

● ● ● ● LETTER TO THE DIRECTOR

PHARYNGEAL WALL EFFECTS OF SLEEP APNEA SYNDROME (OSAS) AND CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) MEASURED BY ULTRASONOGRAPHY

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Mr. Director:

Our initial objective was to know the role of ultrasonography in patients with obstructive sleep apnea syndrome (OSAS). The hypothesis of our work was:

- 1) The density of the lateral pharyngeal wall is greater for patients with OSAS than patients without the syndrome.
- 2) This density will lessen with the application of CPAP treatment.

In order to guarantee a good technique, an ultrasound scan of the neck was initially performed on 30 people without OSAS. The objective of this was to measure the distance between the common carotid artery and three points (A, B, C), which seemed the most likely to correspond to the pharyngeal wall. This was measured with a 3-5 Mhz curvilinear transducer, used to look for the posterolateral orientation. The distance to point A ranged from 1.2–5.7 mm. The distance to point B ranged between 2-7 mm, and to point C, between 3.6-8.7 mm (Table 1).

This range of values obtained through ultrasonography led us to assume that it would not be very rigorous to accept a measurement for the assessment of the lateral pharyngeal wall in OSAS and its changes when using CPAP as valid.

Subsequently, a patient underwent a computerized axial tomography (CAT) scan of the neck, followed by an ultrasound, and the measurements that were obtained from the common carotid artery to the pharyngeal wall were: right CAT: 11.7 mm; ultrasound: 5.7 mm. Left CAT: 9.7 mm; ultrasound: 7.2 mm.

After looking at CAT and MRI scans of the neck, which were done for other reasons, it was observed that the lateral pharyngeal wall is irregular and curvilinear. However, given that the resolution of these scans is much better than the ultrasound, we obtained reliable and concurrent values. Nevertheless, the high cost and radiation for both techniques makes it impossible to recommend this study.

Therefore, we believe the dispersion of the data obtained in the measurements of these thirty neck ultrasounds is caused by:

- 1) The irregular and curvilinear lateral pharyngeal wall.
- 2) Wall anfractuousness.
- 3) Reverberation of echoes.

Its comparison with the CAT scan and neck resonances leads us to conclude that it is not an adequate method of assessing the modifications of the lateral pharyngeal wall in OSAS and, therefore, we have ceased with the study.

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Table 1. Ultrasonography measurements from the common carotid artery to three approximate points in the lateral pharyngeal wall (A, B, C), in an area contiguous with the carotid bifurcation.

	MEAN	STANDARD DEVIATION
POINT A	3.22	+/- 1.30
POINT B	4.76	+/-1.43
POINT C	5.95	+/-1.71

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