

# Citalopram induced Priapism-the Hard Fact

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### ABSTRACT

Priapism is a persistent, usually painful, erection that lasts for more than four hours and occurs without sexual stimulation. The condition develops when blood in the penis becomes trapped and is unable to drain. This condition appears to affect only the corpora cavernosa, while the corpora spongiosum of the glans penis and surrounding urethra remain flaccid. Priapism may be a urologic emergency that is associated with the development of irreversible erectile function problems. Therefore, immediate and aggressive management may be necessary. If the condition is not treated immediately, it can lead to scarring and permanent erectile dysfunction. Citalopram is a relatively new selective serotonin reuptake inhibitor (SSRI) that is becoming widely administered for the treatment of depression. Selective serotonin reuptake inhibitors generally are associated with mild adverse sexual side effects; however, more serious reactions may occur. Although selective serotonin reuptake inhibitors (SSRIs) can induce sexual side effects, such as diminished libido, delayed orgasm, anorgasmia, ejaculatory disturbances, and erectile dysfunction, priapism occurs rarely [1].

We present a case report of 45 years old gentleman who presented in A&E of Gloucester Royal Infirmary, Gloucestershire UK, with priapism of 4 days' duration.

### CASE REPORT

A 45 years old male patient was referred to A&E with history of painful erection of penis since the last 4 days. He had experienced the same problem two months ago which had lasted for around 12 hours and then settled spontaneously.

He was otherwise fit looking gentleman. His systemic examination did not reveal any abnormality. There was no difficulty in passing urine. His past medical history revealed that he was suffering from depression and was dependant on alcohol and used to

drink around 54 pints of alcohol a week. He was also smoker since the age of 14 years and used to smoke 40-50 cigarettes a day. His sexual history was quite unremarkable and he denied any sexual problems since his first episode of priapism. He denied intake of Viagra or any other medication to boost his sexual performance. His usual medications included 40 mg of Citalopram and 5mg of Diazepam a day.

Examination of the external genitalia showed penis which was rather blushed and in full erection touching the anterior abdominal wall. Both the corpora cavernosa were rigid while the glans was soft to touch. Both the testes, epididymes and vasa were normal.

At the time of admission his Hb. was 12.6g/dl, WCC 17.6, Neutrophils 14.1, Platelets, 250, Urea 3.3, Creatinine 77 and CRP was 191. His serum electrolytes, sugar, calcium, and liver function tests were normal.

His blood was sent for further tests which did not reveal sickle cell disease.

His preliminary management included analgesia with morphine and ciprofloxacin for raised WCC although there was no sign of infection anywhere in the body. He was taken to theatre and under penile block with 1% lignocain and intravenous sedoanalgesia, aspiration and lavage of old, dark, viscid blood from corpora cavernosa with heparinised saline was done which resulted in partial detumescence of penis. Post operatively he was carried on with analgesia and antibiotics. His penis did not achieve complete detumescence although pain became quite tolerable and the rigidity of the penis gradually subsided. Any further management after aspiration and lavage was not considered appropriate due to the time lapse between onset and the presentation.

### DISCUSSION

Priapism can occur in all age groups, including newborns. Most cases of priapism are

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clustered between two age groups, between the ages of five to ten and twenty to fifty years.

### CAUSES OF PRIAPISM IN CHILDREN

Children with priapism are typically those who have leukemia. In this situation, the white blood cells occlude, or block the outflow of blood from the penis causing priapism. Also, children with sickle-cell disease can be afflicted with priapism. In this situation, the penis receives low oxygen, and therefore, the blood sickles and prevents outflow because of sludging. Other rare causes of priapism in childhood include trauma, either to the penis or to the perineum. Additionally, spinal cord injuries can cause priapism.

### CAUSES OF PRIAPISM IN ADULTS:

No cause can be discerned in many cases of priapism. Known Causes are

1. Sickle Cell Disease: It is reported that 42 percent of all sickle-cell adults and 64 percent of all sickle-cell children will eventually develop priapism.
2. Drugs: The most common cause of priapism is pharmacological injection therapy, which far outshadows all currently known causes. Drug-related priapism includes those drugs used to treat psychotic type illnesses, including Thorazine and chlorpromazine. Other more uncommon drugs include those used to treat high-blood pressure such as prazosin.

Other causes of priapism include:

3. Trauma to the spinal cord or to the genital area
4. Black widow spider bites
5. Carbon monoxide poisoning
6. In rare cases, priapism may be related to cancers that can affect the penis and prevent the outflow of blood.

The most common proposed mechanism for drug-induced priapism is through  $\alpha$ -adrenergic blockade, and especially  $\alpha_1$ -blockade. Penile rigidity and flaccidity are mediated through relaxation and contraction, respectively, of the smooth muscles of both the cavernosal sinus spaces and the arteriolar tree. Resistance to blood flow is high in the flaccid state because the sinuses and arterial branches contract. Intrinsic smooth muscle and adrenergic tone maintain this contraction.<sup>[6]</sup>  $\alpha$ -Adrenergic blockers can cause

smooth muscle relaxation that results in minimal resistance to incoming blood flow.<sup>[2, 6]</sup>

Another possible mechanism for drug-induced priapism is through stimulation of central nervous system (CNS) serotonin (5-HT) 1B and 5-HT<sub>1C/1D</sub> receptors or inhibition of 5-HT<sub>1A</sub> and 5-HT<sub>2</sub> receptors. This explanation is based on findings that serotonin may have both facilitating and inhibitory effects on an erection, depending on which type or subtype of 5-HT receptor is involved and the level of stimulation [2,7]. Citalopram-induced priapism most likely occurs because Citalopram inhibits CNS reuptake of serotonin, which enhances serotonergic activity [1].

Excessive use of chemical agents such as papaverine, phentolamine, and alprostadil (prostaglandin E<sub>1</sub>), which are used to induce erection, may produce priapism [8].

Virtually all antipsychotic drugs have caused priapism rarely of the conventional antipsychotic agents, chlorpromazine and thioridazine have the greatest  $\alpha_1$ -adrenergic affinity and have been most frequently reported to be associated with priapism [9] of the atypical antipsychotic agents, risperidone has the greatest  $\alpha_1$ -adrenergic affinity and frequency of priapism [9] although clozapine.[9] olanzapine.[9] and quetiapin [10] also have been associated with it. Trazodone is the anti-depressant drug most frequently implicated in the precipitation of priapism [6]. Other anti-depressants reported to cause the condition are fluoxetine, sertraline, paroxetine, nefazodone, fluvoxamine, bupropion, venlafaxine, and doxepin.[8] Antihypertensive agents that have  $\alpha_1$ -adrenergic antagonist activity, such as prazosin, terazosin, doxazosin, and labetalol, have been associated with priapism [8]. Hydralazine causes direct relaxation of the vascular smooth muscle and has been associated with the disorder [8]. Anti-coagulants such as warfarin and heparin have been associated with priapism [8]. It even has been described in persons taking androstenedione for athletic-related purposes [8].

Several drugs of abuse, including ethanol and cocaine, have been associated with priapism.[2] Recently, the condition was described in a patient who took Ecstasy.<sup>[7]</sup> Many other agents, such as buspirone, omeprazole, phenytoin, tamoxifen, testosterone, hydroxyzine, metoclopramide, and levodopa, are also associated with priapism.[8] It is unknown if drugs act in an additive or synergistic manner to cause the condition.

Although the disorder primarily is seen in men, priapism of the clitoris has been described in women. Drug-induced priapism in women has been associated with trazodone, [11] citalopram,[12] and nefazodone. [13] The frequency in women, however, is rare.

Immediate treatment of priapism that can be started before arrival at the hospital includes applying ice packs to the perineum and penis and having the patient walk up stairs in order to generate an arterial steal phenomenon [14]. Oral terbutaline, a selective  $\beta_2$ -adrenergic agonist, has been effective in causing detumescence in some patients with pharmacologically induced priapism. The dosing regimen for this agent is 5 mg followed by another 5 mg 15 minutes later, which produces resolution in about one-third of patients [3,14].

If no resolution occurs within 30 minutes, injection therapy is required [14]. Aspiration of the stagnant blood from the corpus cavernosa is indicated. Following aspiration, an  $\alpha$ -adrenergic agonist is injected to limit the amount of blood entering the corpus cavernosa. Phenylephrine 250-500  $\mu\text{g}$  is injected intracavernously approximately every 5 minutes until detumescence results. Phenylephrine solution is made by mixing phenylephrine 10 mg/ml with 19 ml of normal saline.[3] Epinephrine 10-20  $\mu\text{g}$  and ephedrine 50-100  $\mu\text{g}$  are alternative recommendations.[3] Surgical procedures usually are started after three trials of  $\alpha$ -adrenergic therapy [6].

## CONCLUSION

Citalopram hydrobromide is a phthalane derivative like other second generation antidepressant agents. However, it is currently the most highly selective and potent serotonin reuptake inhibitor.

Citalopram enhances serotonergic neurotransmission through selective and potent inhibition of neuronal serotonin reuptake. Anticholinergic effects may occur with this agent.

Citalopram is used in the treatment of depression, panic disorder, alcohol withdrawal, various pain syndromes including neuropathic pain, and pathological crying which may occur following cerebral damage.

Although the frequency of SSRI-induced priapism is rare, the condition is a medical emergency. Toxic dosages of citalopram appear to be more likely

to induce priapism than therapeutic dosages. Patients with a history of priapism or those receiving concurrent drug therapy associated with priapism may be more susceptible to this serious reaction. Treatment should be started as soon as drug-induced priapism is recognized. Although citalopram did not potentiate the cognitive and psychomotor effects of alcohol in volunteers, the concomitant use of alcohol and citalopram should be avoided. [<http://www.healthplace.com/medications/celexa.asp>]

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