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CASE REPORT

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Levomepromazine-induced priapism: a description of clinical cases

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Abstract

Introduction: Priapism is defined as a persistent and painful erection without sexual stimulation that lasts at least 4 hours. Although rare, it can be triggered by some factors such as hemoglobinopathies, paraneoplastic syndromes, and the use of recreational drugs and antipsychotics, with atypical and typical antipsychotics being responsible for half of the medication-induced priapisms. **Objective:** The present study aimed to record two clinical cases of priapism after the administration of a typical antipsychotic, levomepromazine, in two patients who were hospitalized in a psychiatric institution. It is important to recognize this manifestation to guide patients about prolonged and pathological erection, to prevent not only possible complications but also to ensure good medication adherence. **Clinical cases:** This study was analyzed and approved by the Research Ethics Committee according to a substantiated opinion number 6.949.882, and the patient's consent through the Informed Consent Form. **Patient 1:** Upon admission, he was prescribed thiamine, lorazepam, and levomepromazine. After eight days of regular use of the medication, he presented with prolonged (>4h) painful penile erection without the presence of sexual stimulation or excitement and was diagnosed with priapism. **Patient 2:** In the final phase of treatment, stable, when after withdrawal of benzodiazepines he presented with initial insomnia, it was decided to optimize the dose of levomepromazine (already being used) from 75 mg to 100 mg at night. One day later, he presented with priapism and was referred to the emergency room and administered local analgesia. **Final considerations:** Based on the two clinical case reports described, it is possible to infer that priapism was generated as a consequence of the use of levomepromazine, since this type of adverse reaction can already be expected, although not so frequently, from the use of antipsychotics based on the existing literature.

Keywords: Priapism. Antipsychotics. Levomepromazine.

Introduction

Priapism is defined as a persistent and painful erection without sexual stimulation that lasts at least 4 hours [1]. Although rare, it can be triggered by some factors such as hemoglobinopathies, paraneoplastic syndromes, and the use of recreational drugs and antipsychotics, with atypical and typical antipsychotics being responsible for half of the medication-induced priapisms [1-5].

Also, priapism is classified into 3 subtypes ischemic, non-ischemic, and stuttering or intermittent priapism [6]. Priapism caused by antipsychotics is often associated with the ischemic, veno-occlusive, or low-flow subtype, in which blood stasis occurs, generating inflammation and penile pain [1]. Although the pathophysiology related to antipsychotics is not fully defined, it is believed that this undesirable manifestation occurs through the action of these medications on alpha-1 adrenergic receptor antagonists [7].

It is also known that priapism is considered a urological emergency, since within a few hours there is the formation of interstitial edema, destruction of the

sinusoidal endothelium, and can generate thrombocyte adhesions, necrosis, and fibrosis of the smooth muscle in about 24 hours. Therefore, delay in care can result not only in erectile dysfunction [3] but also in serious and irreversible consequences, even leading to amputation; these facts not only impair the patient's quality of life but also create possible obstacles to medication adherence.

Therefore, the present study aimed to record two clinical cases of priapism after the administration of a typical antipsychotic, levomepromazine, in two patients who were hospitalized in a psychiatric institution. It is important to recognize this manifestation to offer guidance to patients about prolonged and pathological erections, to prevent not only possible complications but also to ensure good medication adherence.

Case report

The present clinical case report study was elaborated according to the rules of **CARE case report**. Available on: https://www.care-statement.org/. Accessed on: 04/14/2025.

Ethical Aspects

This study was analyzed and approved by the Research Ethics Committee according to a substantiated opinion number 6.949.882, and obtaining the patient's consent through the Informed Consent Form according to CNS/CONEP Resolution 466/12. Information collected retrospectively from records found in medical records, supplemented by periodic consultations carried out during hospitalization, was used for this case report.

Patient Information and Clinical Findings, Timeline, Diagnostic Assessment, Therapeutic Intervention and Follow-up

Description of Clinical Cases

The patients, young adults, were both admitted to a psychiatric hospital due to a history of multiple substance use.

- **Patient 1:** Upon admission, Thiamine, Lorazepam, and Levomepromazine were prescribed. After eight days of regular use of the medication, he presented with prolonged (>4h) painful penile erection without the presence of sexual stimulation or excitement and was diagnosed with priapism. He was taken to the emergency care unit, and anesthetic blockade and drainage were performed, which resolved the condition. It was decided to continue the medication, as he was stable and denied fissure. After two days, he presented the condition again, where in conversation, he reported a positive previous history 3 years ago, when he was under outpatient follow-up and regular use of medications, which were different from the current ones; evidencing a possible undesirable effect of the medication. He was referred to the referral hospital and admitted for a surgical procedure, along with a change in medication.
- **Patient 2:** In the final phase of treatment, stable, when after withdrawal of benzodiazepines he presented initial insomnia, it was decided to optimize the dose of Levomepromazine (already being used) from 75 mg to 100 mg at night. One day later, he presented priapism and was referred to the emergency care unit and given local analgesia; the patient denied any previous history of urological disorders. The dose of the medication was returned to 75 mg, with no new episodes and he was advised to seek medical help if the condition recurred.

Discussion

From the two clinical case reports described, it is possible to infer that priapism was generated as a consequence of the use of levomepromazine, since this type of adverse reaction can already be expected, although not so frequently, from the use of antipsychotics based on the existing literature [5]. Some recent studies demonstrate a theory that explains the pathophysiology of the action of antipsychotics on priapism by blocking alpha 1 adrenergic receptors that induce intracavernous blood stasis, while the stimulation of this receptor by noradrenaline is responsible for penile flaccidity [4].

A certain study observed that the antipsychotics that were most related to priapism had a greater affinity for the alpha 1 adrenergic receptor, as in the case of risperidone and chlorpromazine [5]. Therefore, there is a dilemma between changing the medication and running the risk of destabilizing the psychiatric condition. Therefore, we must always evaluate the risk/benefit of such changes. Since this is a serious manifestation, one should initially study ways to alleviate possible mental decompensations, which may involve changing medications or, as in the example cited here, gradually reducing doses, observing tolerability, and ensuring good adherence, as well as providing pertinent guidance on adverse effects [8-10].

Final considerations

In addition to causing functional impairment, sexual dysfunctions, including priapism, affect

medication adherence in the use of antipsychotics. Patients who have had such a side effect may stop taking the medications on their own or even have permanent sequelae due to fibrosis or ischemia generated, impairing the therapeutic process as a whole. Such adversities, if not clarified, may be an obstacle for patients who have such medications as the central pillar of their treatment, such as schizophrenia, being essential for stabilizing the condition. Furthermore, as it is an emergency, it must be identified and treated early, whether through invasive or non-invasive procedures, as well as changing the antipsychotics in use and educating the patient about warning signs, so that they can identify the condition quickly and seek help.

CRediT

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Ethical Approval

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Informed Consent

Not applicable.

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Data Sharing Statement

No additional data are available.

Conflict of Interest

The authors declare no conflict of interest.

Similarity Check

It was applied by Ithenticate[@].

Application of Artificial Intelligence (AI)

Not applicable.

Peer Review Process

It was performed.

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