Case Report

Mania as a Rare Adverse Event Secondary to Steroid Eye Drops

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Received 10 April 2022; Accepted 1 June 2022; Published 16 June 2022

1. Introduction

Since glucocorticoids (GCs) were introduced in the 1950s, they have been proven effective in treating various systemic diseases including acute and chronic allergic and inflammatory conditions [1]. However, GCs were also known to cause multiple behavioral and psychiatric adverse events such as mania, psychosis, and depression. These behavioral or psychiatric adverse events usually appear within a few days aftercommencing GCs and are possibly to reverse with drug withdrawal. We present a rare case of a 75-year-old woman who developed mania during treatment with GC eye drops following cataract surgery. Management consisted of discontinuing prednisolone and administering olanzapine, which resulted in full recovery in a week. Olanzapine was then discontinued, and a diagnosis of steroid-induced mania was concluded for this case.

2. Case Presentation

A 75-year-old woman who had cataract started using prednisolone 1% eye drops four times a day postoperatively. She presented to the psychiatry outpatient clinic nine days after surgery, with a seven-day history of elated mood, pressured speech, flight of ideas, insomnia, irritability, and restlessness. She had a decreased need for sleep (3–4 hours of sleep per night) compared to a baseline sleep of 7 hours per night. Her motor and verbal activity increased markedly. She displayed restlessness, talkativeness, and irritability during the clinical interview. In her psychiatric assessment, she was cooperative and oriented to time, place, and the people around her. She did not show grandiosity or report delusions, but she admitted experiencing visual hallucinations. She had no history of any substance use and no known drug allergy. According to her family, her psychiatric
| Authors, year         | Age in years (sex) | Type of glucocorticoid eye drops (dose) | Past psychiatric history                      | Neuropsychiatric manifestations | Management                                                                 | Outcome                        |
|----------------------|--------------------|----------------------------------------|-----------------------------------------------|---------------------------------|-----------------------------------------------------------------------------|---------------------------------|
| Mok and Malladi, 2013 [6] | 81 (female)       | Prednisolone (1% four times/day)        | Chronic schizophrenia and single episode of hypomania | Mania                           | (i) Prednisolone discontinued                                               | Full recovery                   |
|                      |                    |                                        |                                               |                                 | (ii) Uptitration of baseline psychotropic medications                      |                                 |
| Kumagai and Ichimiya, 2014 [7] | 76 (male)        | Fluorometholone (N/A)                   | N/A                                           | Mania                           | (i) Fluorometholone discontinued                                            | Full recovery                   |
|                      |                    |                                        |                                               |                                 | (ii) Sodium valproate (200 mg/day) administered                             |                                 |
| Farooq and Dallol, 2014 [8] | 90 (female)      | Fluorometholone (0.1% three times/day)  | None                                          | Acute confusion                 | (i) Fluorometholone discontinued                                            | Full recovery                   |
|                      |                    |                                        |                                               |                                 | (ii) Administered                                                            |                                 |
| Cakici and Hergüner, 2015 [9] | 15 (male)        | Fluorometholone (0.1% three times/day)  | Attention-deficit/hyperactivity disorder       | Hypomania                       | (i) Fluorometholone discontinued                                            | Full recovery                   |
|                      |                    |                                        |                                               |                                 | (ii) Quetiapine (100 mg/day) administered                                   |                                 |
| This case            | 75 (female)       | Prednisolone (1% four times/day)        | None                                          | Mania                           | (i) Prednisolone discontinued                                               | Full recovery                   |
|                      |                    |                                        |                                               |                                 | (ii) Olanzapine (5 mg/day) administered                                     |                                 |

N/A: not available.
manifestations started two days after the initiation of the prednisolone eye drops.

After a thorough review of her medications, the possible causal relationship between the prednisolone eye drops and manic episode was suspected. The Young Mania Rating Scale (YMRS) score was 29 out of 60 [4]. Complete physical examination and thorough laboratory investigations including full blood cell count, liver, renal, and thyroid function tests, and vitamin levels were noncontributory. After consultation with her ophthalmologist, the prednisolone was discontinued, and olanzapine orally disintegrating tablet (5 mg/day at bedtime) was given for her insomnia and agitation. The patient’s behavior improved rapidly over a week. The YMRS score decreased to 6 out of 60. She was followed for 3 months and remained stable and without any psychiatric manifestations. Olanzapine was discontinued after 2 months.

According to the clinical picture and history with a clear temporal association between the use of the steroid eye drops and the onset of manic symptoms, a diagnosis of steroid-induced mania was reached.

3. Discussion

Steroid-induced psychiatric symptoms are well-documented phenomena and are typically seen with high doses and systemic administration of corticosteroids [1]. However, less is known about the psychiatric adverse events of topically administered medications. They are inevitably absorbed from the eye into the systemic circulation and thus have the potential to cause systemic adverse effects like mania and acute confusion [5]. The reported case emphasizes that even a drug that is administered topically can cause adverse psychiatric effects. To our knowledge, only four cases were reported in the literature for neuropsychiatric manifestations shortly after starting GC eye drops (Table 1) [6–9].

Most psychiatric symptoms begin within a few days of GC treatment [3]. In our case, manic symptoms developed on the second day of steroid treatment. The literature on the treatment of steroid-induced mania is limited to only case reports. A suggested management may start with GS eye drop dose reduction or cessation. In some cases, psychotropic medications may be warranted due to the inability to discontinue steroid treatment or the severity of psychiatric symptoms [3]. In this case, we discontinued the steroid therapy and added olanzapine for the patient’s insomnia and psychomotor agitation. One only of the five reported cases, including ours, was successful with only stopping the offending agent without adding a psychotropic medication.

Clinicians should consider the adverse psychiatric effects of topical corticosteroids, especially in the elderly population, and inform patients about them. Awareness about this rare occurrence should be raised to allow for early monitoring and for more cases to be reported to help guide prevention efforts and clinical decision-making about the proper management of steroid-induced mania.

Consent

Written consent was obtained to publish this case.

Conflicts of Interest

All authors declare no conflict of interest.

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