

Neurology Resident Assignment (PGY-3) Anthony Holt, D.O.

This case report involves a young man that was diagnosed with Narcolepsy in 1994. His current care and treatment are through MCV Neurology Department. The case report is written as he presented in 1994.

- 1) A 22 year old white male had a complaint of excessive daytime sleepiness. This started when he was in his mid to late teens. He often fell asleep during high school classes. The patient also wrecked several automobiles because he “fell asleep behind the wheel.” During rare occasions of emotional stress (i.e. laughter or anger), he would pass out. When asked, he had also experienced sleep-related hallucinations that occurred at the beginning of sleep. There were rare incidents of an inability to move upon waking. At this time, he felt exhausted throughout the day. Occasionally, he fell asleep during eating or talking. Short naps throughout the day were often helpful.

This patient did not have any allergies to medications and he was not taking any prescriptions. He did not have a significant past medical history. His paternal grandfather had Narcolepsy. He smoked a half pack of cigarettes a day, and he did not drink alcohol or use illegal drugs. He worked as a mechanic. His physical and neurological exams were completely normal.

- 2) Narcolepsy
Sleep Apnea
Seizures (Absence, Complex Partial, etc.)
Poor sleep hygiene
Syncope/ Pre-syncope
Depression
And others: Brainstem Gliomas, Bilateral Diencephalic Lesions, Drug Abuse
- 3) Narcolepsy:
This patient had basic labs such as CBC and basic metabolic panel drawn and all were normal. Both an EEG and MRI of the brain were normal. The patient underwent an overnight polysomnogram. The polysomnogram was interpreted as normal. No significant respiratory events were demonstrated. The polysomnogram was followed by a Multiple Sleep Latency Test (MSLT). The MSLT showed findings consistent with Narcolepsy. The patient had a mean sleep latency of 3.38 minutes. He also had 3 sleep onset REM episodes. A MSLT that shows more than 2 sleep onset REM periods and a sleep latency less than 5 minutes is highly suggestive of Narcolepsy. Considering the patient’s symptoms and the results of the MSLT, the patient was given the diagnosis of Narcolepsy.
- 4) This patient was diagnosed with Narcolepsy in 1994, before Modafinil (Provigil) was available in the U.S. Is it possible to switch his medication of Methylphenidate and Dextroamphetamine to Modafinil?

- a) Thorpy MJ, Schwartz JR, Kovacevic-Ristanovic R, Hayduk R/ Initiated treatment with Modafinil for control of excessive daytime sleepiness in patients switching from methylphenidate: an open-label safety study assessing three strategies. *Psychopharmacology* 2003; 167: 380-385
- b) Schwartz JR, Feldman NT, Fry JM, Harsh J/ Efficacy and safety of Modafinil for improving daytime wakefulness in patients treated previously with psychostimulants. *Sleep Medicine* 2003; 4: 43-49

5)

- a) Non-pharmacologic Treatments:
 - 1. Regular sleep schedule with approximately 8 hours sleep
 - 2. Scheduled naps (if Possible)
 - 3. Avoid alcohol and illegal drugs
 - 4. Proper nutrition and exercise
 - 5. Restrict driving when tired
- b) Pharmacologic Treatments:
 - 1. Excessive Somnolence
 - a. (Pemoline, Methylphenidate, Dextroamphetamine Sulphate, Methamphetamine, and Amphetamine) All of these psychostimulants work through the mechanism of increasing dopamine. These drugs cause the neuronal release of dopamine and its re-uptake.
 - b. Modafinil activates wake-generating neurons in the tuberomammillary nucleus of the hypothalamus, which increase cortical activity via ascending histaminergic projections to the cortex. It does not have an effect on dopamine.
 - 2. Cataplexy:
 - a. TCA's (ie Clomipramine)
 - b. SSRI's (ie Fluoxetine)
 - c. Sodium Oxybate (Xyrem)
 - How these drugs treat Cataplexy is unknown.

6) Narcolepsy Network Inc.
 National Office
 10921 Reed Hartman Hwy. Suite 119
 Cincinnati, OH 45242
 Phone: (513) 891-3836
 Website: www.narcolepsynetwork.org

St. Jude Medical Center
 Health Resource Line
 (800) 870-7537
 Narcolepsy Support Group

7) Patients that have Narcolepsy and remain undiagnosed will have multiple problems. The hypersomnolence alone will cause their work or school performance to be impaired. They may have difficulty forming social relationships secondary to

drowsiness and embarrassing episodes of cataplectic attacks. These patients are at an increased risk for motor vehicle accidents. The problem is that Narcolepsy may be undiagnosed for years (or not at all). With proper diagnosis and treatment, most patients do have a good prognosis. I reviewed the current literature and did not find any studies that gave information on mortality/morbidity. In an article by Matthew Baker, M.D. on Emedicine.com, he states that 24% of Narcoleptic patients had to quit working and 18% had been terminated from their jobs.

- 8) At what age are the majority of Narcoleptic patients diagnosed?
- a. < 2 years old
 - b. between 2 and 5 years old
 - c. between 5 and 10 years old
 - d. early 20's to early 30's
 - e. > 50 years old

Answer: d

Which medication(s) is (are) used to treat the symptom of cataplexy?

- a. Clomipramine
- b. Sodium Oxibate
- c. Fluoxetine
- d. None of the above
- e. All of the above

Answer: e

Which symptom(s) is (are) associated with Narcolepsy?

- a. sleep paralysis
- b. cataplexy
- c. excessive daytime sleepiness
- d. hypnagogic hallucinations
- e. all of the above

Answer: e

- 9) After researching Narcolepsy, I was surprised to discover that the incidence and prevalence is equal to Multiple Sclerosis. I believe that many patients with Narcolepsy may be undiagnosed. Patients that were diagnosed before Modafinil was available could possibly be switched from older medications that carry greater side effects and possible addiction. Both articles that I reviewed suggest that switching from amphetamines to Modafinil is beneficial and safe.