

**CASE REPORT****A CASE OF POST-STROKE MANIA**

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**Abstract**

**It has been long known that affective disorders as a result of organic brain diseases are not uncommon. Neurological disorders seem to be significant as risk factors for newly diagnosed mania in the elderly. It has been theorized that lesions in the right cerebral hemisphere and limbic structures may produce symptoms suggestive of mania. Even though specific areas of involvement had not been determined, this case discussed below clearly reports a right sided lesion. One of the reasons why not much is known yet about this clinical entity is the rarity of this occurrence. In fact, in one large scale study, only 2 patients out of 700 were identified with mania.**

**Keywords: Right hemisphere lesions, mania, stroke**

**Introduction**

Bipolar disorder is not unusual in the general population and the lifetime prevalence rates in Malaysia and even Asia may not be too different than the rates seen elsewhere. Generally, the problems faced by clinicians everywhere are diagnostic in nature whereby patients are diagnosed with some other condition due to a number of reasons. Bipolar disorder is usually under-recognized and misdiagnosed. (1) Many of the patients currently diagnosed may receive incorrect bipolar disorders categorization.

One of the reasons for this, at least in Malaysia would be a lack of manpower where the number of psychiatrists is approximately 200 or so and the total population in Malaysia is “only” 27 million people. Hardly an issue some would say but

in terms of time spent with a patient, on average it’s definitely inadequate. However, if a medical condition is added to the equation, the task of identifying the mood disorder is made more difficult. Secondary mania as we know has not been widely described and the demographics remain as mysterious as the intricate configuration of the human mind. Functional bipolar disorder usually manifests in a chronic and recurring pattern but in secondary mania, episodes may be acute in nature. (2) How it differs is mainly through a careful history taking to determine the temporal correlation between the organicity and the mania.

However, neurological mania is more likely to be one off rather than running a chronic relapsing course as in classical mania. The case highlighted after this is an example of how a patient who had a stroke developed

mania and due to the scarcity of such a thing occurring, especially in an Asian setting, this may help us to understand this condition better.

### **Case Study**

Miss E. E. is a 72 years old single lady who was admitted to the neurology ward with an acute onset of weakness and numbness of the left side of the body. She was previously healthy until 6 months ago when she started to experience episodes of chest pain which was described as heaviness in the chest that came about after some exertion like doing house chores or climbing stairs. It usually lasted for about 5 minutes and it was associated with sweating and palpitations that subsided after rest. She ignored it until a month ago when she started having bilateral ankle oedema associated with shortness of breath even with slight exertion. She also had orthopnoea. A general practitioner provided her with symptomatic treatment.

However, a week prior to admission, she was at home resting when she felt nauseous. When she got up to vomit, she felt giddy suddenly and she fell. After that, she could not get up as she felt weak and numb over the left half of her body. Her sister found her and brought her to University Hospital for help following which she was admitted. On the third day of admission, she started having visual hallucinations of chimpanzees scampering about near the door and alligators writhing on the ceiling as well as children crossing the road. She also had auditory hallucinations where she heard her nephew calling her name as well as elementary hallucinations of bells ringing. Relatives who visited her noticed that her behaviour had changed where she had become talkative with increased goal directed ideas and plans such as opening a supermarket and buying some new houses

because she believed she was rich with lots of cash stashed away secretly. She had also wanted to make generous donations to the poor and needy. She had also become easily irritable and restless and pulling out her IV lines. She also had reduced need for sleep where she slept for only 1-2 hours and yet still felt full of zest and energy and wanted to be discharged so she could bring her plans into fruition. She was extremely cheerful as if she was on top of the world. However, at times, she had difficulty recognizing relatives who dropped by for a visit. There were no similar symptoms in the past. There were no depressive episodes nor were there any instances of forgetfulness or altered behaviour before.

She has 10 siblings. There was no history of mental illness or dementia in the family. She herself had no past history of any psychiatric illness.

On examination, she was found to be alert and conscious. There was no facial asymmetry or slurred speech. Her blood pressure was normal and her heart rate was 80 beats per minute but it was irregularly irregular. There were no audible murmurs. Her lungs were clear. Her abdominal examination was normal. Neurological examination revealed a full Glasgow Coma Scale score. Her cranial nerves were intact. Her power was reduced on the left side but the tone was increased. Tendon reflexes were brisk on the left with positive Babinski's on the same side. Sensations were intact bilaterally. Her fundi were normal bilaterally.

Mental state examination showed an elderly lady who was cooperative but overfriendly and she was neatly attired in hospital clothes. She maintained good eye contact but however, she was easily distractible. She spoke in fluent English which was increased

in amount but the rate and volume were normal. Her speech was also slightly pressured. The speech was coherent but irrelevant at times. There were flight of ideas and some perseveration as well. She described her mood as “very happy” and she appeared elated. She was grandiose believing that she was wealthy. She was not hallucinating at that time. Cognitively, her Mini Mental State Examination yielded a score of only 12.

### Investigations

A CT brain was done at presentation which was reported as multifocal recent cerebral infarctions but no evidence of intracranial bleeding. There were multiple ill defined hypodense lesions over the right parieto-occipital, anterior and posterior limbs of right internal capsule, left external capsule and basal ganglia. There was no midline shift or mass effect. A CT thorax did not show any evidence of thrombus within the thoracic aorta.

A repeat CT brain 3 days later showed new hypodensities within right posterior parietal region in keeping with hemorrhagic transformation. A trans-oesophageal echocardiogram showed a dilated left atrium but no evidence of thrombus but there was a thrombus or flap overlying the descending aorta.

A CT brain one week later was reported as right middle cerebral territory infarct with resolved hemorrhagic transformation. Troponin T test was negative and the thyroid function was normal. Her lipids were raised. ECG showed atrial fibrillations.

Diagnosis: Right Cerebro-vascular Accident with Left Hemiparesis with Post-stroke Mania.

She was treated with Warfarin 2mg daily, Frusemide 40mg daily, Digoxin 0.125mg daily, Simvastatin 20mg daily, Propranolol 20mg bid, Slow K 2 tablets daily. For her mania, she was started on Quetiapine 50mg in the morning and 100mg at night.

### Discussion

Bipolar illness is common in the general population, with a lifetime prevalence rate between 1-3 % (1). In medically ill patients, it is often mistaken for delirium. The course of organic mania is not clear and its prevalence and incidence are not known. The onset may be within hours or days of the organic insult. Patients with organic mania may have some cognitive dysfunction in contrast to patients with primary mania. The likelihood that mania is secondary is greater when there is no prior personal or family history of bipolar disorder, when cognitive dysfunction or focal neurological signs are present, or when affective symptoms fail to respond to treatment (3). Secondary mania has been attributed to various conditions, including drug use, CNS trauma, neoplasms, vascular and degenerative diseases, epilepsy, infections and metabolic conditions (4, 5, 6).

It has been long known that affective disorders as a result of organic brain diseases are not uncommon. Neurological disorders seem to be significant as risk factors for newly diagnosed mania in the elderly (7). It has been theorized that lesions in the right cerebral hemisphere and limbic structures may produce symptoms suggestive of mania (8). However, specific lesion locations have not been clearly established in mania secondary to neurological diseases (8). This is because secondary mania associated with stroke is

believed to be a reasonable rarity (9, 10). In one study, only 2 cases of mania were observed among more than 700 consecutive stroke patients (9). In terms of treatment, medications that are recommended are essentially the same as those used in primary mania. Newer antipsychotics seem to have antimanic effects and may provide mood stability. In acute secondary mania, especially when it is expected to be temporary, antipsychotics may be more helpful than lithium and anticonvulsants because of faster onset and lower risk of EPS (11, 12).

To date, still very little is known about stroke induced mania. A study by Tang et al in Hong Kong demonstrated that among 157 first time Chinese patients that had suffered a stroke, mania was not one of the psychiatric morbidities identified (13). Further attempts to unveil other clinical data regarding this entity in the Asian region have been unsuccessful.

Therefore, more research is definitely needed in this area so as to understand this condition better. However, with the condition being a rarity, this is easier said than done but attempts must be made to enable clinicians to identify this entity better to aid in the overall management of the individual. The lives of stroke patients are already devastated, the last thing they need is to be ruined further by mania.

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