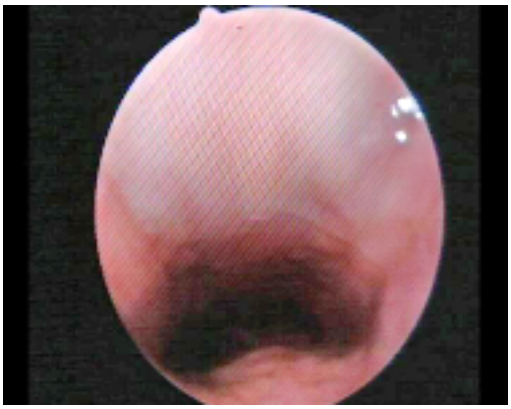
Icahn School of Medicine at Mount Sinai

DEPARTMENT OF OTOLARYNGOLOGY
HEAD AND NECK SURGERY

JULY 2014

PATIENT SPOTLIGHT

Robotic Tongue Surgery for OSA



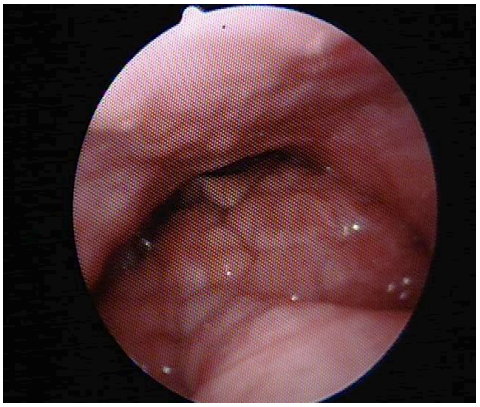


Fig 1 - a) Endoscopic view of the nasopharynx and soft palate b) Endoscopic view of the the base of tongue with signs of likely obstruction.

A 59 year old woman complains of daytime tiredness and snoring with a diagnosis of moderate obstructive sleep apnea (OSA) and an Apnea-Hypopnea Index (AHI) of 21.

INCIDENCE AND PATHOGENESIS

Obstructive sleep apnea affects over 18 million Americans with up to 4% of all males and 2% of all females affected, and over half of the population over the age of 40 having some form of snoring or sleep disordered breathing. A positive sleep study (AHI>5) indicates interruptions in breathing during sleep causing desaturations and/or apneic episodes thought to be secondary to muscle and tissue relaxation at the level of the palate and/or tongue. Tongue base obstruction is more common in moderate and severe sleep apnea patients and can be more prominent in patients with retrognathia or micrognathia.

CLINICAL SIGNS

Most commonly, patients' bed partners are the first to bring up concerns about their sleep. Heavy snoring and disruptions in breathing are often time the early warning signs of sleep apnea. Patients may also feel significantly more tired during the day with unrefreshing sleep and occasional morning headaches. On exam, areas of obstruction can occur along the nasal passages, the palatal and lateral pharyngeal airway, and at the level of the base of tongue or larynx. On our patient, the patient had a history of tonsillectomy with minimal septal deviation and no evidence of palatal or uvular redundancy and collapse. There was however significant narrowing at the base of tongue with lingual tonsil hypertrophy (see Figure 1).

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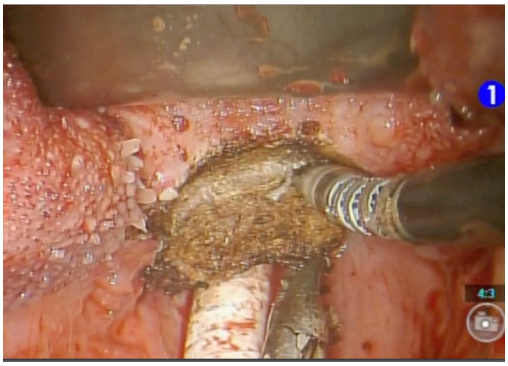

Fig 2 - Intra-operative view of TORS resection of the base of tongue

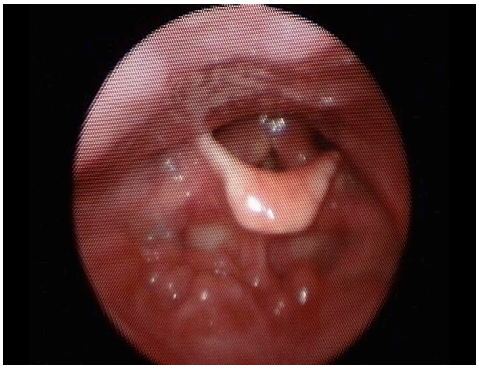

Fig 3 - Post-operative view of the base of tongue after TORS

TREATMENT

Every patient requires a customized treatment plan in the treatment of sleep apnea. The cause of airway management varies among patients and the management depends on the regions contributing to the obstruction of air flow. In this particular patient, the tongue base was seen as the main source of obstruction. Treatment options to treat the tongue base include continuous positive airway pressure (CPAP), a mandibular advance device or oral appliance, and surgery. CPAP was attempted on this patient but was not well tolerated due to feelings of claustrophobia and discomfort and a dental device was ruled out because of a history of TMJ arthralgia.

Surgical options to treat the tongue base include in-office radiofrequency reduction of the tongue base and lingual tonsillectomy via either coblation or transoral robotic (TORS) excision. In this patient, the surgery was performed robotically due to the bulk of the tissue needed to be removed and the improved visualization that the robot provides. The patient did well and was discharged the next morning on a soft diet for 2 weeks. Although she reported her pain was moderate, it was controlled with oral pain medications and she reported no taste changes or difficulties tolerating oral intake during that time. A 3 month follow up sleep study showed resolution of her sleep apnea (AHI 4.2) and significantly improved quality of life scores.

By Fred Y. Lin, MD

Assistant Professor
Director, Mount Sinai Sleep Surgery Center
Department of Otolaryngology

Dr. Lin is the Director of the Sleep Surgery Center at Mount Sinai. His clinical interests include sleep apnea, snoring, and nasal obstruction.

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Manhattan:
Faculty Practice Associates
5 East 98th Street, 8th Floor
New York, NY 10029

Center for Science and Medicine
10 East 102nd St, 3rd Floor
New York, NY 10029

Staten Island:
2052 Richmond Road, Suite C
Staten Island, NY 10306

Long Island:
325 Park Avenue
Huntington, NY 11743