CASE REPORT

Risperidone-induced Priapism: A Rare Case Report

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Abstract

Priapism is a rare pathological condition in which a penis remains erect for an hour in the absence of stimulation or after stimulation has ended. Priapism can be of ischemic, nonischemic, and recurrent ischemic types. Ischemic type is also known as low-flow and likewise nonischemic as high-flow as well as recurrent ischemic as intermittent. Causes for ischemic priapism are many. Medications like antipsychotics are also responsible. α-adrenergic blockage is related to antipsychotics-associated priapism. The α-receptors mediate this that are located in the corpora cavernosa of the penis. A patient with risperidone-induced priapism is reported here. Switching to olanzapine resolved his problem. A drug which has α-1-blocking properties that are less marked is a preferred choice for switch. Unfortunately, we are yet to reach a consensus regarding what is the best choice of medication. It is pertinent to search for priapism risk factors. Thereafter, one should proceed to antipsychotic prescription. Not only the patient should know about this adverse effect but also one should know the need for urgent medical intervention.

Keywords: Adverse effects, Antipsychotics, Case report, Ischemia, Penis.

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Introduction

Although rare, priapism is still an important pathological condition. With no sexual stimulation, the penis gets erect. What's more, this erection of the penis is sustained for a long time, resulting in pain.[1,2] It is a urological emergency that requires evaluation of the condition on an urgent basis. In cases of delayed treatment, 30–90% of cases can lead to lethal outcomes. Among these outcomes, one is impotence and the other is tissue necrosis.[2,3]

Causes of ischemic priapism are "hemoglobinopathies, neoplastic syndromes, compressive pelviabdominal masses, and use of some recreational drugs and medications."[4] Antipsychotics are one of several responsible medications. Among all priapism caused by medications, 15–26% are due to antipsychotics.[4,5] The responsible mechanism is α-1-adrenoreceptors-induced statis of intracavernosal blood.[6,7]

A patient who had priapism from risperidone is reported here along with the how he resolved from this adverse effect is presented.

Case Description

A 20-year-old male came to the psychiatry outpatient department (OPD) of Agartala Government Medical College (AGMC) and G B Pant (GBP) Hospital, Tripura. He was Hindu by religion. He was unmarried. He was studying in college. He belonged to middle socioeconomic status. He hailed from urban part of Tripura. There was a 2-year history of aggressive behavior, sleep disturbances, irritability, muttering to self, auditory hallucinations, persecutory delusions, delusions of reference, and he was diagnosed as paranoid schizophrenia (F20.0) according to "the World Health Organization's Tenth Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10)."[8]

He was initially put on tablet risperidone 2 mg once daily continued up to 10 days. As his symptoms had not much improved, tablet risperidone was increased up to 6 mg in divided doses along with tablet trihexyphenidyl 2 mg. Within 7 days of treatment, suddenly, he developed continuous painful erection of penis without any stimulation and again landed up into psychiatry OPD in AGMC and GBP Hospital. Diagnosis was made as drug (risperidone)-induced priapism. Subsequently, the patient was referred to the urology OPD for confirmation and to rule out other possible causes. After being referred to the urologist, 10 mg of etilefrine was injected intracavernously. However, it was not successful. Next, the patient was taken to the operating room and a cavernous puncture was carried out. There was spontaneous resolution of the priapism. He had abnormal findings neither on hematology tests nor biochemistry tests. A magnetic resolution imaging (MRI) was performed 7 days after the priapism episode to evaluate the possible sequelae and no significant abnormality was detected.

Antipsychotic medication was stopped. Benzodiazepines only were prescribed for 10 days. Considering aggressive behaviors of the patient due to delusions and bizarre behavior which was difficult to manage at home, antipsychotic medication was again started. Considering the fact of least likely to cause priapism, olanzapine was chosen.[3,5] Starting at 2.5 mg per day and gradually increasing by 2.5 mg every 4th day, 15 mg per day was reached along with trihexyphenidyl 2 mg once daily. On an as needed basis, diazepam was used. This treatment regimen was well tolerated by the patient. He responded to the medication. The patient was maintained well with this regimen without any sign of priapism.

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There was no past history of priapism in this patient. There were no priapism-related risk factors too. Hematological disorders were nor reported. Treatment for erectile dysfunction was not taken. Substance use disorder was ruled out, especially cocaine or cannabis. He did not smoke too. There was no history of pelvic or genital trauma. He was taking diazepam, risperidone, and trihexyphenidyl when priapism occurred. There was neither family history of priapism nor allergies to medication.

Discussion

One way of classifying priapism is to divide it into ischemic and nonischemic.[4] Ischemic and nonischemic are also called low-flow and high-flow, respectively.[4] Penile or perineal trauma usually leads to nonischemic priapism that rarely occurs. Sickle cell disease commonly causes low-flow priapism. Even spinal cord injury can be a cause. Substances like alcohol and cocaine as well as certain medications result into this. Many psychotropic medications are implicated. Both first-generation and second-generation antipsychotics, antidepressants, and also anticonvulsants are some of them responsible for medication-induced priapism.[9,10]

Antipsychotic-induced priapism remains a mystery. α-adrenergic receptors' antagonism is suggested by the neuromuscular hypothesis.[11–13] "Resistance arteries and the trabecular system" have smooth muscle cells. Noradrenaline mediates their contraction. As a result, detumescence occurs along with penile flaccidity. This relaxation causes erection by increasing blood flow.[14] α-1 and -2-adrenergic receptors are antagonized by norepinephrine. Thus, prolonged erection as well as intracavernous statis of blood results from the blocking of these receptors. Finally, irreversible fibrosis may happen from hypoxia to acidosis.[14–16]

Not only medications from psychiatry but also from urology to cardiology are linked with priapism. The list includes "prazosin, tamsulosin, doxazosin, nifedipine, and labetalol." The list expands with inclusion of "anticoagulant drugs (warfarin and intravenous heparin), corticosteroids, and oral hypoglycemic drugs (e.g., tolbutamide)."[17–21] An α-adrenergic antagonist antidepressant, trazodone is also reported to have priapism as one of its side effects.

Conclusion

A urological emergency, priapism calls for prompt treatment in order to get rid of erectile sequelae. Antipsychotics having strong α-adrenergic affinity, like risperidone, can induce priapism. This report also underlines the importance of caution in prescribing antipsychotics and the need for periodic assessment of adverse effects, as these drugs may produce disabling priapism. However, more study is needed to explore this.

Declaration of Patient Consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his/her consent for his/her images and other clinical information to be reported in the journal. The patient understands that his/her name and initials will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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