Obstructive sleep apnea syndrome (OSAS) may be caused by the abnormality of structure and functions of upper respiratory airway. The purpose of this study is to evaluate the difference of volume change of upper airway between normal individuals and patients with snoring and sleep apnea, and try to locate the obstructive site of upper airway. 3 normal individual and 3 patients with snoring and sleep apnea were evaluated in this study. Axial CT scanning (with SOMOTOM Sensation 16, SIEMENS) was taken with 1.5mm slices, 120kv, and duration of 4 seconds, for 9 times, while being monitored with polysomnography. Volume of airway from nostril to vocal cord was measured, in each aspect of inspiration, expiration, while sleeping, snoring and apnea. The data was analyzed and compared between the patients and normal control group. It was found that the volume changes of airway were correspondent with shape changes. This new method is expected to be helpful in locating obstructive site and estimating surgical prognosis of obstructive sleep apnea syndrome (OSAS).