

Can Priapism Occur as an Idiosyncratic Reaction to Risperidone?

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Dear Editor,

Priapism is described as a painful and prolonged penile erection that occurs without sexual desire or arousal (1). It is a rare, adverse reaction to psychotropic drugs and requires urgent evaluation. Priapism can have potentially serious long-term consequences including erectile dysfunction due to ischemia and fibrosis of the corpora cavernosa (2,3).

Priapism can be associated with sickle cell anemia, perineal trauma, leukemia, and other neoplasms (1,2). It can also be associated with the use of systemic or intracorporeal vasoactive agents and antidepressants, antipsychotics, antihypertensives, and recreational drugs (4). Although typical antipsychotics are thought to be related to priapism, there are some case reports on the relationship between atypical antipsychotics (e.g., risperidone, clozapine, ziprasidone, quetiapine, olanzapine, and aripiprazole) and priapism (5,6,7,8,9,10). In the literature, priapism has been associated with risperidone administered at any stage of treatment and in different doses, alone or in combination with psychotropic drugs, and with long-acting injectable risperidone (2,11,12,13,14).

We present the case of a patient with late-onset priapism after two years of risperidone treatment. Interestingly, while priapism was not observed during the use of higher doses of risperidone (8 mg/day), it was observed at a lower dose of 4 mg/day.

A 25-year-old male with a five-year history of schizophrenia had been treated with haloperidol (10 mg/day) for three years. His compliance with the treatment schedule was high, but there were extrapyramidal side effects with partial remission. For this reason, he was admitted to a hospital; risperidone (4 mg/day) was administered, and the dose was gradually increased to 8 mg/day two years ago. During the psychiatric outpatient follow-up, his functionality was good. He has been stabilized with risperidone (4 mg/day) for the last 10 months.

In the last month, he experienced three prolonged penile erections that lasted for 12 h, each starting spontaneously without sexual arousal. He did not report these adverse events. However, when he experienced a fourth painful and prolonged erection for 30 h, he admitted himself to emergency services. He had had no sexual desire before the erection. The episode was not associated with any history of penile injections or perineal trauma, illicit or prescribed drugs, alcohol intake, or herbal medication. Risperidone treatment was immediately discontinued. His psychiatric examination revealed no abnormalities, and his physical examination revealed no abnormalities except for the penile erection. He was referred for urology consultation. Laboratory work revealed no abnormalities. He had no sickle cell traits or disease. Approximately 70 mL of dark brown blood was aspirated from the corpora cavernosa after local cold application. Blood gas analysis and pH of the aspirated blood revealed venous etiology; hence, the diagnosis of low-flow or ischemic priapism was made. Due to the prolonged penile erection, a cavernous shunt operation had to be performed. After the operation, the priapism was improved.

The patient was started on olanzapine (10 mg/day) and was discharged two weeks after the operation. There were no adverse events during the three-month follow-up period.

The blockage of alpha adrenergic receptors is thought to be related to priapism. Risperidone has a high affinity for alpha-1 and alpha-2 adrenergic receptor sites and is a potent blocker of alpha adrenergic receptors. Alpha-1 blockage leads to direct arteriolar dilatation, which results in an increased blood flow and decreased outflow secondary to effacement and subsequent obstruction of emissary veins. Furthermore, alpha-2 receptor antagonism is thought to lead to the release of a nitric oxide-like substance, which is a potent smooth muscle relaxant (15).



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Olanzapine has the lowest affinity for adrenergic receptors (16). For this reason, we started the patient on olanzapine to avoid the highest affinity for adrenergic receptors.

In this case, there was no other explanation for priapism other than the patient's risperidone treatment. The patient experienced priapism after having used risperidone for several years and after having his dosage of risperidone decreased. This supports the idea that priapism can be an idiosyncratic reaction and may not be related to the duration or dosage of antipsychotics (17). Because patients may not report priapism when it occurs, clinicians should keep in mind that priapism can be an idiosyncratic reaction and that they should inquire about sexual adverse events.

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