

# Traumatic Brain Injury and Mania

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## ABSTRACT

52-year-old female patient who presented with mania following a traumatic chronic subdural haematoma in the right fronto-parietal region. She required 11 weeks on an inpatient ward and was treated successfully with anti-psychotics.

## INTRODUCTION

Mood disorders is defined by the World Health Organisation (WHO) as a “change in affect or mood to depression...or to elation”<sup>[1]</sup>. One mood disturbance is mania, of which there are differing causes.<sup>[2]</sup>

## CASE

### Patient Demographic

A 52-year-old female patient. Previously well and independent. Lives with her partner and is currently unemployed.

### Past Psychiatric History (PPH)

- 1993 Post-natal depression, puerperal psychosis (required electro-convulsive therapy (ECT))

### Past Medical History (PMH)

- 1996 Epilepsy (tonic-clonic) – controlled on Lamotrigine & Levetiracetam. Last seizure 2017

### Timeline leading to admission

November 2019

- Mechanical fall with head injury
- No Loss of consciousness, no seizure activity. Did not seek medical attention.

December 2019

- Initial presentation to GP with right-sided ear pain & headache. Diagnosed with impacted ear wax and treated with ear drops
- Presented one week later to Accident and Emergency (A&E) with headache, vomiting and ear pain
- Examination - Glasgow Coma Scale (GCS) drop 15 → 13 → 4 → 13
- Investigations - Computerised Tomography (CT) scan (see Figure 1)
- Treatment - Emergency Burr Hole evacuation. No immediate post-operative complications

January 2019

- Presented eight days post-surgery to A&E with new onset agitation & confusion
- Investigations - No evidence of re-bleed on CT scan. Blood tests unremarkable
- Referred to Psychiatry due to behavioural disturbances

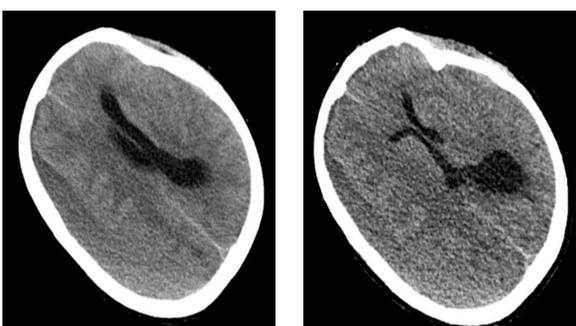


Figure 1 – CT December 2019<sup>3</sup>:

“Large subacute subdural haematoma in the right fronto-parietal region with mass effect on the right cerebral hemisphere and midline shift of 1.2cm to the left”

## CORE FEATURES ON PRESENTATION

- Psychomotor agitation, dishibition and irritability
- Pressure of speech and flight of ideas
- Elated mood and grandiose delusions
- Lacked insight and capacity

## MANAGEMENT

Inpatient open psychiatric ward 11 weeks

- Initial trial with oral Olanzapine 5mg once daily (OD) → non-compliant
- Had six doses of intra-muscular (IM) Olanzapine 10mg OD → no improvement
- Treated with IM Zuclopenthixol Acetate (300mg split over four doses within a six day period) → Clinically improved, less agitated, coherent speech and resolution of psychotic symptoms
- Maintained olanzapine 20mg OD

## COMPLICATIONS

Developed extrapyramidal side effects secondary to Zuclopenthixol Acetate. This caused difficulty in the patient swallowing both solids and liquids which led to an aspiration pneumonia. No organic pathology was found; pausing treatment resolved this.

## DISCUSSION

The association between a traumatic brain injury (TBI) and the development of affective disorders is well documented, with differing theoretical mechanisms linking them together<sup>4</sup>.

This case study proposes the fronto-parietal areas impacted by the TBI precipitated the development of mania. This is supported as the frontal lobe is responsible for “emotional and behavioural regulation”<sup>[5]</sup>. Therefore TBI involving this specific area is potentially more likely to result in behavioural disturbances in comparison to injury elsewhere.

The patient’s PPH suggests this patient has a predisposition to developing affective disorders.

## CONCLUSION

TBI can be a precipitant for the development of mania in patients who are predisposed to affective disorders. Due to a previous depressive episode, a diagnosis of Bipolar Affective disorder was made.

## REFERENCES

1. ICD-10 Version:2016 [Internet]. Icd.who.int. 2020. Available from: <https://icd.who.int/browse10/2016/en#/F30-F39>. [Accessed 30<sup>th</sup> September 2020]
2. Semple D, Smyth R. *Oxford Handbook of Psychiatry*. Third edition. Oxford. Oxford University Press.
3. PACS. Available from: <https://pacs.meht.nhs.uk>. [Accessed 26<sup>th</sup> August 2020]
4. Perry D, Sturm V, Peterson M, Pieper C, Bullock T, Boeve B et al. Association of traumatic brain injury with subsequent neurological and psychiatric disease: a meta-analysis. *Journal of Neurosurgery*. 2016;124(2):511-526. DOI [10.3171/2015.2.JNS14503](https://doi.org/10.3171/2015.2.JNS14503)
5. Séguin J. The frontal lobe and aggression. *European Journal of Developmental Psychology*. 2009;6(1):100-119. DOI [10.1080/17405620701669871](https://doi.org/10.1080/17405620701669871)