Summary

Obstructive sleep apnea (OSA) is characterized by recurrent total or partial upper airway narrowing or collapsing that occurs at different sites during sleep. It is manifested clinically with loud and irregular snoring, apneas, restless sleep, daytime sleepiness, and can cause death as well as cardiovascular, metabolic, and neuropsychological morbidity. The exact pathophysiology of OSA has not been fully understood uptill now .

Pharyngeal size, compliance, and the dynamic behavior of upper airway have been considered important factors in the pathogenesis of. OSA. So the assessment of the precise narrowing site of the upper airway in OSA patients may not be one of the keys in understanding the pathogenesis of this disorder, but also in improving the management of this condition and the success rate of the surgical treatment .

Objective assessment of the pharyngeal cross sectional area with the use of lateral cephalometry and Muller's maneuver has demonstrated a reduction in pharyngeal cross sectional area with OSA patients as compared with normal subjects .

Reflections of acoustic pulse disturbances introduced at the mouth can be used to infer the cross sectional airway area of the oral cavity and pharyngeal space down to the level of the larynx. In this technique, phase and amplitude information of the reflected sound waves can be transformed into an area distance relationship .

The studies which compared acoustic pharyngomety and other traditional diagnostic methods such as lateral cephalometry, CT, and MRI as applied in OSA, found no statistically significant difference between

these methods. Acoustic pharyngometry was considered a valid, non-invasive, and easily reproducible tool to study the patency of upper airways .

Acoustic pharyngometry was extremely effective in defining the level of stenosis in sleep disorders and its parameters by studying the relevant, and statistically significant differences between patients and controls ,

Acoustic pharyngometry is a useful alternative to invasive and expensive method of measuring upper airway in subjects with OSA .

conclusion:

1-The acoustic pharyngometry was reproducible, noninvasive, and free from potential side effects, and can be used as ascreening test to differentiate between OSAS, and normal patients.

2- Acoustic pharyngometry was extremely effective in defindig the level of stenosis and its parameters by studying the relevant and statistically significant differences between patients with OSA and the controls.

3- In the current study found that O-P segment (C wave) oropharyngeal area was the most commen stenosed site in cases with OSAS, in our locality was represented (99%) of cases . Also this segment recorded a highly significant difference between cases and controls.

4- At the last the current study found that the acoustic pharyngometry an easily reproducible predictive tool have potential utility for localizing the possible narrowing area and offers a predictive value for subjects with OSA at the initial visit.

Recommendation:

Further study is needed to assess the relationship between pharyngeal dimension and subsequent development of OSA using supine position. Because the cross-sectional area at OPJ in supine position is a potentially important parameter in evaluation of OSA.