

## Case Report

# Risperidone-induced Enuresis in a 12-year-old Child

Reetika Dikshit, Sagar Karia, Avinash De Sousa

Department of Psychiatry,  
Lokmanya Tilak Municipal  
Medical College, Mumbai,  
Maharashtra, India

### ABSTRACT

Risperidone has been documented to be effective in the management of behavior problems, aggression, and conduct disorder in children. While metabolic side effects like weight gain and obesity have been attributed to Risperidone use in children, side effects of the drug related to the urinary bladder are rare. We present a case of Risperidone-induced enuresis in a 12-year-old boy with conduct disorder that resolved completely after stopping the medication.

**KEYWORDS:** *Conduct disorder, enuresis, Risperidone, urinary bladder*

## INTRODUCTION

Risperidone is an atypical antipsychotic that has been widely used in the management of behavioral problems, anger, aggression, and conduct problems in children and adolescents.<sup>[1]</sup> Although safe for use in children and adolescents, weight gain, sluggishness, and increased appetite are the more commonly reported side effects in children while on treatment with the drug.<sup>[2]</sup> Risperidone in some cases may induce an enuresis when used in children and adolescents as shown in anecdotal case reports.<sup>[3]</sup> Most of the cases reported, so far have been when Risperidone has been used in combination with selective serotonin reuptake inhibitors or with other antipsychotics.<sup>[4]</sup> Many of the cases of Risperidone-induced enuresis have been reported in children with autism and developmental disabilities.<sup>[5]</sup> We present a case of Risperidone-induced enuresis in a 12-year-old boy where the drug was started for behavioral issues, conduct problems, and aggression.

## CASE REPORT

A 12-year-old Hindu boy studying in the sixth standard was brought by his mother to the child guidance clinic of our hospital with chief complaints of getting angry easily, irritability, conduct issues in school like getting into fights and back answering the teachers, decreased academic performance over the last 2 years and aggressive behavior at home toward the younger sister who was 8 years old. The boy was apparently alright until 2 years ago when he developed a friendship with a group of boys in school who exhibited mischief, truancy, and bad behavior. Gradually, he developed these behavior resulting in getting punished and having multiple negative remarks in his school calendar. He had physical fights with other students in school and had even injured other students such that they had bleeding after the injury. The school decided that his aggression was excessive and advised him to visit a psychiatrist for an evaluation. He

was reluctant to come and was brought forcibly by his mother for a consultation.

On detailed assessment, the boy had a normal birth and developmental history. He had a history suggestive of attention deficit hyperactivity disorder in childhood (up to the age of 8 years) which subsided as they had enrolled him into sports like football and he also underwent regular occupational therapy sessions. There was no history suggestive of any other psychiatric disorders in the child or that of epilepsy or head injury. The parents were well adjusted, and the family too did not have any interpersonal problems. The child admitted that he got aggressive and that though he would regret it later, it was difficult for him to control his aggression whenever it happened. The mother was psychoeducated about the problem and was suggested certain behavior therapy techniques like positive and negative reinforcement that would work overtime. She was educated about medical intervention for anger and conduct problems and agreed to the same. She was told to ensure regular follow-up when on the medication. The child was started on Risperidone 0.5 mg half a tablet t.i.d. (total dose 0.75 mg per day). The dose would later be increased week by week after evaluation. Within a week of starting the medication at 0.75 mg per day, the mother complained that her child starting passing urine in bed at night during his sleep. The mother ensured that the child went to the toilet before sleeping and was alarmed he never had enuresis in the past, and this was the first time ever that such symptoms appeared. She claimed that the enuresis had started within 2 days of starting Risperidone. We stopped Risperidone and decided to withhold medications for a week. Within 2 days

**Address for correspondence:** Dr. Avinash De Sousa, Carmel, 18, St. Francis Road, Off S.V. Road, Santacruz West, Mumbai - 400 054, Maharashtra, India.  
E-mail: avinashdes888@gmail.com

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**Table 1: Score of the case on Naranjo algorithm**

<b>Question</b>	<b>Yes</b>	<b>No</b>	<b>Do not know</b>	<b>Score</b>
1. Are there previous conclusive reports on this reaction?	+1	0	0	+1
2. Did the adverse event appear after the suspected drug was administered?	+2	-1	0	+2
3. Did the adverse reaction improve when the drug was discontinued, or a specific antagonist was administered?	+1	0	0	+1
4. Did the adverse event reappear when the drug was readministered?	+2	-1	0	+2
5. Are there alternative causes (other than the drug) that could on their own have caused the reaction?	-1	+2	0	-1
6. Did the reaction reappear when a placebo was given?	-1	+1	0	0
7. Was the drug detected in blood (or other fluids) in concentrations known to be toxic?	+1	0	0	0
8. Was the reaction more severe when the dose was increased or less severe when the dose was decreased?	+1	0	0	0
9. Did the patient have a similar reaction to the same or similar drugs in any previous exposure?	+1	0	0	0
10. Was the adverse event confirmed by any objective evidence?	+1	0	0	0
Total score				+5

of stopping Risperidone, the enuresis stopped. We started Risperidone in the same dose after a week of no enuresis and the very same night; the child had enuresis. Risperidone was then replaced with aripiprazole 5 mg per day, and the child is doing fine till date.

## DISCUSSION

Many of the antipsychotic drugs have been implicated in enuresis, and multiple mechanisms may be at play. The mechanisms that may play a role in case of Risperidone may be a decrease in the tone of the internal urinary bladder sphincter due to alpha 1 adrenergic blockade,<sup>[6]</sup> reduced dopamine transmission in the basal ganglia,<sup>[7]</sup> central dopaminergic blockade effects,<sup>[8]</sup> and the sedative effects of antipsychotics may lead to an inability to wake in the middle of the night and may cause enuresis.<sup>[9]</sup> To make sure that the enuresis was a drug-induced effect as per Naranjo's algorithm [Table 1]<sup>[10]</sup> we did a repeat challenge with Risperidone and found the enuresis correlating with the restarting of Risperidone. We, however, did not rechallenge with a smaller dose of 0.25 mg which would have helped us ascertain whether the side effect seen was dose dependent and ameliorated at lower doses. The score on Naranjo's algorithm was +5. As per MedDRA, this side effect has been coded enuresis (nonorganic) (code 10014930). Risperidone is used widely in children and adolescents, and studies have reported enuresis and urinary incontinence as a side effect of the drug both in normal and special populations.<sup>[3,11,12]</sup> Most of the reports have been in non-Asian populations and reports from India and Asia are rare. In a previous study, comparing Risperidone and Fluoxetine in children with autism no enuresis related to Risperidone was reported in the participants over a 16-week period.<sup>[13]</sup> Clinicians must be aware of this side effect as it is quite distressing for the parents and child alike. Risperidone must be used with caution in children that have a history of enuresis as it should not lead to a resurgence of symptoms.

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## Conflicts of interest

There are no conflicts of interest.

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