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CHRONIC INFLAMMATORY LESIONS OF THE GROIN IN A PATIENT WITH SCHIZOPHRENIA DURING LONG-TERM POLYPHARMACOTHERAPY: A POTENTIAL ADVERSE EFFECT OF ANTIPSYCHOTIC DRUGS

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ABSTRACT

Objective: This paper presents a case report of a patient with recurrent skin lesions of probable drug-induced etiology. The study highlights the importance of considering adverse drug reactions.
Methods: A detailed clinical interview, medical documentation, and the patient's pharmacological treatment were analyzed, with particular emphasis on the potential adverse effects of the medications used. The analysis included an assessment of the temporal relationship between the administered drugs and the occurrence of skin lesions, as well as the exclusion of other possible causes, including infectious etiologies. Particular attention was paid to the possibility of a drug-induced nature of the observed lesions.
Key Findings: A patient with long-standing schizophrenia receiving extensive polypharmacotherapy developed chronic inflammatory lesions in the groin area. Comprehensive diagnostic evaluation excluded infectious causes, indicating a probable drug-induced etiology of the lesions. This case highlights the importance of considering adverse drug reactions and polypharmacotherapy in the diagnostic process of chronic skin lesions.
Conclusions: By presenting this case, we aim to emphasize that chronic skin lesions in patients undergoing long-term polypharmacotherapy may most likely be drug-induced, particularly after infectious causes have been excluded. In clinical practice, careful attention should be paid to the medications the patient is taking, as well as to potential drug interactions and adverse effects. With appropriate medical supervision, however, the condition may remain stable and well controlled.

KEYWORDS

Schizophrenia, Antipsychotic Drugs, Skin Lesions, Polypharmacotherapy, Drug-Induced Hyperhidrosis

CITATION

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Introduction

Schizophrenia is a severe psychiatric disorder with an estimated prevalence ranging from 0.3% to 2.3%. Its etiology is not fully understood, and the first symptoms most commonly appear at a young age. Properly selected pharmacological treatment enables symptom reduction and improvement in patients' overall functioning [1]. At the same time, pharmacotherapy of schizophrenia may be associated with adverse effects, among which skin rashes induced by antipsychotic drugs are considered rare complications [2]. Antipsychotic medications may exhibit immunomodulatory properties through their influence on pro-inflammatory and anti-inflammatory mediators within complex homeostatic mechanisms, which may play a role in the pathogenesis of drug-induced reactions. Due to the rarity of these complications, their description is of significant clinical importance [1]. In patients chronically treated with antipsychotic medications, the risk of adverse effects increases with the number of administered drugs. Both direct drug-induced reactions caused by neuroleptics and pharmacokinetic interactions related to hepatic metabolism, particularly involving the cytochrome P450 system, are of clinical importance. Concomitant use of internal medicine drugs, including hepatological medications, may lead to increased toxicity and the development of cutaneous manifestations [3]. All data used in this study were collected and processed in full compliance with applicable ethical standards and regulations concerning the protection of personal data. The information presented in this work has been thoroughly anonymized, and no elements that could directly or indirectly identify the participant have been disclosed. Any potentially identifiable details have been modified or omitted to ensure complete confidentiality while preserving the scientific value of the data. Prior to inclusion in the study, the participant was fully informed about the nature, purpose, and scope of the research, including the intention to use the collected data for scientific analysis and publication. The participant received clear and comprehensive information regarding how the data would be handled, stored, and presented in an anonymized form. Written informed consent was obtained from the participant before any data collection took place. The consent explicitly covered the use of

anonymized clinical information for research purposes, as well as permission for publication, including the description of the case in a scientific context. The data was included in the patient's records. The participant confirmed their understanding of the study procedures and voluntarily agreed to participate, with the right to withdraw consent at any stage without any consequences. All procedures performed in this study were conducted in accordance with the ethical principles outlined in the Declaration of Helsinki and relevant national guidelines. The following passage from the Declaration encapsulates the core principles guiding this study:„In medical research involving human participants capable of giving informed consent, each potential participant must be adequately informed in plain language of the aims, methods, anticipated benefits and potential risks and burdens, qualifications of the researcher, sources of funding, any potential conflicts of interest, provisions to protect privacy and confidentiality, incentives for participants, provisions for treating and/or compensating participants who are harmed as a consequence of participation, and any other relevant aspects of the research. The potential participant must be informed of the right to refuse to participate in the research or to withdraw consent to participate at any time without reprisal. Special attention should be given to the specific information and communication needs of individual potential participants as well as to the methods used to deliver the information. After ensuring that the potential participant has understood the information, the physician or another qualified individual must then seek the potential participant's freely given informed consent, formally documented on paper or electronically. If the consent cannot be expressed on paper or electronically, the non-written consent must be formally witnessed and documented. All medical research participants should be given the option of being informed about the general outcome and results of the research."[4]

Case Report

A 41-year-old male patient has remained under continuous psychiatric care since 2003 due to a diagnosis of schizophrenia. During the course of his psychiatric illness, three psychiatric hospitalizations were recorded, the last of which took place in 2009 and was associated with a situational suicide attempt involving self-inflicted skin injury through cutting. Currently, the patient remains under regular outpatient care at a mental health clinic, attends follow-up visits, and adheres to the prescribed pharmacological treatment. His mental condition is continuously monitored, and the course of the disease is chronic with periods of relative stabilization. The medical documentation revealed numerous comorbidities. In addition to schizophrenia, the patient was diagnosed with gastritis and duodenitis, lipid metabolism disorders and other lipidemias, affective mood disorders, fatty liver disease, cardiac arrhythmias coexisting with arterial hypertension, recurrent conjunctivitis, other cerebrovascular diseases, degenerative spinal disorders, and hemorrhoids. Additional diagnoses included scoliosis, gastroesophageal reflux disease, generalized osteoarthritis, recurrent depressive disorder, lumbar intervertebral disc disorders with nerve root involvement, hemangioma of unspecified location, coxarthrosis, unspecified thyroid disease, deficiency of other specified B vitamins, internal knee nerve injury, other diseases of the anus and rectum, benign prostatic hyperplasia, epilepsy, and nephrolithiasis with ureterolithiasis. The coexistence of numerous somatic and psychiatric disorders requires multidisciplinary medical care, regular health monitoring, and continuous adjustment of pharmacological treatment according to the patient's current clinical condition. Due to multiple somatic diseases and coexisting psychiatric disorders, the patient remains on chronic, extensive polypharmacotherapy. The treatment regimen includes psychiatric, neurological, analgesic, cardiological, and gastroenterological medications. Psychiatric treatment includes the antipsychotic medications olanzapine (Zalasta 10 mg) and aripiprazole (Aryzalera 15 mg). Additionally, the patient receives hydroxyzine (Hydroxyzinum Adamed 25 mg) and diazepam (Relanium 5 mg) for symptomatic treatment of anxiety and psychomotor agitation. Duloxetine (Dulsevia 60 mg) is administered for mood disorders and neuropathic pain. Due to coexisting epilepsy, the patient takes levetiracetam (Levetiracetam Aurovitas 500 mg) twice daily. Cardiovascular treatment includes acetylsalicylic acid (Acard 75 mg), prolonged-release metoprolol (Beta 100 ZK 95 mg), and torasemide (Toramide). The patient also supplements potassium and magnesium (Aspargin). Due to chronic pain, treatment includes a combined tramadol/paracetamol preparation (Dorota 75 mg + 650 mg), metamizole (Pyralgina 500 mg), and, periodically, diclofenac combined with omeprazole (Dicloduo Combi). As-needed medications include ibuprofen (Ibufrone Forte), dexketoprofen combined with tramadol (Skudexa), and drotaverine (No-Spa 80 mg). For gastrointestinal symptoms, the patient uses omeprazole (Helicid Forte 40 mg), lactulose (Lactulosum), and a hepatoprotective phospholipid preparation (Essentiale Max 600 mg). The patient also takes the herbal preparation Fitolizyna cyclically once a year for a three-month period. Additional supplementation includes vitamin D3 2000 IU, folic acid (Folicum Richter 5 mg), Sanprobi Stress 20, and Presto 150 mg. During clinical

observation, recurrent inflammatory lesions began to appear in the groin area. Due to the persistence and progression of symptoms, the patient was referred for dermatological consultation. During exacerbations, the lesions presented as chronic open wounds with purulent discharge, multiple ulcerations, and erosions with signs of skin maceration. Dermatological diagnostics included microbiological testing, swabs, and skin scrapings from the lesions. The obtained results showed no bacterial or fungal pathogens. Due to the location of the lesions, the patient was additionally referred to an infectious diseases clinic for evaluation aimed at excluding sexually transmitted diseases. The performed venereological diagnostics revealed no abnormalities, and all test results were negative. In the absence of a confirmed infectious etiology and in the presence of extensive pharmacotherapy, the possibility of a drug-induced origin of the observed skin lesions was considered. The simultaneous use of numerous internal medicine medications in combination with psychiatric pharmacotherapy may lead to increased adverse effects, enhanced treatment toxicity, and the occurrence of dermatological manifestations that might not develop if the medications were used separately. The phenomenon of polypharmacy significantly increases the risk of drug interactions and accumulation of adverse effects, requiring particular therapeutic caution. Patients receiving extensive multidrug treatment regimens should remain under constant medical supervision and undergo regular health monitoring. Gradual and carefully supervised modification of therapy is also essential. Any changes in dosage or the introduction of new medications should always be discussed with the attending physician. Properly adjusted pharmacotherapy, stable dosing at fixed times, and appropriate skin hygiene, including avoidance of friction, excessive heat, and moisture, may contribute to reducing symptom severity and improving the patient's quality of life. Although adverse effects associated with polypharmacotherapy may be chronic, appropriate therapeutic management may allow for clinical stabilization and reduction in the frequency of disease exacerbations [Figure 1]

Methodology

This study is a case report. The patient was identified for inclusion on the basis of the complex clinical presentation and atypical course of the skin lesions observed during routine primary care follow-up. The medical interview included the course of the primary disease, coexisting disorders, applied pharmacotherapy, and the development and characteristics of the skin lesions. The patient specified the onset of psychiatric treatment, as well as the time of appearance of the dermatological lesions, the circumstances of their occurrence, and the progression of the skin changes during different stages of treatment. The data analysis was qualitative in nature and consisted of comparing the clinical presentation with the results of diagnostic examinations, as well as assessing potential relationships between the applied pharmacotherapy and the occurrence of skin lesions, including the process of differential diagnosis. The study also included a review of the available medical literature regarding the impact of psychiatric and internal medicine pharmacotherapy on the development of skin lesions.

Results

Analysis of the patient's medical history, numerous comorbidities, and chronic extensive polypharmacotherapy suggests that the observed skin lesions may be associated with adverse drug reactions and mutual pharmacological interactions. The simultaneous use of multiple psychiatric and internal medicine medications may lead to disturbances in the body's immunological and metabolic homeostasis, thereby promoting the occurrence of cutaneous manifestations and exacerbation of pre-existing dermatological conditions. In the analyzed case, the phenomenon of polypharmacy appears to be particularly significant, as it increases the risk of cumulative adverse effects, enhanced treatment toxicity, and the occurrence of pharmacokinetic and pharmacodynamic interactions. It should be emphasized that the concomitant use of antipsychotic, antidepressant, analgesic, and internal medicine drugs may have exerted a synergistic effect on the skin, contributing to impaired epidermal barrier function and chronic maintenance of the inflammatory process. In the context of the presented case, it appears reasonable to consider whether a similar dermatological manifestation would have occurred if the individual medications had been administered separately, without the coexistence of extensive multidrug therapy. In clinical practice, it is extremely difficult to identify a single causative factor, particularly in patients chronically treated with numerous medications possessing potential immunomodulatory and metabolic effects, as well as influencing skin function and sweat gland activity. At the same time, it should be noted that despite the potential adverse effects, continuation of psychiatric treatment remains essential for maintaining the patient's mental stability and appropriate social and daily functioning. Properly adjusted pharmacotherapy, regular medication intake at fixed doses, and continuous specialist supervision are of major therapeutic importance. Equally important is patient education regarding appropriate

skin care, maintenance of hygiene in areas exposed to moisture and friction, regular underwear changes, and avoidance of self-administration of additional medications without medical consultation. Such management may contribute to reducing the severity of dermatological symptoms, limiting the frequency of exacerbations, and improving the patient's quality of life. It should also be emphasized that patients undergoing chronic polypharmacotherapy require systematic dermatological follow-up and monitoring for potential treatment-related adverse effects. Early recognition of skin lesions enables faster implementation of appropriate therapeutic management, reduction of complication risk, and optimization of the applied treatment. Interdisciplinary cooperation between physicians of various specialties, including psychiatrists, dermatologists, primary care physicians, and other specialists involved in the patient's care, plays a particularly important role. A comprehensive diagnostic and therapeutic approach allows for more effective patient management, reduction of drug interaction risk, and improvement of the safety and effectiveness of long-term therapy.

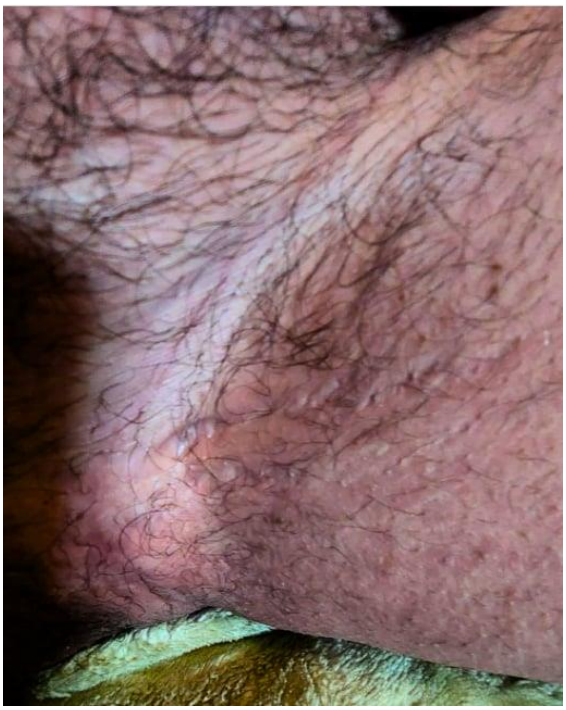

Figure 1. The image presents the patient's groin region during a mild exacerbation of the skin lesion. Within the inguinal fold, erythematous and erosive lesions are visible, accompanied by features of epidermal maceration and superficial skin fissures. Small areas of scaling and moist, irritated skin are also present. The lesion is consistent with a chronic inflammatory process (dermatitis). In the central part of the lesion, a longitudinal erythematous-whitish area with signs of epidermal maceration is visible, extending along the skin fold. The affected skin demonstrates uneven thickening, superficial erosions, and small fissure-like epidermal defects. In some areas, moist and shiny surfaces suggestive of serous exudation can be observed. Diffuse erythema and features of chronic irritation are present in the surrounding tissue. The lesion is characteristic of intertriginous dermatitis/intertrigo with features of secondary maceration and impairment of the epidermal barrier. The clinical presentation may correspond to inflammatory-erosive lesions of drug-induced, irritant, or mixed etiology, developing on the basis of chronic polypharmacotherapy together with persistent moisture and friction within the inguinal fold.

Discussion

The presented case describes a patient with schizophrenia undergoing long-term polypharmacotherapy who developed chronic inflammatory lesions in the groin area. Although dermatological adverse effects associated with antipsychotic medications are relatively rare, they may present with a broad clinical spectrum ranging from mild erythematous lesions to chronic inflammatory dermatoses. In the observed lesions, the significant impact of antipsychotic medications on the immune system is evident, particularly through modulation of the inflammatory response by influencing pro-inflammatory and anti-inflammatory cytokines. This may lead to disruption of skin homeostasis and predispose the patient to inflammatory reactions [5]. Metabolic factors associated with the use of atypical antipsychotic drugs, such as olanzapine, may indirectly affect skin condition through weight gain, insulin resistance, and microcirculatory disturbances, especially during combination therapy, which significantly increases the risk of adverse effects and drug interactions [6]. Additionally, duloxetine has repeatedly been identified as a factor inducing excessive drug-related sweating. This mechanism is probably associated with its influence on thermoregulatory centers and the cholinergic system. The clinical significance of hyperhidrosis extends beyond patient discomfort alone. Excessive moisture in skin folds, such as the groin area, leads to epidermal maceration, disruption of the skin barrier, and increased susceptibility to chronic inflammatory conditions, particularly in regions rich in eccrine glands and exposed to friction [7]. An additional risk factor in the discussed case is the presence of numerous comorbidities and the use of analgesic medications, which may also influence sweat regulation and the inflammatory response of the skin. In the analyzed case, it is particularly important that microbiological, mycological, and sexually transmitted disease diagnostics did not reveal the presence of pathogens. Such findings strengthen the hypothesis of a non-infectious, most likely drug-induced etiology of the lesions [8]. In summary, the presented case highlights the necessity of considering the adverse effects of psychotropic medications and the impact of long-term polypharmacotherapy in the diagnostic evaluation of chronic inflammatory skin lesions of unclear etiology. Although dermatological adverse reactions associated with antipsychotic medications are considered relatively uncommon, available literature indicates that psychotropic drugs may induce a broad spectrum of cutaneous manifestations, ranging from mild erythematous eruptions and hypersensitivity reactions to chronic inflammatory dermatoses and severe exfoliative skin disorders [10]. Recent studies emphasize that antipsychotic medications may affect the skin not only through direct immunological mechanisms, but also indirectly through metabolic disturbances, impaired epidermal barrier function, excessive sweating, and alterations in inflammatory cytokine profiles [10,11]. Particular attention should be paid to the phenomenon of antipsychotic polypharmacy, which remains highly prevalent in patients with chronic schizophrenia despite increasing evidence regarding its association with adverse effects and drug interactions. Large analyses published in recent years demonstrate that a significant proportion of patients treated with antipsychotic medications receive multidrug psychiatric therapy, especially in severe schizophrenia spectrum disorders [9]. The simultaneous administration of multiple psychotropic and internal medicine medications may significantly increase cumulative toxicity, contribute to pharmacokinetic and pharmacodynamic interactions, and predispose patients to chronic inflammatory and dermatological complications [9] In the presented case, the coexistence of extensive psychiatric and somatic pharmacotherapy may have contributed to persistent skin barrier dysfunction and chronic inflammation within the inguinal folds. Atypical antipsychotic medications, particularly olanzapine, have been associated with metabolic abnormalities, weight gain, insulin resistance, and immune dysregulation, all of which may indirectly worsen skin condition and impair tissue regeneration [11]. Excessive sweating and chronic moisture within intertriginous regions additionally promote epidermal maceration, secondary erosions, and persistence of inflammatory lesions [10]. Importantly, in this patient, extensive microbiological, mycological, and venereological diagnostics excluded infectious etiologies, strengthening the hypothesis of a predominantly drug-induced inflammatory process. However, establishing a direct causal relationship remains clinically challenging in patients receiving multiple long-term medications simultaneously. This case therefore underlines the importance of interdisciplinary cooperation between psychiatrists, dermatologists, and primary care physicians in the management of chronic skin lesions in patients undergoing complex multidrug therapy. Early recognition of a possible drug-induced background may enable implementation of appropriate preventive and therapeutic strategies, reduction of symptom severity, improvement of quality of life, and optimization of long-term pharmacological treatment. Further research is required to better understand the complex relationship between psychotropic medications, immune modulation, skin barrier dysfunction, and chronic inflammatory dermatoses [10,11].

Conclusions

In patients with schizophrenia for whom continuation of antipsychotic treatment is essential to maintain mental stability, inflammatory lesions in the groin area should be evaluated using a multifactorial approach. Atypical antipsychotic medications, such as olanzapine, exhibit metabolic and immunomodulatory effects that may contribute to the persistence of local inflammatory responses and increase susceptibility to secondary infections in the presence of an impaired skin barrier. At the same time, medications such as duloxetine may induce hyperhidrosis, which, in combination with heat, moisture, and friction in the groin area, leads to epidermal maceration and promotes the development of intertrigo. Polypharmacotherapy increases the risk of skin lesions through the accumulation of adverse effects and the potential development of drug-induced dermatoses. In clinical practice, due to the high risk of psychosis relapse, discontinuation of medications potentially responsible for the skin symptoms is often not feasible. With consistent adherence to medical recommendations and appropriate skin care, it is possible to maintain the skin lesions at a stable and well-controlled level. Chronic skin diseases may periodically exacerbate; therefore, the primary goal of treatment is effective symptom control and maintenance of proper hygiene, despite the inability to achieve complete resolution. Therapeutic management should therefore focus on topical treatment and reduction of factors perpetuating inflammation, such as chronic moisture and skin friction. Maintaining proper hygiene, systematic skin drying, and appropriate dermatological care may contribute to stabilization of the clinical condition, reduction in the severity of inflammatory lesions, and alleviation of pruritus.

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