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Letter to the Editor: Brief Case Report

Cushing Disease Psychosis Identified as Postoperative Psychosis

Introduction

Prolonged excess circulating cortisol leads to Cushing syndrome, classically described by hypertension, central adiposity, proximal myopathy, striae, face rounding, and fragile skin, among others. The majority—65%–70%—of endogenous Cushing syndrome cases are caused by Cushing disease, or a corticotroph tumor of the pituitary gland, and mainly affects women aged 25–45 years. The psychiatric manifestations of Cushing syndrome include emotional lability, depression, irritability, anxiety, affecting over two thirds of patients.[1] Psychosis, in contrast, affects less than 10% of patients in the pretreatment period.[2] Here, we describe a case of Cushing disease psychosis identified in the postoperative period, after definitive treatment.

Case Presentation

The patient is a 47-year-old female with a history of major depressive disorder and posttraumatic stress disorder who developed fatigue, concentration problems, word-finding difficulty, subjective memory decline, and worsening anxiety following a coronavirus disease infection 2.5 years prior to presentation. Over the next 2 years, she developed palpitations, dizziness, 30-lb unintentional weight gain, easy bruising, face rounding, buffalo hump, worsening hypertension, and worsening headaches. She was diagnosed with Cushing disease after laboratory work demonstrated adrenocorticotropic hormone-dependent hypercortisolism (overnight 1mg dexamethasone suppression test with morning cortisol of 19.2 ug/dL and 13.1 ug/dL on repeat (normal less than 1.8 ug/dL); bedtime salivary cortisol of 0.3 mcg/dL and 0.32 mcg/dL on repeat (normal less than 0.09 mcg/dL); 24-hour urinary free cortisol excretion of 48.7 mcg/24h (normal 4–50 mcg/24h); adrenocorticotropic hormone of 65.6 pg/mL and 103.0 pg/mL on repeat (normal less than 46 pg/mL) and pituitary magnetic resonance imaging revealed a pituitary mass (8 mm by 6 mm pituitary microadenoma).

She was admitted to the neurosurgery inpatient service and her mass was completely resected with no intraoperative complications. Anesthesia consisted of preoperative midazolam; induction with fentanyl, propofol, and rocuronium; maintenance with remifentanil, propofol, and sevoflurane; and analgesia with hydromorphone, dexmedetomidine, and acetaminophen. That night, the psychiatry consult-liaison service was called, as she appeared suddenly distrustful of her care team, stating she was admitted to the wrong unit, and requesting discharge against medical advice. On evaluation, she was guarded and oddly related with intact orientation and attention. She stated she could not trust the staff and that her daughters were unsafe. A collateral from her separated partner revealed several months of lability, outbursts, and paranoia. She thought she was being recorded at home and that various belongings were stolen. Her daughters awoke one night to find her staring at them, who stated she was keeping a watchful eye on them. She made multiple suicidal statements in the weeks prior to admission.

Given safety concerns, she was involuntarily transferred to the inpatient psychiatry service after surgical clearance. Her home medications included bupropion 450 mg daily, amphetamine/dextroamphetamine 10 mg twice daily, and fluoxetine 70 mg daily. Bupropion and amphetamine/dextroamphetamine were discontinued, and she refused antipsychotics. She became less guarded over the ensuing days and, approximately 1 week after surgery, she gained insight into her paranoia. Her family felt she returned to her baseline and were comfortable with her discharge. By discharge, her cortisol levels normalized, and pathology demonstrated a corticotroph adenoma.

Discussion

Surgery offers a 70%–90% cure rate for Cushing disease[3] and, based on a nonsystematic review of the case report literature, psychosis—if present—frequently resolves as well. In this case, since the patient never took antipsychotics, most of her recovery can be attributed to surgery. However, in patients with successfully

treated Cushing disease, quality of life remains negatively impacted with respect to depressive and anxiety symptoms, physical health, and social adjustment[4] and cognitive function can improve but typically does not return to baseline.[5]

Although one cannot be certain why the patient's psychosis became prominent after surgery, it is possible that it acutely worsened due to a combination of surgical manipulation (perhaps due to a rapid release of adrenocorticotropic hormone during surgical debulking that resulted in a cortisol spike) and disinhibition from residual anesthesia. This patient in particular was likely vulnerable to psychosis due to prior trauma in adolescence and the use of bupropion and amphetamine/dextroamphetamine in the months leading to definitive treatment. Delirium, a common cause of postoperative psychosis, was unlikely given her preserved attention on serial exams, but it is possible that features of delirium could have been missed due to fluctuations over time.

One implication of this case is that Cushing disease psychosis may be underreported in the literature, as this patient's psychosis was not evident to her multidisciplinary team in the months leading to surgery. Based on collateral, she had clear signs of psychosis during this time period, which was likely missed due to a remarkable degree of guardedness on the part of the patient. Primary teams should maintain a higher index of suspicion for psychosis and consider incorporating screening into pre-surgical evaluation, which may require collaboration with family. This case highlights the value and need for integrated care, since an involved psychiatrist (e.g., as a consultant, part of a collaborative care model, and so on) may well have recognized psychosis prior to surgical treatment.

Conflicts of Interest: The authors declare that they have no conflict of interest.

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