Unusual association of diseases/symptoms

Psychosis in temporal lobe epilepsy: atypical presentation

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Correspondence to Professor Amin Gadit, amin.muhammad@med.mun.ca**Summary**

A 55-year-old lady was admitted following a concern raised by family members who had noticed a change in behaviour in terms of declining mood, paranoia with expression of belief that she was being bugged, also reported smelling perfume and after shave lotion. She had a prior diagnosis of bipolar mood disorder and was on lithium but remained non-compliant with her prescribed medication in the 10 weeks before admission. Upon admission, necessary investigations were performed including CT scan and EEG. Her CT was normal but EEG was grossly abnormal. Neurology consultation was sought and a sleep deprived EEG and MRI was ordered. Meanwhile, carbamazepine was commenced in view of the change in diagnosis to that of temporal lobe epilepsy. The patient responded very well to this regime and improved in all spheres. She was finally discharged with follow-up appointments with both neurology and psychiatry clinics.

BACKGROUND

Olfactory hallucinations are associated with an organic aetiology in most of the cases. The important feature of temporal lobe epilepsy is olfactory hallucination. Psychosis and mood disturbance are other likely features of this clinical problem. The presentation can mimic psychiatric disorder and may pose a challenge for mental health team. This presentation clearly overlaps with both psychiatry and neurology and calls for joint management. This case has its inherent importance both in terms of clinical management and provides leaning for the clinical team.

CASE PRESENTATION

A 55-year-old female with a prior diagnosis of bipolar disorder presented to the emergency department via ambulance after concerns raised by family members who had made numerous unsuccessful attempts to contact her after noticing a change in her behaviour over a period of time. Family noticed increasingly odd behaviour over 4 years, with a drastic change in the past 2 months. While visiting family in her home town 2 years before admission, she was assessed by a family practitioner who gave a diagnosis of bipolar disorder and started on lithium. At the time of presentation she had not been taking any medications for at least 2 months.

Odd behaviours noted by the family included statements that the car and home were being 'bugged', and that someone was listening to her conversations. She also claimed to have special smelling abilities. She described smelling perfume and aftershave that she claimed were seeping through the radiators of her apartment. She had plastic wrapped the radiators to prevent the smell travelling between apartments. She also asked neighbours to open their windows to prevent the smell of aftershave entering her home. She had also recently developed somatic delusions of a sinus infection travelling through her body causing lower limb and muscle pain, and creating a smell from her urine and faeces that was causing drowsiness.

She had decreased need for sleep and was isolating herself socially. She reported no symptoms of anxiety or

mania, and did not satisfy criteria for depression. She had no suicidal or homicidal ideation, and no visual, auditory or gustatory hallucinations.

Medical history was self-reported to include osteoarthritis, psoriasis, hyperlipidaemia and hypothyroidism. No previous records were available to corroborate this information. She has a history of migraines with visual aura. Her only known surgery was a cholecystectomy. She has no allergies.

As previously mentioned, she was non-compliant with medications for at least 2 months prior to admission. Medications in the past included lithium, olanzapine, synthroid, crestor and cipralex.

Family history consisted of depression in her mother. She was raised by a grandmother and had no developmental concerns as a child. There was no history of abuse, no substance abuse and no legal history. She was living alone at the time, and was evicted from her apartment due to odd behaviours. Her closest family live in her home town. She worked for many years in the federal government, but did frequently switch jobs.

Mental status on admission showed a fairly well-dressed and groomed woman. She was alert, calm and cooperative. Eye contact was fair and well maintained. There were no involuntary movements noted. Speech was with normal rate and rhythm. Thoughts were guarded with somatic delusions. Insight was poor and judgement limited.

INVESTIGATIONS

Investigations for the patient include the following:

- ▶ On admission, routine complete blood count, lipid blood count, thyroid stimulating hormone, vitamin B12, urinalysis were within normal limits.
- ▶ CT head normal.
- ▶ Routine EEG – Conclusion: this prolonged EEG is abnormal. Potential epileptogenic, low amplitude abnormalities in left temporal, right temporal and right fronto-temporal areas.
- ▶ EEG #2 – Sleep deprived EEG – Conclusion: this prolonged EEG record shows sleep activation of potentially

epileptogenic abnormalities in the left and right temporal areas.

- Lithium levels: weekly:
 - Week 1 <0.1
 - Week 2 0.5
 - Week 3 1.1
 - Week 4 0.8
 - Week 5 1.0
 - Week 6 0.6.

DIFFERENTIAL DIAGNOSIS

On admission, the patient had a diagnosis of bipolar disorder which was revisited by treating psychiatrist; based on the patient's symptoms, a provisional diagnosis of psychosis not otherwise specified (NOS) was given. Conducting appropriate diagnostic investigations as well as consulting with neurologist allowed us to make an accurate diagnosis.

On close follow-up of the patient throughout hospital admission, collateral history obtained and results from investigations, the provisional diagnosis of psychosis NOS was revisited and temporal lobe epilepsy had become the most probable cause of this patient's presentation.

TREATMENT

On admission, the patient's medications included lithium 300 mg daily, cressor 10 mg daily, synthroid 25 mcg. As previously mentioned this patient was diagnosed with bipolar disorder few years ago and at that time lithium was initiated by her family physician. However, the patient had noted that she had not been compliant with the lithium medication for approximately 2 months prior to her presentation to hospital.

Routine lithium levels were ordered as a part of the investigations for this patient. On admission this patient's lithium level was <0.1 with a normal range of 0.6–1.2. This was in keeping with the patient's history of non-compliance of her lithium. As a part of the treatment plan, patient's lithium dosage was titrated to achieve a therapeutic level. Initial increase was to 600 mg and 900 mg. Therapeutic lithium levels were achieved within 7 days of admission.

As the patient was continuously assessed by the team, and further information was obtained from the patient's family physician as well as a collateral history for the patient's family the diagnosis of bipolar disorder was questioned. The patient had been experiencing paranoid and somatic delusions as well as ongoing olfactory hallucinations. At this time, a provisional diagnosis of psychosis NOS was made, olanzapine 10 mg daily and zydis 5mg twice daily prn was added to the patient's medications.

An EEG was ordered at this time which showed abnormalities in the temporal areas. This was followed by a sleep deprived EEG which was consistent with a diagnosis of temporal lobe epilepsy which was now the most probable diagnosis for this patient.

After consulting with neurologist, it was recommended that carbamazepine 200 mg daily be initiated for this patient with the plan to gradually titrate this dose based on the patient's response. In addition, the dosage of lithium was decreased to 600 mg, and olanzapine was decreased to 5 mg daily with the intent of discontinuing both these medications. The carbamazepine dose was titrated to 400

mg 2 days after initiation. At this time the lithium medication was decreased again to 300 mg. The patient showed remarkable improvement in terms of her symptoms. She became more communicative, availed off unit privileges and took part in various activities in the unit. The patient was finally discharged with a follow-up appointment with her treating psychiatrist as well as neurologist.

OUTCOME AND FOLLOW-UP

The patient showed remarkable improvement with change in medication regimen at the time of discharge. A follow-up arrangement with psychiatrist and neurologist was arranged within 2 weeks of discharge.

DISCUSSION

The current presentation may pose initial diagnostic and management challenge. Temporal lobe epilepsy has been known to present itself with marked symptoms of psychosis especially with feature of olfactory hallucination. The typical smell in temporal lobe epilepsy is that of burning leather. The olfactory hallucination in our case is that of perfume and after shave lotion which is unusual. The striking feature in the current presentation is the remarkable improvement in clinical features upon appropriate treatment. Anxiety, psychosis and aggressive behaviours are noted in epilepsy.¹ It is also reported that incidence of schizophrenia like psychosis increases in temporal lobe epilepsy or temporo-limbic epilepsy.² Cases were reported with postictal psychosis as a recognised complication of temporal lobe epilepsy that was shown to be associated with hyperactivation of both temporal and frontal lobe structures as evidenced on single-photon emission CT scans.³ A study⁴ involving 500 patients diagnosed with epilepsy indicated varying characteristics of psychoses occurring in epilepsy. There has also an association with epilepsy and migraine that can complicate the presentation and may cause management problems.⁵ Our case also reported migraine and visual aura in the background of temporal lobe epilepsy. However, the neurologist did not think that there was an association of olfactory hallucination with migraine in our case. Interestingly, our patient reported improvement in migraine after being commenced on carbamazepine.

Learning points

- Olfactory hallucinations can have a psychiatric aetiology as a symptom of psychosis or organic neurologic causes including temporal lobe epilepsy and can be a part of an aura for migraine or during the migraine itself.
- Persistent phantosmia in the absence of visual, auditory or other hallucinations leads to the suspicion of temporal lobe epilepsy.
- Somatic delusions can present secondary to phantosmia or organic aetiology in patients without other history of psychosis.
- Just as in the index case, persistent olfactory hallucinations or organic neurological origin can lead to paranoia, which can contribute to social behaviour that mimics genuine psychiatric illness.

Competing interests None.

Patient consent Obtained.

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