Mandibular Surgery in Obstructive Sleep Apnea

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Mandibular surgery for the obstructive sleep apnea (OSA) has been developed from about 30 years ago. During that period, a lot of modification has been carried out for the successful outcome and less complications. However, the results of mandibular surgery showed remarkably variable success rate even performed as multi-level surgery. Therefore, sleep surgeon should look back the reason why this technique showed different results.

Searching for indication in terms of the patients' anatomy and physiologic condition of upper airway, and modification of surgical techniques to include total genial tubercle as a key anatomic landmark and reduce the possible risk factor of surgical failure, may be the solution for the variable surgical results. For the evaluation of upper airway, drug induced sleep endoscopy may contribute a lot and solve the problem more or less. However, the improvement of surgical technique has not been sufficient.

At the beginning of mandibular surgery for OSA, sliding

osteotomy with bilateral sagittal segmental osteotomy has been performed in early 1980th. After then, this technique became more conservative as time goes by. Finally, genial tubercle advancement by rectangular osteotomy has been popular and widely used until now. As imaging system has improved, mandibular surgery should be revisited. Position of genial tubercle can be more easily and precisely detected in the 3-dimensional CT scan. Therefore, it may be possible to reduce the surgical failure by inaccurate osteotomy and partial or false advancement of genial tubercle. Also surgical modification to reduce other factors such as muscle fatigue due to strong tension and muscle tear due to excessive advancement may reduce the surgical failure and relapse.

I would like to talk about the research of the precise detection of genial tubercle position in radiologic and cadaveric study and suggest surgical modification to enhance the surgical result.