



CASE REPORT

Risperidone-Induced Alopecia in a Child with Autism Spectrum Disorder (ASD)

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ABSTRACT

Autism spectrum disorder (ASD) is a complex heterogeneous neurodevelopmental disorder. Risperidone appears to be effective in associated behavioral problems with ASD. Alopecia can be drug-induced and has been associated with several psychotropic drugs. Antipsychotics would seem to act by triggering a premature telogen or resting phase, resulting in hair loss. Here, we report a female patient ASD developing alopecia following risperidone use. To the best of our knowledge, this is the first report of alopecia induced by risperidone during treatment of self-injurious behaviours in a child female patient with ASD.

Keywords: Alopecia, antipsychotics, autism, child, risperidone

INTRODUCTION

Autism spectrum disorder (ASD) is a complex heterogeneous neurodevelopmental disorder. Risperidone appears to be effective in behavioral problems associated with ASD, including aggression, irritability, and self-injurious behaviors (1,2). Alopecia involves the loss of some or all of the hair from the head and/ or other parts of body. The etiology of alopecia is sometimes uncertain, but it can be drug-induced and has been associated with several psychotropic drugs such as lithium, valproic acid, olanzapine, risperidone, haloperidol, and serotonin reuptake inhibitors (SSRIs) (3).

Drug-induced alopecia is a side effect characterized by generalized hair loss which is reversible when the medication is discontinued. In the literature, there are few cases in which antipsychotic-induced alopecia has been reported (4–6). In this case report, we present a rare

alopecia case in a patient with with autism spectrum disorder (ASD), which developed after the onset of risperidone treatment and resolved after cessation of the medication.

CASE PRESENTATION

A 4-year-old female was referred to our outpatient clinic for her speech delay, self-injurious behaviours, and hyperactivity. At her psychiatric examination, she was able to speak only 10 meaningful words, failed to respond to her name, and exhibited limited eye contact and no joined attention. She also exhibited self-mutilative behavior including head banging, and stereotypic behaviors such as rocking her body. Her developmental level was assessed using the Ankara Developmental Screening Inventory (ADSI) (7). Her age equivalence was 17 months at the global development level, 13 months at the linguistic-cognitive level, 18 months in terms of fine motor skills, 25 months in terms of gross motor skills, and 11 months in terms of socialization/self-care (7). The Turkish versions of the Autism Behavior Checklist (ABC) (8) and the Childhood Autism Rating Scale (CARS) (9)

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were used to evaluate the severity of her autistic symptoms. Her total scores were 100 on the ABC and 49 on the CARS (indicating severe autism). She was diagnosed with ASD due to his severe impairment in social emotional reciprocity and language development and repetitive behaviours, and global developmental delay according to the Diagnostic and Statistical Manual of Mental Disorders - 5th ed. (DSM-5) (10).

The patient was referred for special education and because of her repetitive behaviours and behavioural problems, risperidone was initiated at 0.75 mg/day (and planned to be increased gradually). Four weeks after starting risperidone 0.75 mg daily, her family reported a diffuse and non-scarring hair loss and there was no hair loss complaint before risperidone use. The other psychiatric disorder such as trichotillomania that can cause hair loss was excluded by differential diagnosis. The investigations to detect possible medical causes (complete blood count, blood urea, creatinine, aspartate aminotransferase, alanine aminotransferase, free thyroid 4 and thyroid stimulating hormone -TSH, serum iron and ferritin levels) all were within normal ranges and no additional dermatological disorder was found that would possibly induce alopecia. Also no additional endocrinological disorders was found that would possibly induce alopecia (serum testosterone, estradiol, progesterone and prolactin levels were in normal range). The patient had no history of any systemic disease and other psychiatric disorders. The patient did not have alopecia before risperidone treatment and other possible causes were excluded. Therefore, etiology of alopecia was thought to be related with risperidone treatment.

Patient's Naranjo adverse drug reaction probability scale score was 6 for the drug. It suggested a probable association between risperidone and alopecia (11). For this reason, we decided to switch to aripiprazole 3 mg/day (increased gradually). During this period (after a week of stopping risperidone medication) there was decrease in the alopecia and no increase in the behavioral symptoms of the patient. The alopecia resolved in our patient nearly at six weeks. Drug administration was maintained for three months. The medication was

well-tolerated. In the following 3-month period, there was no observed hair loss and the self-injurious behaviors were improved.

DISCUSSION

In this manuscript, we reported a female child patient ASD developing alopecia following risperidone use. Risperidone acts on postsynaptic dopamine D2 receptors and is a serotonin 5HT2A antagonist. Children with ASD are frequently prescribed risperidone for the treatment of stereotypic behaviors, severe tantrums, and self-injurious behavior. Cutaneous side-effects are seen in 5% of patients receiving antipsychotic therapy, but these are generally benign (12).

Adverse dermatological drug reactions commonly reported in association with antipsychotic agents include pruritus, exanthematous reactions, urticaria, photosensitivity, skin pigmentation, fixed drug eruptions, and alopecia (12). Although the mechanism how psychotropic drugs trigger this effect at the molecular level is unclear, antipsychotics would seem to act by triggering a premature telogen or resting phase, resulting in hair loss (13). Drug-induced alopecia has been reported with olanzapine, risperidone, ziprasidone, loxapine, and haloperidol use (4,13,14). Although there have been case reports of alopecia induced by the antipsychotic risperidone, we encountered no previous pediatric cases of risperidone-related alopecia. In one case reporting a relation between risperidone and alopecia, a 42-year-old woman with a diagnosis of schizoaffective disorder was started on risperidone 4 mg/day, but long-acting risperidone injection 25 mg was added to treatment due to low treatment adherence. The oral risperidone dosage was reduced after four weeks, while the long-acting risperidone injection dose was increased to 50 mg. Diffuse and non-scarring hair loss, particularly involving bilateral temporal areas of the scalp developed in the first month of treatment. The dosage was then reduced to 25 mg, after which the alopecia decreased and no increase was observed in the patient's psychotic symptoms (4). An adult patient with schizophrenia suffered from hair loss due to olanzapine

(20 mg/day) use (6). Alopecia was also reported to be developed in a pediatric patient, who was diagnosed with mental retardation and irritability at the age of 11 years, three days following aripiprazole 2.5 mg/day therapy. The hair loss decreased one week after discontinuation of aripiprazole and resolved entirely after one month (15). Alopecia was also reported in a female adolescent diagnosed with depression at the age of 16, following four weeks quetiapine therapy at 50 mg/day, and the symptoms were resolved entirely one month after discontinuation of treatment (16).

Hair loss usually takes place when normal telogen hairs are lost, and generally several months following drug administration. Hair loss is a distressing phenomenon for both patients and caregivers, and has been linked to various psychological and psychiatric sequelae, including increased incidences of anxiety and depression (5). While there is no specific treatment for pediatric drug-induced alopecia, the condition can generally be reversed by reducing the dosage or discontinuing the drug entirely. Alternative pharmacotherapies may also be considered if indicated.

The use of risperidone has become common in treating behavioral problems associated with ASD. This case report supports the need to monitor for alopecia possibly can be precipitated by risperidone use. To the best of our knowledge this is the first report of alopecia induced by risperidone during treatment of self injurious behaviors in female child with ASD. Further reports are needed on this subject.

Patient Informed Consent: An informed consent was received from the patient's father.

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