

An Emergence from Catatonia following Botox Injections in the setting of Traumatic Brain Injury

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Case Diagnosis

- We present a case of a 25 year old male with a traumatic brain injury and epidural empyemas who emerged from prolonged catatonia following lower extremity botulinum toxin injections

Case Description

Patient AG is a 25 year old male with history of schizophrenia who presented following exiting a moving vehicle and sustaining frontal bone fracture causing mass effect as well as small sub-arachnoid and sub-dural hemorrhages. He underwent bi-frontal craniectomy for decompression. After initially achieving O-log scores of 28/30 approximately 3 weeks post initial injury, his functional status began to decline. He was subsequently diagnosed with hospital-acquired bacterial meningitis and frontal empyemas. At this time he was nonverbal with no voluntary movement in the lower extremities as well as progressive weakness of his upper extremities. With intermittent fevers, HTN, tachycardia and rigidity the differential included sympathetic storming and NMS in addition to catatonia. He remained nonverbal and rigid however even following improvement in vital signs and diaphoresis.

Additionally previously prn valium was scheduled and he was started on baclofen without notable improvement in his clinical picture. Prior scheduled Risperdal for management of schizophrenia was discontinued due to concern for possible NMS once again without notable improvement in his clinical picture. Due to worsening equinovarus deformity of the bilateral ankles, botulinum toxin injections were performed. Within 2 days of botox injections, he suddenly became alert, oriented and conversant. He subsequently progressed well with therapy and eventually discharged to acute inpatient rehabilitation. He subsequently progressed well during inpatient rehab and was discharged at a modified independent level for wheelchair mobility and ADLs with limited house-hold ambulation with a rolling walker.

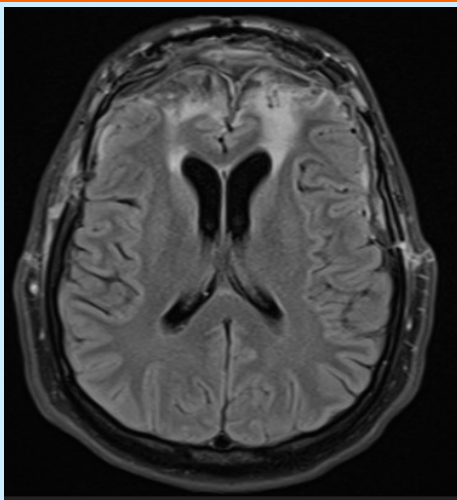


Figure 1 MRI demonstrating frontal empyemas

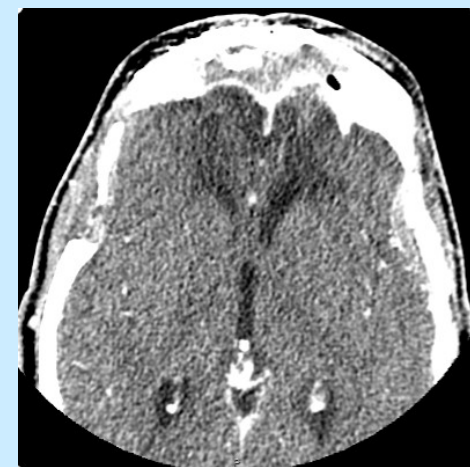


Figure 2 CT scan demonstrating post-surgical changes of bifrontal craniectomy

Discussion

Catatonia is characterized by a distinct constellation of psychomotor disturbances, with the akinetic subtype being described. Associated signs reflect a paucity of movement, with immobility and mutism being most common; staring, rigidity and withdrawal have also been described. Consequently these patients are at risk of developing numerous medical complications including: malnutrition, DVT and subsequent PE, pressure ulcers and NMS. Classically, upon diagnosis of catatonia, patients can be administered sublingual or IM lorazepam. ECT has also been used for management of catatonia.

Conclusions

It is important for rehabilitation professionals to recognize and treat catatonia and neuroleptic malignant syndrome. Early recognition and management is imperative to avoid prolonged hospital stay and its numerous associated medical complications.

References

- Rasmussen, S. A., Mazurek, M. F., & Rosebush, P. I. (2016). Catatonia: Our current understanding of its diagnosis, treatment and pathophysiology. *World journal of psychiatry*, 6(4), 391–398. <https://doi.org/10.5498/wjp.v6.i4.391>
- Pelzer AC, van der Heijden FM, den Boer E. Systematic review of catatonia treatment. *Neuropsychiatr Dis Treat*. 2018 Jan 17;14:317-326. doi: 10.2147/NDT.S147897. PMID: 29398916; PMCID: PMC5775747.
- Berman B. D. (2011). Neuroleptic malignant syndrome: a review for neurohospitalists. *The Neurohospitalist*, 1(1), 41–47. <https://doi.org/10.1177/1941875210386491>