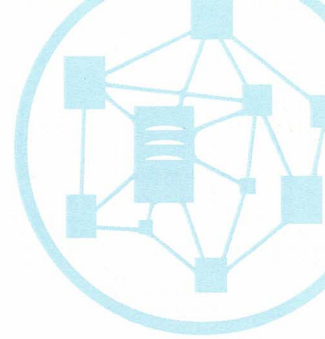


Case Study - Obstructive Sleep Apnea (OSA)



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Dr Annabelle Leong is an Otolaryngologist with nearly 20 years of ENT experience with children and adults, having trained and worked in the United Kingdom, Canada and Singapore. She received her MBBS with Distinction from Guy's, King's and St Thomas' Hospitals in London, UK and completed her postgraduate specialist training in London. She was awarded an otology and paediatric ENT fellowship to Toronto, Canada by the TWJ Ear Foundation. She now practises at The ENT Clinic in Gleneagles and Mount Elizabeth Novena Hospitals in Singapore, while remaining as a visiting consultant to restructured hospitals.

Case Study:

A 35 year old banker had been snoring loudly over the past year with recurrent episodes of nocturnal waking and dry mouth. His wife had started to sleep in a separate bedroom as she could not tolerate his snoring any longer. In fact, his sleep-disordered breathing had worsened over the past 2 months, coinciding with a more stressful period at work due to the cryptocurrency crash. He smoked cigars occasionally and was a social drinker. He was too busy to undertake regular exercise. This had been going on for some time but what made him decide to seek an ENT opinion was a recent spate of sore throat episodes, sometimes associated with a tendency to feel bloated after mealtimes. He did not report any epigastric discomfort but often seemed to suffer his throat symptoms at night. He did not have any dysphagia nor dysphonia.

Clinical examination revealed a 1.7 m tall gentleman with a Body Mass Index of 27. He was mildly hypertensive with a BP of 150/90. No retrognathia was noted. Nasoendoscopy showed rather large kissing tonsils with a crowded oropharynx at the retropalatal level, namely the soft palate, uvula and tonsils were causing a significant airway obstruction (Figure 1). Examination of his larynx revealed bilateral Reinke's oedema of his vocal cords which appeared inflamed and oedematous (Figure 2). His nasal passages and postnasal space were normal.

An overnight home sleep study was arranged and the results showed that he had severe Obstructive Sleep Apnea (OSA) with an Apnea-Hypopnea Index (AHI) of 32, with frequent oxygen desaturations throughout the night, dipping as low as 82%. A trial of Continuous Positive Airway Pressure (CPAP) was arranged but the patient suffered from claustrophobia attacks and did not tolerate the CPAP trial well, even when delivery of CPAP was tried with nasal cushion or nasal prongs. He declined to continue the CPAP trial after the second night.

In view of the recurrent throat discomfort, bloated sensation triggered after meals and nocturnal pattern, laryngo-pharyngeal reflux was suspected. Hence a course of Pariet (Rabeprazole) 20 mg BD and Gaviscon Advance BD for 4 weeks was prescribed. Lifestyle changes were also advised such as reducing the intake of caffeine, spicy and deep-fried oily foods. Regular exercise in the form of long brisk walks for a total of 150 minutes divided into 3 sessions a week was strongly advised.

After 4 weeks on the anti-reflux medications, he reported fewer sore throat episodes and did not feel as bloated anymore after meals, so the dose of Pariet was reduced to 20 mg OD for another 4 weeks. But he was still snoring with poor sleep quality and waking up in the morning with a persistently dry mouth and occasional headache. After careful discussion with the patient, he decided to undergo surgery to improve his breathing and sleep apnea symptoms. He underwent bilateral tonsillectomy and a barbed repositioning uvulo-pharyngo-palatoplasty (UPPP) to open up the crowded oropharynx at the retropalatal level. There are many techniques to perform this type of procedure based on surgeon preference but the barbed suture technique works quite well, involving the use of an absorbable micro-barbed suture to anchor the palate and widen the diameter of the oropharynx¹.

The patient made an uneventful recovery and reported better quality sleep with no more nocturnal waking events. At the 6 month follow-up, a repeat sleep study showed that the AHI had fallen from the previous value of 32 to 11, now putting him in the mild sleep apnea category, from his previous severe OSA. His recurrent sore throat symptoms which had partially improved with the anti-reflux medication course, had now completely disappeared, suggesting that the improvement in sleep apnea had also helped to further improve his underlying laryngo-pharyngeal reflux condition. Most importantly, his wife also felt that his snoring was much softer, so that she could move back to their shared bedroom to sleep.

Conclusion:

It is important to recognise symptoms and signs of OSA, as well as its risk factors. Undiagnosed OSA is associated with an increased risk of many adverse conditions, including hypertension, elevated blood glucose levels, cardiac arrhythmias, strokes and even earlier onset of dementia. OSA also often worsens underlying laryngo-pharyngeal reflux, with 45-60% of OSA patients suffering severe acid reflux issues², although the precise mechanism remains unclear. It is therefore essential to screen OSA patients for laryngo-pharyngeal reflux symptoms because both conditions commonly co-exist with each other. Patients with severe OSA should be offered a trial of CPAP but if they do not tolerate the CPAP, then surgery should be offered as an alternative, especially in patients with a BMI under 30 and when specific anatomical areas can be identified as the cause of airway obstruction during nasoendoscopy.



Figure 1: View of the oral cavity – Enlarged medialised tonsils, long uvula and low-lying soft palate all creating an overcrowded posterior oropharynx, a very typical appearance of someone suspected to suffer from obstructive sleep apnea syndrome.

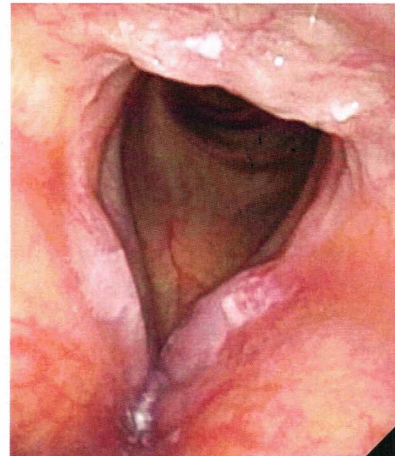


Figure 2: View of the larynx: Bilateral Reinke's oedema of the vocal cords which appear inflamed and oedematous. Risk factors include smoking, alcohol, laryngo-pharyngeal reflux and poor vocal hygiene. A chronic cough may also lead to mucosal trauma of the vocal cords and eventual Reinke's oedema.

References:

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2. Sleep and Nocturnal Gastro-esophageal reflux: An Update. Kaiser G Lim et al. Chest 2018 Oct.