Wernicke Korsakoff Syndrome in a chronic alcoholic male: Case Report

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Abstract
A man in his 60's with past history of chronic alcoholism came to hospital with chief complains of forgetfulness. Following the admission he was given IV infusion of 10% dextrose, which precipitated his Vitamin B1 deficiency. His condition deteriorated and showed features like confabulation; a very specific sign of wernicke encephalopathy. Diagnosis is based mainly on clinical symptoms and examination. Wernicke korsakoff syndrome is very difficult to diagnose and hence, prevention is the best way to reduce incidence of wernicke korsakoff syndrome. High risk group like chronic alcoholics, malnourished and bariatric surgery patients should be given thiamine parenterally before starting any other treatment.

1. Introduction
Alcoholism is a severe form of alcohol abuse. It is distinguished by a lack of control over one’s drinking habits or methomania. It is also referred to as Alcohol use disorder. Mild, moderate and severe types of alcohol use disorder exist depending on your drinking habits. Each category has diverse symptoms and adverse effects (Rehm, 2011). If left untreated, any type of alcohol abuse may spiral out of control. Alcoholics believe that they cannot operate normally without alcohol. This can lead to a variety of issues and have impacts on personal matters, relationships, professional goals, and overall health. Chronic alcohol consumption may aggravate and lead to dangerous complications.

Alcoholism is one of the most serious public health issues, and the Wernicke-Korsakoff Syndrome is one of its most severe consequences. According to post-mortem research, Wernicke-Korsakoff syndrome affects about 12.5% of dependent drinkers and 2% of the general population. Korsakoff Syndrome is an amnestic disorder that typically occurs after untreated Wernicke's encephalopathy. Wernicke-Korsakoff Syndrome is a post-mortem diagnosis that is frequently misdiagnosed.

2. The Case Presentation
Maheshbhai kanjibhai prajapati, a 62-year-old male, Hindu, daily wage worker at APMC, Jamnagar, was admitted to the Medicine Ward of Guru Gobind Singh Government Hospital, Jamnagar with chief complaints of deceitful tendencies and forgetfulness. These complaints had been present for 22 months. The patient had been drinking for the past 32 years. For the first year, he drank approximately 80 ml of country-made liquor (Desi Daru-which is sold in plastic bags in Indian villages) per day; this amount was later increased to approximately 160 ml/day. His daily consumption increased to 600-700 ml/day. He tried to abstain from alcohol on several occasions, but he experienced palpitations and tremors. He complained about 3 years ago of confusion, ataxia, and altered sensorium. He was admitted to a dispensary and treated with antiviral medications and a pint of 10% Dextrose but not with thiamine supplements. His condition deteriorated after discharge, and he developed forgetfulness symptoms. He could not remember whom he had seen the day before or what their names were. He could not remember if he had eaten breakfast or taken a shower, and he would lie when questioned. When his family or wife tried to speak to him, he was deafeningly silent. When asked about recent events, he would give irrelevant responses and say the same thing over and over. His father's alcoholism, which led to his father's death 25 years ago, is revealed by significant family history. Both of the patient's elder sons and two of his elder brothers had a history of alcoholism. Relatives denied having any other mental illness within the family.

1.1 General Examination
On examination, the patient was discovered to be cooperative, conscious, and focused. He had a regular pulse rate of 70 beats per minute. His respiratory rate was 16 breaths per minute and his body temperature was 100°F. In the sitting position, he had a blood pressure measurement of 116/80 mm Hg in his right upper arm. Additionally, he had no clubbing, pallor, icterus, lymphadenopathy, or cyanosis. The patient had no obvious signs of liver disease or liver failure.

1.2 Examination of the Central Nervous System
All cranial nerve examinations fell within normal limits. Nutrition was adequate in all limbs, and the power was found to be 5/5 in all four limbs. The four limbs had normal tone. All his limbs had no deep tendon reflexes, there were no involuntary movements, and hypoesthesia was observed in his lower limbs. Cerebellar signs were within normal ranges. There were no symptoms of meningitis. The remainder of the systemic examination was normal.

1.3 On Examination of Mental Status
Maheshbhai had a clear sensorium, but couldn't keep his attention. He was oriented and very aware of the place, time, and person. His memory registered 5/5 with a recall of 3/5. He also had impairment in immediate and recent memory with prominent anterograde amnesia, proclivity to confabulate, and islands of preservation.
1.4 Examination of Mini-mental State
Maheshbhai had an MMSE score of 19 upon examination.

1.5 Other investigations
Blood and routine investigations were within the normal ranges.

1.6 MRI and CT scan
Large lateral ventricles, wider 3rd ventricles, and cerebral atrophy were demonstrated with high-resolution contrast CT scan.

1.7 Diagnosis
Maheshbhai’s case was diagnosed as Wernicke-Korsakoff Syndrome with nutritional neuropathy according to ICD 10.

3.0 Discussion
The Wernicke-Korsakoff syndrome is divided into two stages. First, there will be a brief period of a severe inflammatory response (swelling) of the brain. This is referred to as ‘Wernicke's encephalopathy.’ If this status is not treated promptly, the individual may develop a more severe condition known as 'Korsakoff's syndrome.' Most of the symptoms are similar to those of dementia. A deficiency of thiamine frequently results in Wernicke's encephalopathy, which has a high mortality and morbidity rate. It is frequently misdiagnosed. Diagnosis is made frequently during the pathological examination. It affects roughly 12.5% of the dependents and 2% of the general population. It is critical to correct not just the magnesium and thiamine deficiencies, but also all other dietary deficiencies, to provide the patient with the best chance of regaining normal neurological function (Vetreno, 2011). Given the diagnostic challenges, healthcare professionals must set a low bar for declaring a 'presumed' diagnosis of Wernicke's encephalopathy. It is preferable to consider giving much more thiamine earlier than too little too late. Since all symptoms and clinical signs are uncommon in Wernicke's encephalopathy, a high index of clinical suspicion must be kept at all times.

Alcohol deprives the body of vitamin B1, which is required for brain cells to work appropriately. For instance, heavy alcoholics who are otherwise active and fit can be given oral vitamin B1 of about 300 mg/day all through detoxification; patients at significant risk of Wernicke's Encephalopathy can always be given 250 mg of thiamine parenterally every day for 3 to 5 days; while those with established or suspected Wernicke's encephalopathy (Arts et al., 2017) can be given well over 500 mg vitamin B1 intravenous or intramuscular - 3 to 5 days, depending on the patient's response.

In a recent study by Victor et al. on Korsakoff Syndrome patients, 25 percent did not improve, 25% recovered, and the remaining 50% improved over time, some of the patients may have an inherited proclivity (American Psychiatric Association & American Psychiatric Association, 2013). The neuropathology of the disease is distinguished by (I), gliosis (ii) micro-hemorrhages, and (iii) neurodegeneration in the peri-aqueductal grey matter. Memory impairment can be likened to lesions within the mammillo-thalamic tract, mammillary bodies, and anterior thalamus as opposed to the thalamic medial dorsal nucleus. Korsakoff syndrome is distinguished by severe paroxysmal cognitive deficits. Whereas episodic memory is maintained, cognition of latent semantic memories is differently affected. Korsakoff patients can learn new content in a serene and quiet environment, particularly if the information is prompted. Only a handful of protracted studies on Korsakoff Syndrome patients have been conducted. Notwithstanding, the available evidence suggests that patients with Korsakoff Syndrome can maintain a normal lifestyle if they abstain from alcohol consumption. Korsakoff syndrome is usually irreversible. Thiamine deficiency causes brain tissue to deteriorate rapidly (Kopelman et al., 2009). Korsakoff’s syndrome dementia affects the CNS and cardiovascular systems as well. When an individual is diagnosed with terminal alcoholism, their average lifespan is sometimes as short as 6 months.

4. Patient Education
Avoidance of alcohol and a sensible diet offers the best chance of healing and preventing of subsequent episodes of Wernicke-Korsakoff syndrome caused by alcohol. Patients who have had bariatric surgery are advised to maintain a healthy diet and take vitamin supplements. Family support and education are critical components of caring for anyone suffering from dementia, including Wernicke-Korsakoff syndrome. Patients who have persistent dementia normally require 24-hour close monitoring since they have little understanding of their disease and considerable cognitive limitations in daily activities. Despite cognitive dysfunction, some patients with alcoholism may continue consuming alcohol. In extreme cases, public or private conservatorships (or guardianships) may be required by the courts.

Some deaths are prompted by infectious diseases and liver failure, while others are caused by irreversible defects resulting from prolonged and severe thiamine deficiency. In extreme situations, the incidence rate can reach 10-15%. The specific mortality rate is difficult to establish because the presentation is dynamic and frequently clinically overlooked. The survival rate is determined by the stage of illness at the time of presentation and therapeutic interventions. In 77 percent of Wernicke-Korsakoff patients, undefined infections were the causes of death (Foster, 1989).

5. Conclusion
Among the most serious public health issues globally is alcoholism. Chronic alcohol use can exacerbate and result in dangerous complications such as Wernicke-Korsakoff Syndrome. Memory loss is analogous to lesions in the mammillary bodies and anterior thalamus. Patients with Korsakoff Syndrome may be able to live a normal life if they refrain from drinking alcohol. The greatest shot of healing and preventing future occurrences of Wernicke-Korsakoff syndrome is to abstain from alcohol, eating a healthy diet and administration of thiamine.
References


