

Abstract

Introduction

Obstructive sleep apnoea (OSA) causes a number of detrimental physiological changes, secondary to repeated episodes of hypoxia, which can lead to significant morbidity and even mortality. Continuous positive airway pressure (CPAP) treats OSA and moderates these changes by splinting open the upper airway. It is generally well tolerated but non-compliance rates are as high as 40%. Maxillomandibular advancement (MMA) surgery, which offers a permanent solution, may be suitable for patients who are unable to use or endure CPAP or in whom it is ineffectual. This study aims to evaluate the relationship between the length of preoperative CPAP treatment and postoperative outcomes from MMA.

Methods

Based on duration of preoperative CPAP use, patients treated at our centre with MMA for OSA were retrospectively divided into two groups: short-term use (less than 12 months) or long-term use (12 months or more) between 2002-2012. The postoperative apnoea/hypopnoea index (AHI), Epworth sleepiness scale (ESS) and lowest recorded oxygen saturation levels were compared between the two groups. Probabilities (*p*-Value) of less than 0.05 were considered significant.

Results

During the study period, 51 patients were identified, of which 43/51 (84%) had data concerning the duration of preoperative CPAP duration (19/43; 44% short-term: 24/43; 56% long-term), and sleep study information was available in 37/51 (73%).

The mean reduction in the AHI and improvement in oxygen saturations were not significantly different between the short and long-term groups. However the mean (standard deviation [SD]) ESS score in the long-term group (2[2]) was significantly lower than the short-term group (8[3]) with a *p*-Value less than 0.001.

Conclusion

Long-term CPAP use does not appear to affect objective outcomes (AHI and oxygen saturations) from MMA surgery for OSA. The ESS is a subjective assessment tool, which shows a greater improvement in symptoms for patients who have used CPAP long-term.