The Upper Airway Resistance Syndrome and the Single Girl

Madge began her workday differently from the hundreds of others that had gone before. Avoiding the coffee room (the ‘gathering place’), she took a circuitous path past the PFT Lab and the copy machine, hoping to avoid the inevitable.

Prior to leaving work the night before, she had gingerly placed the ‘Note-from-Hell’ in Allison’s cubicle, dead-center of the desktop planning calendar that launches everyone’s workday. As Office Manager of the Breathing Center, she could no longer tolerate the continued tardiness and overall inefficiencies of one of her reports.

From the desk of Madge Soze:

Allison,

We need to talk. Bring your things to my office for a nine o’clock meeting tomorrow morning.

We have talked about this before......

I’m sorry,

Madge

Allison did not return to her desk, nor did she ever perform another PFT for the Breathing Center.

At the time, she had no idea that Madge had just saved her life.

Let’s talk about poor Allison. Allison is a 32 year old female, a single parent with a single child. With only one income of any substance to support her son, she is dependent on steady work to make ends meet. She can not afford to lose the job at the Breathing Center, but she is confidant that she can find work in short order given her education, skills, and personality montage.

Everyone loves Allison. She is gregarious and congenial. She had been a joy around the office, until her daytime sleepiness began to quiet her, and send to her office for covert little naps, camouflaged as required paperwork breaks. But her paperwork was never caught up, and never complete.
But let's complete the picture. Allison, while quite fit (she run-walks about 3 miles each day during her lunch break), wrestles with that common predisposition to weight gain that occurs whenever one happens to walk even close to the pastry counter. After the birth of Christopher, she had gained a lot of weight. Her (now ‘ex-’) husband had complained of her light but incessant snoring. And she attributed the chronic daytime fatigue (called daytime hypersomnolence) to the attendant rigors of raising her little one.

Yet, her hypersomnolence has been worsening since the divorce, in spite of the fact that she has lost weight and is now almost at the ideal. More frequently, she awakens late to find that she has turned off not only the first alarm, but the two backup alarms as well.

She has no recollection of being aroused by them. While the classical snoring symptom has abated with her weight loss, she has been told, more than once, that she ‘puffs’ her way through the night...little inspiratory pops that resemble the respiratory movements of a bluegill resting in a local pond.

Back at work, her tardiness was compounded by an overall decrease in her work efficiency. Her constant failure to meet the minimum standard laboratory operating procedures led to her eventual dismissal.

She has yet to learn that her next job will not be as easy to secure as the last. You see, Allison has gained the reputation as a ‘slacker’, a poor investment as a productive employee.

The word is out.

**The Upper Airway Resistance Syndrome**

Allison suffers from a condition called Upper Airway Resistance Syndrome, or UARS. UARS is a breathing disorder during sleep that is only recently understood to have a wide prevalence amongst middle-aged males and females between the ages of 30 and 60 years.

The UARS disorder appears, at least polysomnographically, to manifest as a very mild expression of the Obstructive Sleep Apnea Syndrome (OSA or SAS). Unlike OSA, with its obvious and easily measurable periods of breathing cessation and arterial oxygen desaturation, UARS presents more covertly. In fact, with standard polysomnography airflow transducers and breathing monitoring devices and strategies, UARS will often go unnoticed.

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undetected. Instead of a complete airway occlusion (apnea) or a profound paucity of normal ventilation (transient hypoventilation, or hypopnea), UARS features a predominately patent and open airway that is undergoing subtle degrees of inspiratory flow limitation due, primarily, to transient increases in inspiratory resistance. Airflow is maintained, with either a subtle compromise in inspiratory airflow (increase in Ti and Ti/Ttot ratio) and/or an increase in the driving pressure to generate the inspiratory breath. The compromise may or may not present as a snore. (Recall in Allison’s’ case, her snoring was reduced to a barely audible puff). However, in almost all cases, the increased inspiratory resistance causes an arousal during sleep. For example, when an individual presents with UARS, the polysomnographic record often is characterized as having hundreds of arousal’s which ‘pepper’ the sleep EEG (electroencephalogram). These EEG arousal’s are significant enough to disrupt sleep, but not profound enough to interrupt the continuity of sleep as measured by the standardized system of sleep stages. Thus, the polysomnogram may feature an entirely normal distribution and sequencing of the sleep stages, suggesting a restorative nights sleep, when, in fact, the patient is arousing throughout the night. These arousal’s (often called “spontaneous” or “idiopathic” arousal’s because they cannot be linked to a measured apnea or hypopnea) are the culprits that lead to excessive daytime sleepiness and potentially to the compromises in the activities of daily living experienced by our Allison.

One last thing before we get back to Allison’s plight. From evidence presented to date, it appears that UARS is far less discriminating than is OSA in terms of its gender specificity. Obstructive sleep apnea has a much wider prevalence in males than females. Only post-menopausal and obese women usually present with the same symptomology that males routinely display at a much earlier age. It is rare that a premenopausal female will present with OSA, unless she is significantly overweight and/or is experiencing some other metabolic disorder. Yet the condition of increased upper airway resistance seems to be a great equalizer, demonstrating parity as it afflicts males and females with balanced propensity. In this light, then, it can be said that UARS has an increased gender specificity for females, as compared to the Obstructive Sleep Apnea Syndrome.

Let’s get back to Allison.....
UARS and the Single Girl

Chronic daytime sleepiness is a major cause of economic, social and medical impairment and disability. Just ask Allison. She owes her daytime hypersomnolence to the sleep fragmentation caused by the repeated nocturnal arousal's that arise from her increased upper airway resistance. Unless her condition is recognized and she undergoes a polysomnographic evaluation in a laboratory that is aware of the prevalence and gender specificity of the disorder, she may go untreated for years. How many more jobs lost?

Desperate, and on her way to yet another job interview, Allison falls asleep at the wheel as she waits at a traffic light. Christopher is unaware as he juggles his magic-dragon beany-baby, secure in the carseat in the back. As her right leg relaxes and falls from the brake pedal, the car drifts aimlessly into the busy intersection ahead. A semitractor trailer truck, barreling through the intersection, swerves valiantly in a futile effort to avoid the collision. Allison awakens in terror to find her vehicle spinning wildly as she hears her son tearfully calling for her. She remembers the sensation of dozens of shards of shattered glass penetrating her arm and the left side of her face. And her final recall is of an intense, uncontrollable desire to succumb to sleep.....

The Happy Ending

Days later, while tucking her son into bed, she reflects back on her conversations with Madge at the Breathing Center. The excessive sleepiness. The poor work ethic. The daytime naps masquerading as ‘busywork.’ Madge had suggested that Allison undergo a sleep disorders evaluation, a notion that, at the time, seemed preposterous. Suddenly, with Christopher drifting off to sleep beside her, the idea seemed wildly obvious.

Well, our Allison had the sleep evaluation, with polysomnography, at a laboratory properly equipped to recognize and treat the disorder. She is complying with her lowlevel CPAP prescription (for three weeks now), and has recently been hired to perform PFT's and Metabolic testing at the University Medical Center. She is sleeping again, without arousal (other than those routinely caused by a healthy 3 year old boy who has never, ever slept through the entire night!). Her UARS has been recognized, diagnosed, and properly treated. Her life is turning around.

Remember Madge, Allison’s worst nightmare? We should all be so lucky to have ‘enemies’ like Madge in our lives.
An Alternative Scenario (the Sad Ending)

The Sleep apnea syndrome is commonly recognized in males, and efficacious treatment modalities are available. Consider that the condition of UARS has only recently been defined, and is being continually redefined as more data is accumulated re: its presentation, its affect on activities of daily living, its prevalence, and its treatment. Recall, from the foregoing, that UARS has a pronounced relative gender specificity for premenopausal females. Now consider the sleep practitioner who is inexperienced or uneducated in the disorder called UARS.

Since we have become familiar with Allison, let's use her scenario to illustrate the point. Suppose she visits the inexperienced sleep practitioner who recognizes that she is excessively somnolent during the day, and schedules her for a sleep study. But because the lab is ill-equipped to discern the subtle inspiratory flow limitations that are the hallmark feature of UARS, the sleep techs label the frequent arousal's that appear on her polysomnogram as 'spontaneous' or 'idiopathic' (elegant ways to label something when we have no other idea what to call it). No respiratory events are recorded. No significant desaturations. Just lots of EEG and EMG arousal's and a woman who is sleepy all the time.

In this scenario, Allison's polysomnogram is negative! But she is excessively sleepy, is experiencing excessive moodiness, and has experienced an episode where she could have been killed (a potential misconstrual of the auto-accident as a botched suicide attempt). Can you guess what the recommended therapy is for Allison in this scenario?

It is recommended that Allison begins an aggressive regimen of the psychotherapeutic medication called Prozac, an antidepressant. Allison has been diagnosed as having excessive daytime sleepiness because she is depressed...not because of the actual condition of UARS. Her condition goes untreated. And potentially worsened, as some antidepressant medications have a slight sedative effect, meaning her increased resistance episodes will continue, and her sleep fragmentation will continue. Now she has two different phantoms attacking her wakefulness...the UARS arousal's and the medication.

UARS and the single girl. It’s not just a man’s disease anymore.