

## Should We Stop Performing Uvulopalatopharyngoplasty?

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**Abstract** Uvulopalatopharyngoplasty (UPPP) is still one of the most frequently performed procedures for snoring and obstructive sleep apnea syndrome (OSAS) in adults, with unsatisfactory results. In the era of the mini-invasive/conservative surgery, considering the increasing attention to the disregulation of the peripheral neuromuscular control of the upper airway contributing to pharyngeal collapse in OSAS, with the development of sophisticated treatments such as the neural stimulation of the upper-airway, which role should be reserved to a muscular resective procedure such as UPPP? Being aware of the uncertain results and the high postoperative morbidity of UPPP, we believe that we should re-evaluate the role of these procedures involving the resection of palatal/pharyngeal muscles and uvula.

**Keywords** OSAS · UPPP · Snore surgery · Snoring · Barbed sutures

Dear Editor,

We read with great interest the recent article from Baradaranfar et al. [1] describing the effectiveness of uvulopalatopharyngoplasty (UPPP) in treatment of

patients with obstructive sleep apnea syndrome (OSAS). This paper gave us the impetus to reflect about UPPP, which is one of the most frequently performed procedures for snoring and OSAS in adults with retro-palatal obstruction, although reported results of UPPP are not brilliant [1, 2]. UPPP has a reported success rate of approximately 40–60 % for improving mild to moderate OSA [3]. Värendh et al. reported that almost 50 % of patients operated with UPPP are not satisfied with the result of the operation after 20 years, and one-third uses CPAP at the follow-up [4]. Furthermore this “resective” technique, in which the uvula, part of the soft palate and lateral pharyngeal walls are excised, is associated with long-term side-effects (velopharyngeal insufficiency, dysphagia, persistent dryness, globus sensation, voice changes, nasopharyngeal stenosis) persisting after UPPP in 58 % of the patients [2]. Due to resulting leaks and mouth dryness, UPPP is also considered as a risk factor for CPAP non-compliance.

In the era of the mini-invasive/conservative surgery, considering the increasing attention to the disregulation of the peripheral neuromuscular control of the upper airway contributing to pharyngeal collapse in OSAS [5], with the development of sophisticated treatments such as the neural stimulation of the upper-airway, which role should be reserved to a muscular resective procedure such as UPPP? Being aware of the uncertain results and the high postoperative morbidity of UPPP, are we still allowed to propose the resection of palatal/pharyngeal muscles and uvula?

The role of the excessive collapsibility of the lateral pharyngeal walls has become increasingly considered in the genesis of retropalatal OSAS [5]. Therefore the recent evolution of OSAS surgery has been focusing on the goal of obtaining the expansion and stabilization of the pharyngeal airspace through the reduction of the lateral

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pharyngeal walls collapsibility, rather than through the ablation of the “redundant” palato-pharyngeal soft tissues [6]. In 2012 we proposed a new surgical technique, the Barbed Roman Blinds Technique (BRBT), designed on three basic principles: the respect of the oropharyngeal fibro-muscular structures; the use of fibro-osseous holds (posterior nasal spine, hamuli of the pterygoid processes, pterygo-mandibular raphe); the application of knot-less barbed sutures to remodel the structure of the soft palate and lateral pharyngeal walls [7, 8]. The lack of bony support makes the upper airway vulnerable to collapse [6], especially during sleep: the barbed sutures, anchored to such bony holds, stiffen and remodel the soft palate and lateral pharyngeal walls, exploiting rather than resecting the surrounding muscular structures [7, 8]. The BRBT has been showing promising results and any postoperative complication was reported [8].

The upper airway, namely the soft palate and the pharyngeal walls, is a tridimensional and dynamic unit, involved in important functional roles (phonation, respiration, swallowing), and, in our opinion it should never be resected in order to treat snoring or OSAS. Further studies are needed to better understand how to manage the muscular component of upper airway in order to rehabilitate the retropalatal space in such patients.

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