

## Short Communication

# Diagnosing Obstructive Sleep Apnea – Reaching the Body of the Iceberg

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Obstructive sleep apnea syndrome (OSA) consists of repeated upper airway occlusions accompanying arousals and desaturation episodes. Intrathoracic pressure alterations as well as desaturations may all cause multi-systemic outcomes [1-5]. Prevalence studies have revealed rates as 9-10% in middle age population however diagnosis of OSA is underestimated which might be due to unawareness of the disease by both the patient and the doctors [6,7]. “Occult” and therefore “untreated” sleep apnea may cause significant morbidities and mortality [4,8-13].

Clinical suspicion for OSA is the first step of the diagnosis. History confirming this suspicion such as complaints of snoring, witnessed apnea, daytime sleepiness, accidents due to sleepiness or presence of concomitant systemic disease/s are informative. “Unrefreshing sleep” is a common complaint in those patients especially with more severe OSA and also patients may suffer from sore throat, fatigue, headache, night sweats, nocturia, insomnia, impotence symptoms at admission [14,15].

Most of the OSA patients are obese but should be kept in mind that approximately 40% of patients may be within normal BMI limits. Craniofacial structural features are more profound risk factor-rather than obesity in Asians. OSA is more frequent in male gender due to several factors such as longer and more collapsible airways and apple shape/truncal obesity. OSA risk increases with advanced age in both gender and this increase is more pronounced in the postmenopausal period among females [7,16].

Impact of upper respiratory tract on OSA is low except for the mechanical obstruction however examination must be carried out for both in OSA diagnosis and searching appropriate treatment option [17]. Upper airway endoscopy accompanied with Müller maneuver or during sleep may be performed for the estimation of possible obstruction site. Enlarged uvula tonsillar hypertrophy, retrognathia/presence of structural abnormalities such as micrognathia can also be identified. Soft tissue and bone evaluation is possible with cephalometry, CT or MR imaging.

Hypertension (HT) due to sleep apnea may be presented as various ways such as early onset HT (non-dipping HT) which is defined as higher tension levels in the morning than evening and

resistant HT which is defined as untreated HT due to at least three anti hypertensive drugs [2,18]. Pulmonary HT is another important issue that may be more prevalent in patient with hypoventilation accompanying OSA or obstructive/restrictive lung pulmonary disease may be determined by echo. Diabetic patients may exhibit uncontrolled diabetes due to underlying sleep apnea. Presence of metabolic syndrome itself may also be a clue for clinician especially in a patient with complaints of OSA [3]. Similarly; patient may suffer from recurrent or untreatable rhythm problems [19]. All of these difficult to treat clinical circumstances should remind the clinician OSA.

Depressive symptoms are common in sleep apneic patients [20]. OSA related complaints such as daytime sleepiness and concentration deficit may be misdiagnosed as depression. Social isolation due to OSA related complaints may also cause depression. In both circumstances prescription of sedative and hypnotics may cause vicious circle deteriorating OSA.

There are subjective and objective tests for the assessment of sleepiness and sleep quality. Epworth sleepiness scale, which consists of a total of 8 questions and evaluates sleepiness state of the person 10 and higher ratings of sleepiness is assessed in favor of the use of assessment after treatment in patients may be appropriate [21]. In clinical practice; subjective tests may be insufficient in evaluating patients in which sleepiness score is low because actively working individuals may masquerade sleepiness with increased tea/coffee consumption or stimulants consciously/unconsciously or may be insufficient for elderly [22].

Stanford Sleepiness test consists of items from 1 to 7 and 7 reflects most sleepiness. Pittsburg sleep quality scale is another survey for assessment of sleepiness. Berlin questionnaire, STOP and STOP-BANG tests are diagnostic surveys for evaluation of OSA probability. Objective tests in evaluating sleepiness are MSLT, MWT, pupillometry and Osler test although the latter two are not used routinely [23].

Polysomnography (PSG) is the gold standard test for diagnosis. There are 4 types of devices. Hospital based PSG can be performed via type 1 device which parameters such as EEG, ECG, EOG, leg movements, oxygen saturation are documented. Type 2 devices has similar features and suitable for use outside of a hospital. Information about whether sleeping is present or dependent on sleep stages (REM-related?) cannot obtained in type 3 and 4 devices due to lack of EEG. Home sleep studies are recommended in subjects with moderate-to-severe probability OSA without co-morbid diseases [24,25].

As a result, the most important step in the diagnosis of OSA is suspicion and making referrals of patients to sleep clinics is important for public health. In high probability patients some recommendations such as avoidance of smoking/ alcohol/ sedatives/hypnotic drug; sleeping in non-supine position-if the patient describe position

dependent worsening, warning if patient is working in a risky work or driving. Positive impact of exercise on decreasing respiratory disturbance should be mentioned. The treatment approach must include underlying disease-OSA rather than symptoms. Prompt diagnosis for preventing poor clinical outcomes is necessary.

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