with developmental disabilities and, despite the disproportionate prevalence in this population, knowledge about effective treatment approaches is sparse.³ Most studies to date have indicated that behavioral interventions are more efficacious than pharmacologic interventions,^{3,6,7} however, little, if any, of this data comes from populations with developmental disabilities. Medications that have been studied for treatment of skin-picking include: selective serotonin reuptake inhibitors (SSRIs), lamotrigine, the tricyclic antidepressants doxepin and clomipramine, naltrexone, pimozide and olanzapine; these medications have demonstrated mixed or inconclusive efficacy.⁸ Additionally, N-acetylcysteine has demonstrated some preliminary success in reducing irritability and improve skin-picking in Autism.⁹

In the case described herein, an 11-year-old male with intellectual disability and autistic spectrum disorder, exhibiting repetitive skin-picking behavior, was treated with risperidone – a second generation, or atypical, neuroleptic. risperidone interacts at many receptor sites including: Alpha-1, Alpha-2, D2, D3, H1, and 5HT2A. risperidone's activities as a D2 receptor antagonist and 5HT2A receptor agonist are recognized as the drug's most important interactions, contributing to antipsychotic and antidepressant activity, respectively.¹⁰ risperidone is currently approved by the FDA for the use of treating irritability and aggression in Autistic

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Spectrum Disorder. In this case, the patient was started on risperidone, titrated up to 1.5 mg nightly, with subsequent complete resolution of the skin-picking behavior.

Case Report

The patient was an 11-year-old, African American male with a history of intellectual disability and autistic spectrum disorder, who presented to the clinic with significant behavioral issues, including frequent tantrums, insomnia, and severe skin-picking. In addition to these symptoms, he was functionally non-verbal and required care for most of his activities of daily living. He attended special education classes. His mother reported that he had been picking the skin over his medial thumbs for many years, and that she, his teachers, and his pediatrician had attempted a variety of interventions without success. When his thumbs were taped up or otherwise made unavailable, he would begin to pick the skin on his abdomen. The extent of the skin damage was such that he was developing frequent infections, requiring his mother to constantly monitor for and clean the wounds. The patient was started on risperidone 0.5 mg, titrated up to 1.5 mg over 4 weeks. At 6-week follow-up, the patient's mother reported that he had ceased picking his skin. By 8 weeks, the deep lesions had completely healed (Figure 1). There were no adverse side effects reported from risperidone. The patient had one episode of picking at 10 weeks of treatment, which mother believed may have been related to

increased stress in the household during a few days in which many members of the family were ill with symptoms of a stomach virus.

An additional and unanticipated outcome in this case, was that the patient began to tolerate bathing after initiation of risperidone. Prior to the medication, his mother reported that he was *afraid of water* and could not tolerate any splashing of water near him. She described him as *sitting completely still* in the bath for only a few minutes, and refusing to participate in the process of cleaning himself. After initiation of the medication, she reported that he not only tolerated bathing, but had started spending longer periods of time and even playing in the bath.

Discussion

The resolution of the skin-picking behavior lifted a significant burden on both the patient's mother and his school – both of whom dedicated considerable energy to managing the behavior and attending to the wounds. The mechanism by which risperidone may inhibit skin-picking is unknown,

and thus far, the only literature reporting its use for skin-picking has been in relation to Prader-Willi Syndrome.¹¹ Activity as an alpha-1 antagonist is associated with sedation and cognitive slowing.¹⁰ A number of medications have been studied for treatment of skin-picking (SSRIs, lamotrigine, N-acetylcysteine, tricyclic antidepressants doxepin and clomipramine, naltrexone, pimozide and olanzapine)⁸ with some measure of success in reducing irritability and improve skin-picking in Autism,⁹ this report presents the application of risperidone. Taken together, the resolution of skin-picking and increased comfort and tolerance of the bath suggest an anxiolytic mechanism, either by direct effect of the medication or secondarily, by allowing an improved ability to tolerate stimuli. It is unclear if the skin-picking was a direct behavioral manifestation associated with autism, or represented an independent anxiety disorder, as comorbid anxiety disorders are not uncommon in patients with autism.^{12,13} Lastly, skin-picking and other impulse control disorders may be related to dysfunction in the cortico-basal ganglia-thalamo-cortical loops, involving the orbitofrontal cortex, anterior cingulate cortex, and caudate nucleus, identified via functional MRI in the brains of patients with obsessive com-

pulsive disorder.¹⁴ Given the wide range of receptor sites that risperidone acts upon,¹⁰ it is not unreasonable to hypothesize that the effects were multifactorial.

Conclusions

To date, no studies have reported on the use of risperidone for skin-picking behaviors in patients with developmental disabilities. This represents a potential missed opportunity, as these medications already have an indication for this population, and may be of considerable benefit. Skin-picking can be a considerable challenge to treat, and brings long-term aesthetic and medical consequences. While the current evidence favors behavioral intervention for treatment, in some patient populations these services may not be available, or, the patient's level of cognitive development may be too limited to allow these interventions to be carried out effectively. In such cases, risperidone may be an option. Further investigations could clarify the mechanism for reduced compulsive behaviors, and guide clinicians in selecting patients appropriate for atypical antipsychotics with skin-picking.

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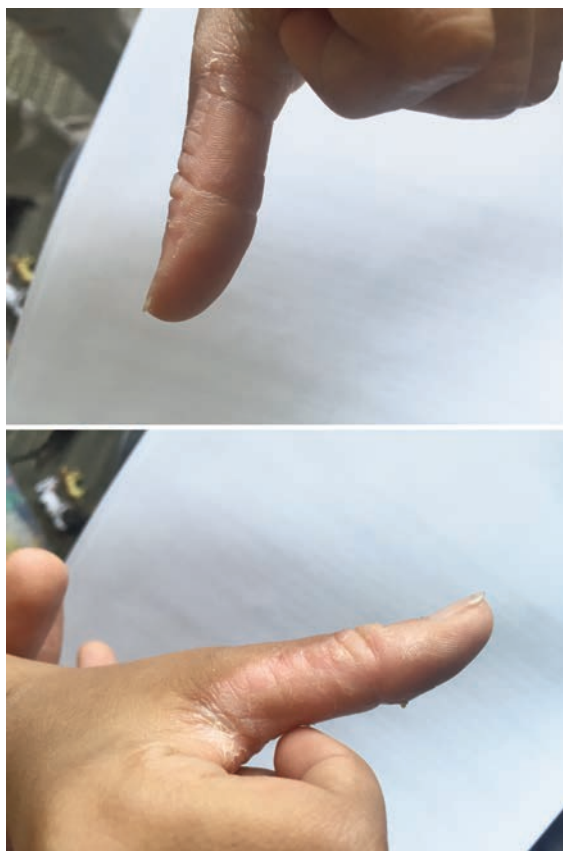


Figure 1. Deep lesions had completely healed after 8 weeks risperidone.

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