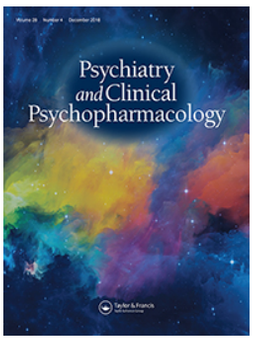

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CASE REPORT

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# Two cases of priapism associated with Quetiapine

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**ABSTRACT**

Priapism is a painful, prolonged erection that occurs without any sexual stimulation. It is an emergency that may lead impotence, urinary retention, and gangrene as long-term devastating consequences. Priapism is attributed to the blockage of alpha-1 adrenergic receptors in the corpus cavernosum and associated with the use of typical antipsychotics, notably, thioridazine. Atypical antipsychotics are increasingly being prescribed and not frequently considered to cause priapism. This side effect has been reported in patients taking ziprasidone, risperidone, clozapine, quetiapine, aripiprazole and olanzapine. The intensity of binding to alpha-1 adrenergic receptors varies among all antipsychotics; quetiapine has an intermediate affinity. Priapism may be an idiosyncratic reaction which is correlated neither with the dosage nor the duration of use of antipsychotic drug. Quetiapine has been implicated in causing priapism in a limited number of reports. A history of prolonged erections may be a possible predictor of priapism during the use of quetiapine. We report two cases of priapism associated with quetiapine and a brief review.

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Adrenergic alpha receptors; antipsychotic drugs; drug side effects; idiosyncratic reaction; priapism; quetiapine

## Introduction

Priapism is a painful, prolonged and sustained erection that occurs without any sexual stimulation. It is an emergency that may lead impotence, urinary retention and gangrene as long-term devastating consequences. 40–50% of the patients may have subsequent erectile dysfunction due to ischaemia and fibrosis of the cavernous body, even with proper treatment [1,2].

Neural and vascular factors are involved in penile erection. It has been suggested that priapism associated with antipsychotics occurs through the alpha-1 adrenergic blockade in the cavernous body resulting in parasympathetic arterial dilation as well as inhibition of sympathetic system which leads to tumescence [3]. This causes intracavernous stasis by obstruction of subtunical veins with resultant hypoxia, acidosis and pain. Alpha-2 adrenergic blockade exacerbates alpha-1 mediated priapism by stimulating the release of a nitric oxide-like substance, a potent muscle relaxant [4].

Various drugs have been implicated in priapism. Antipsychotic medications have varying affinities for adrenergic receptors. Although being rare, priapism is a well-known side effect that occurs with first generation antipsychotics; a few cases have also been reported with second generation antipsychotics. Ziprasidone and risperidone have the highest affinity, followed by clozapine and quetiapine for adrenergic receptors [4]. Priapism is attributed to the blockade of alpha-1 adrenergic receptors in corpus cavernosum. This side effect was previously thought to be associated with the use of typical antipsychotics, notably, thioridazine. Atypical antipsychotics, due to their favourable side effect profiles, are being prescribed ever more often and are considered to cause priapism infrequently. However, this side effect has been reported in patients taking ziprasidone, risperidone, clozapine, quetiapine, aripiprazole and olanzapine. The affinity of these drugs to alpha-1 adrenergic receptors vary significantly; affinity of quetiapine, compared to other antipsychotics is intermediate [5].

We report two cases of quetiapine induced priapism. Our first case is important in demonstrating that priapism as an idiosyncratic reaction, as decreasing the quetiapine dose did not work. Furthermore, this case one of the limited number, in which priapism was reported in the absence of a physical comorbidity [6]. Our second case is also important in demonstrating a history of prolonged erections as a predictor of priapism.

## Case 1:

A 49-year-old male patient was admitted to psychiatry clinic due to delusions of grandeur, insomnia, rapid speech, agitation, visual and auditory hallucinations. He had no personal or family history of psychiatric or neurologic disease. Speech was non-fluent with loosening of associations. Impaired recall, abstract thinking, judgment, behaviour planning, attention was noted.

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His laboratory work-up was unremarkable; including a negative urine toxicology and computed tomography (CT) of brain scan. The patient met Diagnostic and Statistical Manual of Mental Disorders (DSM) 5 criteria for a manic episode and was hospitalized. He was administered with haloperidol 20 mg/day, biperiden 4 mg/day and quetiapine 100 mg/day. The patient's symptoms had improved within one week with attainment of euthymic mood, improved sleep and resolution of delusions of grandeur. One week after discharge from the hospital with the same medication, the patient was admitted to our outpatient psychiatry clinic with priapism. He had not continued the treatment as prescribed because of sedation but had taken quetiapine 100 mg/day only. After consulting with a urologist, he was administered with cold compression and quetiapine dose was decreased to 50 mg/day. Priapism still continued in the one week after control examination. Quetiapine was discontinued and treatment with chlorpromazine 100 mg/day was started. Chlorpromazine was preferred for insomnia and psychotic symptoms. The patient responded well, most probably due to discontinuation of quetiapine treatment and priapism has resolved within one week.

## Case 2:

A 22-year-old male patient was hospitalized because of unipolar depression after a suicide attempt. He had been previously hospitalized before due to suicidal ideas, insomnia, auditory hallucinations, delusions of persecution four years ago. He had been administered with venlafaxine 75 mg/day and quetiapine 600 mg/day; as a result, his symptoms had gradually improved within one month. Three months after he had been discharged from the hospital, his first long lasting and painless spontaneous erection had occurred and he had been advised not to use his psychiatric drugs by a urologist. After discontinuing his psychiatric medication, his psychotic symptoms relapsed. Consequently, he had been administered with valproic acid and olanzapine, the doses of which are unknown. He had experienced six priapism episodes within the first six months, the most recent lasting five hours, after which he had had a spongio-cavernous shunt operation for recurrent priapism one year ago. Four months after the shunt surgery, his complaints of anhedonia, suicidal ideas, insomnia, avolution had recurred and he had been administered risperidone, quetiapine, aripiprazole, citalopram, the doses of which are also unknown. He had discontinued this medication because of priapism for a month prior to his admission at our clinic. His psychiatric evaluation revealed depressed mood and affect, decreased speech, psychomotor retardation, auditory hallucinations, nihilistic delusions, suicidal ideas. His laboratory work-up was unremarkable; including negative urine toxicology and brain CT scan. The patient met DSM 5 criteria for major depressive episode with psychotic features; treatment with 50 mg of quetiapine per day was started. Quetiapine was the drug of choice for its sedative effect. As the patient had a prior priapism due to an antipsychotic, we planned to administer quetiapine in slow titration. On the sixth day of quetiapine treatment, priapism occurred. After a urology consultation, ice compression and 25 mg/day of chlorpromazine was started, quetiapine treatment was stopped and the chlorpromazine dose was increased to 200 mg/day. Chlorpromazine was preferred for insomnia and psychotic symptoms. The patient responded well to discontinuation of quetiapine and priapism had resolved within one week. Seven sessions of electroconvulsive therapy (ECT) was administered for suicidal ideas. Following ECT treatment, olanzapine 2.5 mg/day and lithuril 300 mg/day were started and increased up to 20 mg/day and 600 mg/day within 15 days, respectively. After the patient's suicidal ideas, depressed mood, psychotic symptoms, psychomotor retardation gradually improved the patient was discharged from the hospital with olanzapine 20 mg/day and lithium 600 mg/day for its anti-suicidal effect.

## Discussion

Our first case is important in demonstrating that priapism as an idiosyncratic reaction, as decreasing the quetiapine dose did not work. Furthermore, this case one of the limited number, in which priapism was reported in the absence of a physical comorbidity [6]. Our second case is also important in demonstrating a history of

**Table 1.** Cases about priapism associated with quetiapine.

| Authors/ year | Dose | Duration |
|---|---|---|
| Pais VM et. al. 2001 | 675 mg/day | for suicide(27 tablets of 25 mg quetiapine) |
| du Toit et. al. 2004 | 600 mg/day | 24 days after switching from risperidone and trazadone to quetiapine |
| Davol P. et al. 2005 | 600 mg/day | More than one year |
| Harrison G. et. al 2006 | 800 mg/day | Several months after initiation quetiapine |
| Casiano H. et al 2007 | 700 mg/day | 8th day of the use |
| Birnbaum BF et. al. 2008 | 7–9 quetiapine tb (unknown dose) | For suicide |
| Torun F et. al. 2011 | 300 mg/day | a few hours after taking single dose |
| Tsai AC 2011 | 100 mg/day | 15 months after initiation quetiapine treatment |
| Ozkaya et. al. 2012 | 200 mg/day | 6 hours after taking dose |
| Maakaron JE et. al. 2013 | 25 mg/day | After dose reduction from 300 to 25 mg/day |
| Saghafi et al. 2014 | 200 mg/day | A few hours after taking dose |
| Koloth R et. al. 2015 | 25 mg/day | An hour after taking the first dose |

prolonged erections as a predictor of priapism. Quetiapine has been suggested in causing priapism in a limited number of case reports [7–17] (Table 1).

As for reports without any predisposing factors, only two were known to us. In one case, a 25-year-old African-American male with psychosis, who had been taking 300 mg/day of quetiapine for more than one year, with no history of sickle-cell anaemia or trait, malignancy, recent perineal trauma or drug use known to predispose to priapism, had this adverse reaction [9]. Another case is a suicide attempt of a schizophrenic patient with 675 mg of quetiapine (17). Quetiapine which is known to have antagonistic activity on both alpha-1 and alpha-2 receptors was the cause in both of cases.

Priapism may be considered as an idiosyncratic reaction which is correlated neither with the dosage nor the duration of use of antipsychotic drug [18]. In one report, a 44-year-old man with a diagnosis of schizophrenia for 23 years previously developed priapism with the combination of risperidone 8 mg/day and trazodone. After switching to quetiapine 600 mg/day, priapism occurred again within 24 days [8]. Finally, with olanzapine 20 mg/day, priapism developed within 53 days. Likewise in our first case, priapism occurred within 10 days with 100 mg/day quetiapine and it continued despite a reduction of the quetiapine dose. However, in another case report, decreasing the dose of quetiapine was beneficial in the treatment of priapism. In this case, priapism occurred with 300 mg/day of quetiapine but with the decrease of the dose from 300 mg/day to 100 mg/day priapism resolved. It was suggested that there had not been any sign of priapism during the two months of the follow-up under the same treatment [19]. However, in our second case, the first spontaneous erection occurred three months after the initiation of quetiapine and venlafaxine treatment. Additionally, it may be suggested that following up for two months may be a short time to safely consider the risk of priapism as low.

Nonischaemic priapism may occur due to an arterio-sinusoidal fistula causing irregular arterial blood flow. This may happen as a result of penetrative or blunt trauma of perineum and penis. Nonischaemic priapism may also occur after cavernous shunt surgery because of a damage to cavernous artery [20]. In our second case, the patient had a history of cavernous shunt surgery and it may be suggested that this surgery could predispose the patient to priapism.

Priapism is often presented by the onset of recurrent, prolonged and painless erections without any sexual stimulation. In a reported case report of priapism associated with risperidone, it was suggested that prolonged erections (15–30 minutes) could be thought of as a predictor of priapism [21]. In our second case, the patient had a history of prolonged, painless erections starting after three months of treatment with 600 mg/day of quetiapine and 75 mg/day of venlafaxine. As a result, within six months, he had six more priapism attacks, the last one resulting in spongiocavernous shunt surgery. Therefore, our second case supports the idea that prolonged and painless erections without any sexual stimulation should be thought of as a predictor of priapism.

With increasing use of atypical antipsychotics, clinicians should have an awareness of the risk of priapism. It is important to inform the patient regarding the risk of such this side effect and monitor patients taking antipsychotics. Monitoring should include screening for sexual side effects of antipsychotics. The clinician should be aware of the history of prolonged and painless erections as a predictor of priapism.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## References

[1] Patel AG, Mukherji K, Lee A. Priapism associated with psychotropic drugs. Br J Hosp Med. 1995;55(6):315–319.
[2] Compton MT, Miller AH. Priapism associated with conventional and atypical antipsychotic medications: a review. J Clin Psychiatry. 2001;62:362–366.
[3] Segraves RT. Effects of psychotropic drugs on human erection and ejaculation. Arch Gen Psychiatry. 1989;46(3):275–284.
[4] Deirmenjian JM, Erhart SM, Wirshing DA, et al. Olanzapineinduced reversible priapism: a case report. J Clin Psychopharmacol. 1998;18(4):351–353.
[5] Andherson F, Schemdr N, Weinmann S, et al. Priapism associated with antipsychotics: role of alpha-1 adrenoreceptor affinity. J Clin Psychopharmacol. 2010;30:68–71.
[6] Torun F, Yilmaz E, Gümüş E. Priapism due to a single dose of quetiapine: a case report. Turk Psikiyatri Derg. 2011;22(3):195–199.
[7] Pais VM, Ayvazian PJ. Priapism from quetiapine overdose: first report and proposal of mechanism. Urology. 2001;58(3):462.
[8] Du Toit RM, Millson RCM, Heaton JPM, et al. Priapism. Can J Psychiat. 2004;49(12):870–871..
[9] Davol P, Rukstails P. Priapism associated with routine Use of Quetiapine: case report and review of the literature. Urology. 2005;66:13–14.
[10] Harrison G, Dilley JW, Loeb L, et al. Priapism and quetiapine in an HIV positive male. J Clin Psychopharmacol. 2006;26:100–101.
[11] Casiano H, Globerman D, Enns MW. Recurrent priapism during treatment with clozapine, quetiapine and haloperidol. J Psychopharmacol. 2007;21:898–899.
[12] Birnbaum BF, Pinzone JJ. Sickle cell trait and priapism: a case report and review of the literature. Cases J. 2008;1:429.
[13] Tsai AC. A case of recurrent priapism in the context of quetiapine use, discontinuation, and rechallenge. J Clin Psychopharmacol. 2011;31(2):235–236.

[14] Ozkaya F, Ziypak T, Adanur S, et al. The occurrence of priapism as a result of the use of a single dose of Quetiapine. Eurasian J Med. 2012;44(2):122–123.
[15] Maakaron JE, Matta BN, Rebeiz J, et al. Idiosyncratic intermittent nocturnal priapism occurring after quetiapine dose reduction. Aust NZ J Psychiat. 2013;47 (11):1087–1087.
[16] Saghafi O, Kao A, Druck J. Recurrent priapism from therapeutic quetiapine. West J Emerg Med. 2014;15 (1):114–116.
[17] Koloth R, John AP. Occurrence of stuttering priapism on low dose of quetiapine. Austr NZ J Psychiatr. 2015;49(8):757–757.
[18] Thompson JL, Ware EA, Blashfield R. Psychotropic medication and priapism: a comprehensive review. J Clin Psychiatry. 1990;51:430–433.
[19] Kartala S, Gül IG, Karlıdağ R, et al. Ketiapin Tedavisi Sırasında Tekrarlayan Priapizm. Klin Psikofarmakol Bülteni-Bulletin Clin Psychopharm. 2010;20 (4):327–328.
[20] Aydoğdu Ö, Karaköse A, Ateşçi YZ. Priapizm: tanı ve tedavi yöntemleri. Androloji. 2013; 54:168–171.
[21] Tekell JL, Smith EA, Silva JA. Prolonged erection associated with risperidone treatment. Am J Psychiatry. 1995;152(7):1097.