CASE REPORT

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Recurrent Priapism Due to Paliperidone Palmitate Use: A Case Report

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ABSTRACT

Priapism is a painful and prolonged erection of the penis without sexual stimulation. Priapism can be seen due to both typical and atypical antipsychotic drug use. A 51-year-old male who was followed up with a diagnosis of schizophrenia for 30 years and was switched from oral aripiprazole to paliperidone palmitate due to psychotic exacerbation was reported in this study. About 1 month after starting the drug, the patient presented to the emergency department with a painful and prolonged penile erection lasting 3-4 hours. Following the diagnosis of priapism by urology, the patient was relieved by intracavernous adrenaline injection and corpus cavernosum drainage and was referred to psychiatric consultation. Since the patient's examination, history, and laboratory tests could not detect a condition that could cause priapism, it was thought that priapism might be due to antipsychotic medication. One week after stopping paliperidone palmitate injection, the patient had another attack of priapism. Ten days after the second priapism, the patient was started on olanzapine, 10 mg/day, which was increased to 20 mg/day in the follow-up. The patient has been using olanzapine 20 mg/day for the past year. He is still psychiatrically stable and has no signs of priapism. To the best of our knowledge, this is the second case of recurrent priapism associated with paliperidone palmitate use.

ARTICLE HISTORY

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INTRODUCTION

Priapism, a painful and prolonged erection of the penis without sexual stimulation, is a rare but serious condition that can develop due to typical and atypical antipsychotic drugs.[1] Cases of priapism associated with many antipsychotic drugs, especially risperidone, ziprasidone, quetiapine, and clozapine, have been reported.[2-5] Although the mechanism of antipsychotic-induced priapism remains to be elucidated, the estimated cause is the blockage of alpha-1 adrenergic receptors in the corpus cavernosum.[6] Besides antipsychotic agents, drugs with high alpha-1 adrenergic blocking affinities, such as tamsulosin and trazodone, may also cause priapism.[7,8]

CASE PRESENTATION

The 51-year-old male patient, who was followed up with the diagnosis of paranoid schizophrenia for 30 years, was admitted to the psychiatry clinic in May 2020, after a psychotic exacerbation. Aripiprazole of 30 mg was switched to paliperidone palmitate (PP), aripiprazole was reduced by 15 mg, and 1 mg of lorazepam was added. The patient was administered PP 150 mg intramuscularly on days 1 and 8. After 15 days, aripiprazole and lorazepam were discontinued. The patient, whose complaints improved and was discharged with the same treatment, presented to the emergency department with the complaint of a painful, prolonged penile erection lasting 3-4 hours, approximately 1 month after starting the drug. The patient was relieved by intracavernous adrenaline injection and corpus cavernosum drainage following the diagnosis by urology and was consulted to psychiatry due to the antipsychotic medication he used.

The patient's medical and urological history indicated that he did not have any hematological disease, other systemic diseases, or pelvic trauma, and did not use alcohol, substance, or any drugs other than the antipsychotic drug. Urological examination and laboratory test results were within normal limits. The emergence of this complaint after the antipsychotic switch suggested possible relation to the recently started long-acting antipsychotic drug. Therefore, the patient's PP injection was discontinued. One week after the first event, the patient had priapism again and was similarly treated by the urology department. Since the effect of PP injection had not completely diminished and no new drug was added, the reasoning that long-acting paliperidone may have induced priapism

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became even stronger. The patient did not have similar complaints in the next 10 days. Olanzapine of 10 mg, with a relatively low risk of priapism, was started to prevent psychiatric exacerbations. The patient was evaluated psychiatrically and urologically with weekly follow-ups, and the olanzapine dose was adjusted to 20 mg. The patient has been using olanzapine of 20 mg/day for the past year, is still psychiatrically stable, and has no signs of priapism. Verbal and informed consent was obtained from the patient for publication.

DISCUSSION

This is the second case of recurrent priapism associated with long-acting paliperidone use in the literature. The first case was reported in a 55-year-old male with schizophrenia developing priapism 4 times after a single dose of PP injection and ending as the drug wore off.[9] Although the patients' diagnosis, age, long-acting paliperidone monotherapy, and recurrent priapism were similar, priapism developed on the third-day post-injection in the first case and 1 month later in the present case.

There seems to be a close relationship between the high alpha-adrenergic receptor-blocking affinity of antipsychotic drugs and priapism. Based on the evaluation of the USA FDA's (Food and Drug Administration) Adverse Event Reporting database, antipsychotics such as risperidone, ziprasidone, clozapine, and quetiapine were classified as having moderate and high alpha-adrenergic affinity, while olanzapine, aripiprazole, and paliperidone had low alpha-adrenergic affinity.[10] The finding that 3/4 of the 144 priapism cases associated with antipsychotic drugs developed due to the use of quetiapine, risperidone, and ziprasidone supports this hypothesis.[10] The PP used by this patient being an antipsychotic with low alpha-adrenergic receptor affinity may seem to contradict the above literature. However, apart from that case,[9] priapism cases related to oral or long-acting paliperidone use have also been reported.[11-13] Likewise, priapism can develop due to antipsychotic drugs with low alpha-adrenergic-blocking affinities such as olanzapine, aripiprazole, and amisulpride.[14-16]

MAIN POINTS

- Priapism, is the painful and prolonged erection of the penis without sexual stimulation.
- Both typical and atypical antipsychotic agents may cause priapism, especially those with high alpha-1 adrenergic blocking affinity.
- This is the second case of recurrent priapism associated with paliperidone palmitate use.
- Antipsychotic agent induced priapism is a rare condition that can have serious and irreversible consequences such as erectile dysfunction.
- Antipsychotics with high adrenergic blocking affinity should not be preferred in the treatment of patients at high risk of priapism.

Two comprehensive reviews evaluating priapism cases associated with psychotropic drugs in the USA and Germany reported that more than half of the cases used combinations of psychotropic drugs,[10] and an alpha -adrenergic-blocking psychotropic agent added to the treatment was a significant risk factor for priapism.[17] The development of priapism as a result of combining PP with high adrenergic blocking drugs such as trazodone or clozapine suggests avoiding the combination of adrenergic-blocking agents, especially in the patient group at risk for priapism.[18,19]

Case reports of priapism due to antipsychotic drugs reported no clear relationship between the antipsychotic dose, duration of use, administration route, patient's age and diagnosis, and the development of priapism.[10,17] In our case, priapism developed in a 51-year-old patient 1 month after the initiation of long-acting paliperidone, while different ages, doses, duration of use, and administration methods are also noteworthy in other paliperidone-induced priapism cases. Priapism developed on the third day following the long-acting paliperidone injection in 1 case,[13] while in other cases, priapism developed after quite different periods such as 2 days, 1 month, and 2 years following oral paliperidone intake.[11-13] The age of the patients also varied from 12 to 55. On the contrary, a review evaluating 50 priapism cases associated with atypical antipsychotics reported that in cases with clozapine-induced priapism, despite the high adrenergic affinity of the drug, the treatment was continued by reducing the dose due to unresponsiveness to other antipsychotics. Along with clinical improvement, a significant portion of the cases could continue using clozapine without priapism development, suggesting that the clinical well-being of the patients continues even if the dose is reduced due to the high antipsychotic efficacy of clozapine, and clozapine causes less priapism at low doses.[6] The same review reported that attempts to reuse other antipsychotics often resulted in priapism.[6]

In the present case, the patient's next dose of PP was canceled after priapism development, and no additional antipsychotic was administered for 15 days. While the long-acting effect of the drug allowed us to follow the patient for 15-20 days without additional antipsychotic administration, it also caused priapism again. In case of priapism due to antipsychotic drugs, the recommendation is to discontinue the drug after emergency urological intervention and switch to an antipsychotic drug with a low adrenergic affinity, such as aripiprazole, olanzapine, or amisulpride.[12,19] We continued the patient's treatment with olanzapine, and priapism was not observed in the 1-year follow-up. On the other hand, in patients who switch to clozapine due to resistance to other antipsychotics and have clinical improvement, reducing the drug dose appears to be an appropriate decision in case of priapism.[6]

Although psychotropic-induced priapism is rare, it is a condition that can have serious and irreversible consequences, such as erectile dysfunction. Antipsychotics with high adrenergic blocking affinity should not be preferred in the treatment of patients at high risk of priapism. If clinically necessary, the lowest possible dose should be applied, and patients should be informed about this side effect.

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REFERENCES

1. Montague DK, Jarow J, Broderick GA, et al. American Urological Association guideline on the management of priapism. *J Urol*. 2003;170(4 Pt 1):1318-1324. [CrossRef]
2. Ankem MK, Ferlise VJ, Han KR, Gazi MA, Koppisch AR, Weiss RE. Risperidone-induced priapism. *Scand J Urol Nephrol*. 2002;36(1):91-92. [CrossRef]
3. Şahmelikoğlu Onur Ö, Kızılkale H, Yumrukçal H, Gürü M. Two cases of priapism associated with Quetiapine, Psychiatry and Clinical Psychopharmacology. 2018;28:477-480. [CrossRef]
4. Surer Adanir A. Priapism associated with aripiprazole and quetiapine in an 8-year-old boy with autism. *Psychiatry and Clinical Psychopharmacology*. 2016;26:212-213. [CrossRef]
5. Thangam N, Farah RH, Sashitharan D, Abdul Kadir AK. Clozapine ınduced priapism: case series. MJP. 2016; 25(2):47-50.
6. Sood S, James W, Bailon MJ. Priapism associated with atypical antipsychotic medications: a review. *Int Clin Psychopharmacol*. 2008;23(1):9-17. [CrossRef]
7. Correas Gómez MA, Portillo Martín JA, Martín García B, et al. Trazodone-induced priapism. *Actas Urol Esp*. 2000; 24(10):840-842. [CrossRef]
8. Pahuja A, Bashir J, Williamson EM, Barber N. Unresolved priapism secondary to tamsulosin. *Int J Impot Res*. 2005;17(3):293-294. [CrossRef]
9. Buyukoz D, Kabadayı-Sahin E, Tatli SZ, Ugurlu M, Karakas-Ugurlu G. Recurrent priapism associated with single dose of paliperidone palmitate: A case report. *Anatol J Psychiatry*. 2017;18(5):513-515.
10. Andersohn F, Schmedt N, Weinmann S, Willich SN, Garbe E. Priapism associated with antipsychotics: role of alpha1 adrenoceptor affinity. *J Clin Psychopharmacol*. 2010;30(1):68-71. [CrossRef]
11. Wearne D. A case of priapism associated with paliperidone. *Aust N Z J Psychiatry*. 2014;48(10):962. [CrossRef]
12. Moodliar S, Naguy A, Elsori DH, AlKhadhari S. Paliperido ne-associated priapism in an autistic child. *Am J Ther*. 2019;347:1-2. [CrossRef]
13. Uygur OF, Uygur H. Priapism: a rare and acute-onset side effect of paliperidone. *Dusunen Adam J Psychiatry Neurol Sci*. 2019;32:175-176. [CrossRef]
14. Shahani L. Olanzapine-associated priapism. *J Neuropsychiatry Clin Neurosci*. 2012;24(4):E28-E28. [CrossRef]
15. Sonmez EO, Aksoy F, Kaya N, Camkurt MA. Dose dependent priapism induced by amisulpride use. *Psychiatry and Clinical Psychopharmacology*. 2016;26: 85-86. [CrossRef]
16. Trivedi SK, Mangot AG, Sinha S. Aripiprazole-induced priapism. *Ind Psychiatry J*. 2016;25(1):119-121. [CrossRef]
17. Greiner T, Schneider M, Regente J, et al. Priapism induced by various psychotropics: a case series. *World J Biol Psychiatry*. 2019;20(6):505-512. [CrossRef]
18. Birur B, Fargason RE, Moore N. Delayed-onset of psych opharmacologically induced priapism: a cautionary case report. *Asian J Psychiatry*. 2015;17:106. [CrossRef]
19. Ferreira LP, Ferreira TF, Godinho FF, et al. Priapism associated with atypical antipsychotic medications: a clinical report. *Prim Care Companion CNS Disord*. 2020; 22(4):19l02543. [CrossRef]