NKMS Society Rounds

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THINKING OUTSIDE THE AIRWAY – TREATING OBSTRUCTIVE SLEEP APNEA WITH MAXILLOMANDIBULAR ADVANCEMENT SURGERY

Obstructive Sleep Apnea continues to be a major medical problem affecting all patient population groups whether male, female, young, old, obese, or even underweight. While more prevalent in males and those who are overweight, obstructive sleep apnea affects an alarming percentage of the population. One in fifteen adults in the United States has obstructive sleep apnea. [1] It is one of the top ten most costly healthcare issues we face.

Obstructive Sleep Apnea is estimated to occur in seventy percent of obese patients. Thirty-four percent of all National Football League linemen have Obstructive Sleep Apnea. According to the Journal of The American Medical Association, a major contributor to vehicular and work-related accidents is daytime sleepiness associated with Obstructive Sleep Apnea. The health ramifications of Obstructive Sleep Apnea are well-documented and include hypertension, cardiac arrhythmia, stroke, neurocognitive disorders and glucose intolerance. [2, 3, 4] Clearly on the rise, more articles have appeared in peer reviewed journals in the last eight years dedicated to Obstructive Sleep Apnea than appeared in peer reviewed journals in the prior twenty. In keeping with this, there are now nineteen different surgical procedures that can be performed for Obstructive Sleep Apnea in eight different intrapharyngeal and extrapharyngeal sites documented along the airway.

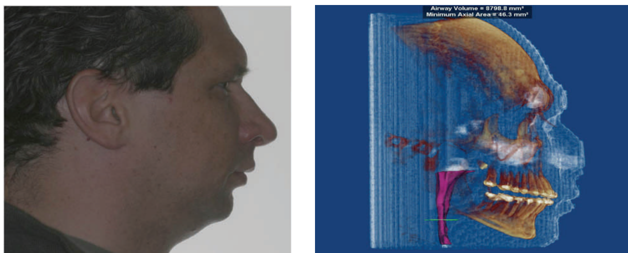

Figure 1. Pre-op photo and airway

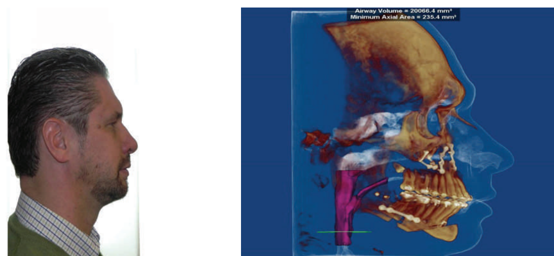

Figure 2. Post-op lateral and expanded side view airway.

While CPAP remains the gold standard for conservative management of Obstructive Sleep Apnea and mandibular repositioning appliances are finding wider acceptance for conservative interventional therapy, these two modalities of treatment are not without their limitations. CPAP therapy has a high failure rate over time and compliance night to night is quite variable. (See Figure 1 and 2) Mandibular repositioning appliances also have non-compliance issues and worse, can lead to temporomandibular joint symptoms and changes in occlusion. Additionally, these appliances are not recognized as therapeutic for more moderately severe and severe cases of Obstructive Sleep Apnea and more disconcerting, they are rarely titrated to a known apnea hypopnea index.

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THINKING OUTSIDE THE AIRWAY – TREATING OBSTRUCTIVE SLEEP APNEA WITH MAXILLOMANDIBULAR ADVANCEMENT SURGERY

~Continued from page 1~

Surgery for Obstructive Sleep Apnea spans all sites in the pharyngeal airway. Surgical procedures are best classified as either intrapharyngeal or extrapharyngeal. Intrapharyngeal surgeries, or surgeries inside the airway, include the removal of excess tissue in the soft palate and other palatal procedures. They also include tongue base surgeries as well as the removal of tonsils and adenoids in specific patients. Extrapharyngeal surgery includes advancement surgeries of the maxilla and mandible commonly known as maxillomandibular advancement surgery, as well as advancement procedures on the chin and genial tubercle. In essence, intrapharyngeal procedures remove tissue within the "tube" and extrapharyngeal procedures increase the size of the "tube" by expanding it through advancement of its anterior skeletal support – the maxilla and the mandible. Whereas intrapharnygeal procedures have been notoriously variable in their success rate, extrapharyngeal procedures have been very successful and very stable long-term when treatment is carefully planned to include the following:

1. Orthodontic intervention to establish as large of a skeletal base discrepancy between the maxilla and mandible as possible.
2. Midfacial advancement to its full esthetic extent.
3. Counter-clockwise rotation of the midface.
4. Mandibular advancement with counter-clockwise rotation.
5. Genial tubercle advancement through the use of genioplasty or a pull-through genial tubercle window.
6. Rigid skeletal fixation.

Treatment following this protocol has been reported to not only rival the success of continuous CPAP therapy as measured by percentage change in AHI but to surpass all other forms of surgical intervention for Obstructive Sleep Apnea. [5, 6, 7]

Maxillomandibular advancement surgery results in increased airway volume, increased lateral wall tonicity, decreased airway length, and decreased airway turbulence, all of which contribute to the successful management of Obstructive Sleep Apnea.

In conclusion, although maxillomandibular advancement surgery appears painful, and more difficult for patients to tolerate, it is not. When done by experienced surgeons following the treatment protocol referenced earlier, patients experience only mild to moderate pain. Rigid fixation allows the patient to function immediately post-operatively. Maxillomandibular advancement requires only an overnight stay at the hospital. While numbness to the upper and lower lip can be problematic post-operatively, function is not affected and the neuro sensory deficit is well tolerated by patients. Long-term stability has been documented and when properly treatment planned, facial harmony of the lower face is maintained or improved.

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Dr. Lee practices oral and maxillofacial surgery in Cincinnati, Ohio. He is a diplomate of the American Board of Oral & Maxillofacial Surgeons. He practices with a special interest in and commitment to the management of OSA through maxillomandibular advancement surgery.

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President's Report

Mark Schroer, MD, President, NKMS

September 17th is arguably the most important day in American history. Three events happened on that day that helped shape our country. In 1787 the U.S. Constitution was signed by 39 of our founding fathers. "We the people" came together on that day to "secure the blessings of liberty." Since that time September 17th has been known has "Constitution Day." Unfortunately most of us do not celebrate Constitution Day.

In 1862 the Battle of Antietam Creek took place in Sharpsburg, Maryland. Some 25,000 casualties occurred on that single day. Abraham Lincoln used that Union victory to establish the Emancipation Proclamation. From that day forward the nature of the Civil War would be changed.

And on September 17th another seminal event took place. The year now is 1908 and Orville Wright takes an army officer for a flight in something called an airplane. Sadly the airplane crashes. Orville Wright lives but suffers several broken bones and survives a deep vein thrombosis. For the rest of his life he would walk with a cane. The army officer, Thomas Selfridge, is killed. Lieutenant Selfridge becomes the first person to die in an airplane accident. Undeterred, the Wright brothers move forward. They perform an investigation of the crash. One might call it an "M and M." A stress fracture in the propeller is thought to be the cause of the accident. The first aeronautical investigation of a crash occurs.

So what does September 17th have to do with doctors? Well, plenty. We are not just doctors we are also citizens. Like the Wright brothers we endeavor to improve civilization; the Wright brothers through transportation and doctors through healthcare. Like the Wright brothers we have come a long way in our expertise. We are now so good at what we do we are simultaneously criticized and taken for granted. Commercial aviation has the same problem. Think about this one fact. At Atlanta's Hartsfield-Jackson airport last year there were 500,000 take-offs and landings. One million times the wheels changed on those airplanes. There were no mishaps. And that was just in Atlanta. Commercial aviation, while not perfect, is miracle much like medicine. And yet, when did you read or hear anything good about flying? We read about computer glitches and hear about lost luggage. These are nothing but droplets compared to a vast sea of success. The result is unwarranted fear. I treat at least one patient a year for fear of flying. I have never treated anyone for "fear of driving."

The same can be said about medicine. I can't tell you the last time I read a positive article about medicine in the popular press. Apparently I never wash my hands, I'm rude and I over-prescribe drugs full of side-effects. Please do not tell my mother. All of this is very damaging to our work as it undermines our expertise. In other words patients won't listen to us and heed our advice. This is bad medicine and politically leads to bad policy. A further example of this is an article just published by AARP on the 12 ways the healthcare system is harming our patients. Did you read it? Really it was about all the "mistakes" made in the "Intensive Scare Unit" and how bed sores are the real indicator of bad care. You think patients are going to listen to their doctor after they read that?

And what about our policy makers? They are reading the same things. However, to their credit, the politicians I have talked to want our input. They want to make good policy. It is up to us, the experts in healthcare to give accurate information to our policy makers.

So as citizens, we the people, must act. The events of September 17th should spur doctors into action. It is quite simple where we should start and it is easy. I ask you to contact an elected official. You might think that being president of the NKMS entails a lot of work. It does not. I have found that the "work" involved is one phone call or letter or text per week. And once sent people do listen. Do you have time to write one e-mail or make one phone call? Can you do it in the next sixty days? Of course you can. With that said I give the members of NKMS a charge. Before the year is over I ask each one of you to call, write or text any elected official about any issue you are concerned about. Your professional contact with our elected representatives does have a positive impact. You see we are "the people" the Constitution is talking about. By exercising our free speech and sharing our expertise we guarantee that "government of the people, by the people, for the people shall not perish from the earth." You know I think John Madison, Abe Lincoln and the Wright brothers would all be proud.

Northern Kentucky
Medical Society

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Northern Kentucky's
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Holiday Party

The annual Holiday Party sponsored by the Northern Kentucky Medical Society and the Northern Kentucky Medical Society Alliance will be Thursday, December 1, 2016 at the Ft. Mitchell Country Club.

The festivities begin with a cash bar, silent auction, and hors d'oeuvres at 6:30 PM. Dinner will be served at 7:30 PM and is complimentary for NKMS physician members and their guest. **The Covington Catholic Chamber Choir will perform from 6:45 PM-7:30 PM.**

The Holiday Party gives the opportunity to recognize the NKMS physician members who have retired from the active practice of medicine. If you, or if you know of another member who has retired from the active practice of medicine in 2016, please contact the NKMS, Karla Kennedy, at 859-496-6567 or via email to: nkms@nkms.org. We will be honoring retiring physicians: Dr. Mark Gutowski, Dr. William Hoppenjans, and Dr. Richard Park.

Please make plans to attend this year's Holiday Party. Invitations will be mailed in November.

We wish to extend our sympathy to the families of the following physician members who passed away in 2016: Dr. Howard Heringer, Dr. Charles Perry, and Dr. James Schrand.