

Case report

## Tonsillar lymphoma as a cause of obstructive sleep apnea

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### Abstract

Infrequently in adults, isolated lesions of the upper airway, larynx, and trachea can produce obstructive sleep apnea (OSA). We describe a case of OSA found to be caused by tonsillar lymphoma presenting as asymmetric tonsillar hypertrophy. Tonsillar lymphoma is rare, but can present as hypertrophied tonsils and/or adenopathy and lead to the development of OSA. This report emphasizes the importance of a thorough upper airway examination of all patients undergoing evaluation for OSA. © 2002 Elsevier Science B.V. All rights reserved.

*Keywords:* Obstructive sleep apnea; Tonsils; Lymphoma; Physical examination

### 1. Introduction

Obstructive sleep apnea (OSA) is the result of narrowing or complete closure of the upper respiratory tract during inspiration [1]. Important risk factors for OSA include age, gender, obesity, craniofacial configuration and alcohol consumption. Obstruction usually occurs at the level of the pharynx. Except for pharyngeal narrowing and erythema, obvious anatomic abnormalities are not usually present. However isolated lesions of the upper airway, larynx, and less commonly, the trachea can also result in airway obstruction. The size of the tonsils, soft palate, uvula, and tongue all can contribute to airway collapse or narrowing. Especially in children, tonsillar hypertrophy has been shown to be an independent risk factor for OSA regardless of obesity [2].

In this report, we describe a case of OSA found to be caused by a lymphoma presenting as asymmetric tonsillar hypertrophy. The report emphasizes the importance of a thorough upper airway examination of all patients undergoing evaluation for OSA.

### 2. Case description

A 60-year-old male presented to the sleep disorders clinic complaining of progressively loud snoring for the previous 15 years. His wife noted apneic episodes lasting 15–20 s, which were terminated by gasping. He denied daytime somnolence and his Epworth Sleepiness Scale score was 6

out of a possible 24. His past medical history was unremarkable. He used no medication except for occasional ibuprofen. He was a nonsmoker. His review of systems was negative. He had gained 4 kg over the last year. Physical examination revealed him to be obese, but he had hypertrophy of the right tonsil only. It was suggested to the patient's primary care physician that he undergo a polysomnogram, and in addition be referred to an otolaryngologist for evaluation of the hypertrophied tonsil.

The patient underwent a one-night polysomnogram. It showed severe OSA with an apnea/hypopnea index of 100 events per hour of total sleep time. After 3.5 h of study, the patient was placed on continuous positive airway pressure (CPAP). It was determined that 9 cm of water pressure resulted in an apnea/hypopnea index of 3.2 events per hour of total sleep time.

The patient was placed on nasal CPAP and was subsequently evaluated by an otolaryngologist. A biopsy of the right tonsil showed large B-cell lymphoma, follicular and diffuse. The right tonsil was resected and computed tomography of the torso revealed no other masses. The patient then underwent three cycles of chemotherapy.

In follow-up, the patient notes that since the resection of the tonsil he has discontinued the use of his nasal CPAP. He no longer snores and his wife notes no further apneic episodes.

### 3. Discussion

Obstructive sleep apnea can occur as the result of narrowing or complete closure of the airways due to underlying

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morphometric anomalies or the presence of obstructive lesions. OSA has been documented to be purely the result of moderately hypertrophied tonsils. However, while resection of the tonsils usually completely resolves the OSA in children, this is often not the case in adults.

Within Waldeyer's ring, the lymphoid ring of the nasopharynx which includes the lingual tonsil, lymphoma is uncommon. However, it comprises up to 45% of malignant tumors in this area, and is primarily found in the tonsils [3]. While squamous cell carcinoma of the tonsil often presents with ulceration of the mucosa, nonepidermoid malignancy of the tonsil typically presents with normal mucosa and asymmetry [4]. OSA caused by tonsillar lymphoma is rare and has been described in three previous reports [3,5,6]. In these prior cases, two patients had asymmetric tonsillar enlargement and one had bilateral tonsillar hypertrophy. Cervical adenopathy was noted on physical examination in only one case. Rarely, extra-tonsillar lymphoma can also result in OSA. In one report, a palpable scalene node was noted in a patient with new-onset OSA, thus leading to the diagnosis of poorly differentiated lymphoma involving the retropharyngeal lymph nodes [7].

In today's climate of health care cost containment, the use of home evaluation for OSA by portable sleep recordings has become attractive as a cost-saving measure. Some health care providers may order such testing, or even labora-

tory polysomnography, based on clinical history alone without a full physical examination. However, previous cases and ours emphasize that a complete physical examination of the oropharynx and neck, as recommended by the Practice Parameters of the American Academy of Sleep Medicine, remains essential in the evaluation of suspected OSA [8].

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