



ORIGINAL ARTICLE

New clinical staging for pharyngeal surgery in obstructive sleep apnea patients^{☆,☆☆}



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KEYWORDS

Sleep apnea,
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Abstract

Introduction: The success of pharyngeal surgery in the treatment of obstructive sleep apnea syndrome depends on the appropriate selection of patients.

Objective: To propose a new staging for indication of pharyngeal surgery in obstructive sleep apnea syndrome.

Methods: A total of 54 patients undergoing extended tonsillectomy were retrospectively included, divided into six stages. Stage I: palatine tonsils grade 3/4 and modified Mallampati index 1/2; stage II: palatine tonsils 3/4 and modified Mallampati index 3/4; stage III: palatine tonsils 1/2 and modified Mallampati index 1/2; stage IV: palatine tonsils 1/2 and modified Mallampati index 3/4; stage V: body mass index ≥ 40 kg/m² with palatine tonsils 3/4 and modified Mallampati index 1, 2, 3, or 4. Stage VI: body mass index ≥ 40 with palatine tonsils 1/2 and modified Mallampati index 1, 2, 3, or 4.

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PALAVRAS-CHAVE

Apneia obstrutiva do sono;
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Classificação

Results: The surgical success rates were 88.9%, 75.0%, 35.7%, 38.5%, and 100.0% in stages I–V. **Conclusion:** The presence of hypertrophic palatine tonsils was the anatomical factor in common in the most successful stages (I, II, and V), regardless of body mass index. Although the modified Mallampati index classes 3 and 4 reduced the success rate of surgery in patients with hypertrophic tonsils (stage II), the presence of modified Mallampati index classes 1 and 2 did not favor surgical success in patients with normal tonsils (stage III).

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Novo modelo de estadiamento para indicação de cirurgia faríngea em pacientes com apneia obstrutiva do sono

Resumo

Introdução: O sucesso da cirurgia faríngea no tratamento da síndrome da apnéia obstrutiva do sono (SAOS) depende da adequada seleção de pacientes.

Objetivo: Propor um novo estadiamento para indicação de cirurgia faríngea na SAOS.

Método: Estudo retrospectivo, onde foram incluídos, 54 pacientes submetidos a amigdalectomia ampliada, divididos em 6 estádios. Estádio I: pacientes com tonsilas palatinas graus 3/4 e índice de Mallampati modificado (IMM) 1/2; Estádio II: tonsilas palatinas 3/4 e IMM 3/4; Estádio III: tonsilas palatinas 1/2 e IMM 1/2; Estádio IV: tonsilas palatinas 1/2 e IMM 3/4; Estádio V: IMC (índice de massa corpórea) \geq com tonsilas palatinas 3/4 e IMM 1,2,3 ou 4. Estádio VI: IMC \geq kg/m² com tonsilas palatinas 1 ou 2 e IMM 1, 2, 3, ou 4.

Resultados: As taxas de sucesso cirúrgico foram de 88,9%; 75,0%; 35,7%; 38,5% e 100,0% nos estádios I a V.

Conclusão: A presença de tonsilas palatinas hipertróficas foi o fator anatômico em comum nos estádios de maior sucesso (I, II e V), independente do IMC. Apesar do IMM classe III e IV diminuir a taxa de sucesso da cirurgia em pacientes com tonsilas hipertróficas (estádio II), a presença de IMM classe I e II não favoreceu o sucesso cirúrgico em pacientes com tonsilas normotróficas (estádio III).

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Introduction

Obstructive sleep apnea syndrome (OSAS) is a highly prevalent disease that affects 32.9% of the adult population of the city of São Paulo, Brazil¹ and compromises the quality of life of patients as a result of excessive daytime sleepiness, cognitive function impairment and increased risk for cardiovascular disease.^{2,3} Ventilation with positive airway pressure, especially continuous positive airway pressure (CPAP) is the treatment of choice for patients with moderate to severe OSAS⁴; however, many patients have difficulty adapting to this long-term treatment.^{3,5–7}

Uvulopalatopharyngoplasty was the most often performed pharyngeal surgical procedure to treat OSAS; however, the success rate, when the surgery is indiscriminately indicated, was approximately 40%.⁶ Several factors were considered unfavorable, such as disease severity, age, the presence of multiple sites of obstruction, obesity, and anatomical abnormalities of the maxilla and mandible.⁸

Several pharyngeal surgery techniques are described in the literature, and according to a meta-analysis,⁹ the isolated uvulopalatopharyngoplasty procedure, with or without tonsillectomy, interferes with the apnea–hypopnea index

(AHI), but maintains residual OSAS,^{9,10} mainly in patients with moderate to severe OSAS.

In an attempt to improve the selection criteria for uvulopalatopharyngoplasty, Friedman et al.¹¹ proposed a clinical staging based on anthropometric and otorhinolaryngological physical examination for patients with OSAS, that is used till date. This staging is based on three clinical criteria: modified Mallampati index (MMI), palatine tonsil size, and body mass index (BMI). MMI classes 3 and 4 show an unfavorable relationship among the soft palate, the tongue, and the oropharynx; palatine tonsils grade 3 and 4 are considered hypertrophic.

Thus, he divided patients into four groups. Group I: patients with MMI 1 or 2 associated with palatine tonsil grade 3 or 4 and BMI < 40 kg/m²; group II: patients with MMI 3 or 4 associated with palatine tonsil grade 3 or 4 or MMI 1 or 2 with palatine tonsils grade 1 or 2 and BMI < 40 kg/m²; group III: patients with MMI 3 or 4 associated with palatine tonsil 1 or 2 with BMI < 40 kg/m²; and group IV: patients with BMI > 40 kg/m² or significant skull-facial alteration, regardless of the MMI and tonsil size.

Utilizing his staging, Friedman et al.¹² published a series of 134 patients who underwent pharyngeal surgery; the surgical success for groups I, II, and III was 80.6%, 37.9%, and

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