

## Risperidone-induced Gingival Bleeding in a Pediatric Case: A Dose-dependent Side Effect

Sabri Hergüner<sup>1</sup>, Hatice Yardım Özayhan<sup>2</sup>, Emire Aybuke Erdur<sup>3</sup>

<sup>1</sup>Department of Child and Adolescent Psychiatry, Meram Faculty of Medicine, Necmettin Erbakan University, <sup>2</sup>Department of Psychiatry, Konya Training and Research Hospital, <sup>3</sup>Department of Orthodontics, Faculty of Dentistry, Selcuk University, Konya, Turkey

There are several case reports on risperidone-related bleeding; however, to our knowledge, there is no report about gingival bleeding associated with risperidone in the literature. We presented a case who experienced gingival bleeding when risperidone dose was increased to 0.5 mg/day, and subsided after decreasing the dose to 0.25 mg/day, suggesting a dose-dependent side-effect. The bleeding side effect of risperidone might be caused by several mechanisms, including 5-hydroxytryptamine 2A receptor antagonism. Although bleeding associated with risperidone is rarely reported, clinicians should be aware of this side effect.

KEY WORDS: Bleeding; Risperidone; Child; Adverse effects.

### INTRODUCTION

Risperidone has been reported to be effective in management of disruptive behaviors, including hyperactivity, irritability, aggression, and temper tantrums. Increased appetite, weight gain, headache, and sedation are among the most reported adverse effects. Bleeding is a rarely reported side effect of risperidone. Literature search revealed only four published reports of risperidone-related bleeding, including hemorrhagic cystitis,<sup>1)</sup> nasal bleeding,<sup>2,3)</sup> and gastrointestinal bleeding.<sup>4)</sup>

We hereby describe the first pediatric case of gingival bleeding during risperidone treatment.

### CASE

An 11-year-old-girl was referred to our out-patient clinic for her hyperactivity, temper tantrums, sleep problems, and self-injurious behaviors. According to her psychiatric assessment and psychometric evaluation, she was diagnosed with mild intellectual disability. She was started on risperidone 0.25 mg/day treatment for her disruptive be-

haviors and two weeks later the dose was increased to 0.5 mg/day. One-week after the dose increase, she experienced gingival bleeding when she brushed her teeth. Her mother reported that bloodstains were evident on her pillow in the morning. Risperidone was considered to be the reason for bleeding, therefore we decided to reduce the dose to 0.25 mg/day. Gingival bleeding ceased within a week. Because worsening of her behavioral problems, her mother increased the dose to 0.33 mg/day. She experienced gingival bleeding rarely (twice a month) and mildly during this dose regime, therefore we stopped the medication. She received risperidone 0.33 mg/day treatment for 4 weeks with partial response. We decided to change risperidone to methylphenidate; however, her parents refused to continue to the treatment because of their worries about the potential side effects.

Her physical examination and laboratory investigation, including platelet count, were normal. Dental referral did not reveal any cause for her bleeding. She had no history of any bleeding disorder or any other medical condition including current allergies. Her mother reported no family history of bleeding disorders. She was not taking any other medication other than risperidone at the time of the development of bleeding.

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Address for correspondence: Sabri Hergüner, MD  
Meram Tıp Fakültesi, Çocuk ve Ergen Psikiyatrisi AD, Meram,  
Konya, Turkey

Tel: +90-533-742-81-50, Fax: +90-332-233-41-40

E-mail: herguners@yahoo.com

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## DISCUSSION

There are several case reports about risperidone-related bleeding; however, to our knowledge, there is no report of gingival bleeding associated with risperidone in the literature. We presented a case who experienced gingival bleeding when risperidone dose was increased to 0.5 mg/day, and subsided after decreasing the dose to 0.25 mg/day, suggesting a dose-dependent side-effect.

It may be argued that bleeding occurred spontaneously without any obvious cause. However, the chronological relationship between the time of risperidone 0.5 mg/day administration and emergence of bleeding in the absence of an identifiable medical condition suggests risperidone to be the causative agent. There was no other agent likely to be the cause of bleeding, except risperidone, and bleeding ceased when the dose was decreased. Although an etiological relationship between risperidone use and gingival bleeding cannot be drawn from a single case, the Naranjo probability scale score (8) reveals a probable relationship.<sup>5)</sup>

The bleeding side effect of risperidone might be caused by several mechanisms, including thrombocytopenia and 5-hydroxytryptamine 2A (5-HT<sub>2A</sub>) receptor antagonism.<sup>3)</sup> Thrombocytopenia is a known adverse effect of atypical antipsychotics and has also been reported during risperidone.<sup>6)</sup> In our reported case platelet count was normal, therefore, gingival bleeding could not be a consequence of thrombocytopenia. Antagonism of 5-HT<sub>2A</sub> receptor was suggested to cause bleeding by inhibiting the release of vasoconstrictors from platelets and reducing the platelet aggregation.<sup>4)</sup> Therefore, we may speculate that risperidone's high affinity to 5-HT<sub>2A</sub> receptors might have

probably resulted gingival bleeding. This case suggests that bleeding associated with risperidone may be a dose-dependent side effect. However, these potential explanations may not describe the entire mechanism of this adverse reaction. It is also possible that she might have some undetermined predisposing factors for bleeding that is triggered by risperidone.

There are several reports on gingival bleeding during antidepressants;<sup>7)</sup> however, this is the first case on gingival bleeding associated with risperidone. Although bleeding is a rare side effect, clinicians should be aware that risperidone may cause bleeding. Risperidone may also increase the risk of bleeding in susceptible patients with a history of coagulation disorders, and with concomitant use of other drugs, including non-steroidal anti-inflammatory drugs, aspirin, or other medications that affect coagulation.

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