Eyes and Sleep Apnea. Any relation?

What is Sleep Apnea?

Sleep apnea is a disease characterized by recurrent complete or partial upper airway obstructions during sleep. It is more common in overweight men and 12 million adults in the US suffer from sleep apnea.

What are its (a) Symptoms and (b) Causes and (c) Risk factors?

(a) Symptoms

✓ Loud snoring. The loud snoring is often followed by periods of silence (apnea, when the airway is completely obstructed): these pauses are often followed by gasps or choking sounds as the person resumes breathing.
✓ Daytime sleepiness: Dozing off while driving, at work or even during conversations.
✓ Hypertension, Unexplained weight gain
✓ Morning headaches, Difficulty concentrating, Forgetfulness, Mood disturbance, Anxiety, Depression, reduced sex drive, dry mouth in the morning

(b) Causes

a. Obstructive Sleep apnea (OSA) - Common, results from an obstruction of the upper airways, preventing air to reach the lungs.

b. Central sleep Apnea - here the brain fails to instruct the body to breathe

(c) Risk Factors: Obesity, male gender, upper airway abnormalities, alcohol use, snoring, and neck girth

What are the risks, if untreated?

✓ Obesity, diabetes
✓ High Blood Pressure (Hypertension), Heart Failure, Irregular heart beat
✓ Stroke
✓ Higher incidence of Traffic Accidents

What are the Eye conditions that may be associated with Sleep Apnea Syndrome?

✓ Non Arteritic Ischemic Optic Neuropathy (NAION)
✓ Idiopathic Intracranial Hypertension (IIH) / Pseudotumor cerebri (PTC)
✓ Floppy Eyelid Syndrome (FES)
✓ Glaucoma / Normal Tension Glaucoma

What are the Conclusions from clinical studies of sleep apnea associations with eye conditions?

1. Patients with untreated sleep apnea are at increased risk for IIH and NAION. Clinicians should consider appropriate screening for these conditions in sleep apnea patients.
2. Sleep apnea is the most frequent disorder associated with NAION and should be screened in this population. At least a questionnaire related to obstructive sleep apnea symptoms and assessment of sleepiness should be systematically proposed to patients with NAION
3. Floppy Eyelid Syndrome (FES) patients have a very high incidence of Obstructive Sleep Apnea (OSA) and a causal relationship may exist, treatment of OSA may help FES.
What is NAION (Non Arteritic Ischemic Optic Neuropathy)?

NAION is an acute, painless eye condition that results in a sudden loss of vision in one eye, usually resulting from closure of the small blood vessels in the optic nerve. The risk factors include: patient’s age, small crowded optic nerves (disk at risk, with small or absent central cup), optic disc drusen, diabetes, hypertension, nocturnal low blood pressure, some medications and SLEEP APNEA. These patients should be evaluated for systemic vascular disease and unfortunately no specific treatment exists. NAION should be distinguished from the Arteritic variety (Arteritic Ischemic Optic Neuropathy) that results in severe painless, permanent vision loss (usually rapid, sequential and bilateral) associated with a systemic inflammation of arteries called Temporal Arteritis or Giant Cell Arteritis that should be promptly diagnosed and treated urgently as instituting proper therapy can prevent loss of vision in the fellow eye.

What is IIH/PTC (Idiopathic Intracranial Hypertension/ Pseudotumor cerebri)?

This is a clinical condition of unknown etiology that results from raised cerebrospinal fluid (CSF) pressure in the brain causing headaches, transient loss of vision, blurry vision, ringing sensations in the head, and swollen optic nerves. The risk factors include young overweight women, sleep apnea and use of many medications. This condition can be treated both medically and surgically.

What is the treatment for Sleep Apnea?

1. Sleep Study and Interpretation (Office or Home based studies)
2. Evaluation of the anatomy of the throat and the upper airways to diagnose and treat potential obstructions
3. Weight reduction
4. Physical Intervention:
   a. CPAP (Continuous positive airway pressure) masks
   b. Mandibular (Jaw) Advancement Splints
5. Surgery
   a. Surgery to correct nasal septum deviation, tonsil and adenoid removal
   b. Surgical / Laser removal of Uvula and soft palate (uvulopalatopharyngoplasty, UPPP)
   c. Maxillo-mandibular advancement (MMA)- bringing the jaw forward to open airways

Remember -

✓ Sleep apnea is a potentially serious condition that should be recognized early
✓ A diagnosis can be established by performing a Sleep Study
✓ It is a risk factor for certain vision threatening eye conditions like ischemic optic neuropathy
✓ Early treatment can alter the course of disease and prevent life & sight threatening conditions

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References: