

Snoring or bubbling?

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J.G. Widdicombe and A. Davies conducted an interesting study about snoring in a dog-model [1].

The authors speculated about the possibility of "Bubbling" which "may contribute to the sound of snoring".

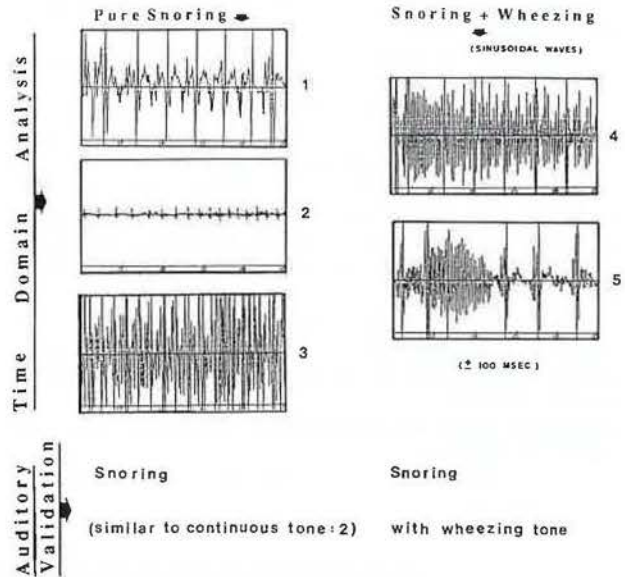
At the Thirteenth "International Conference On Lung Sounds" held, in Chicago, September 1988 we showed our results of spectral analysis of 1565 samples of snores recorded at night with the microphone attached to the sternal notch of patients with asthma, chronic obstructive pulmonary disease, obesity and sleep apnea syndrome, myxoedema, tonsillitis and apneic and non apneic snoring [2]. We systematized a classification of the different acoustic shapes of snoring. The figure shows the repetitive character of all snores which are different from the random merging of various crackles in vibration of secretions or bubbling.

Thus, spectral analysis may provide an accurate help to differentiate snoring from bubbling.

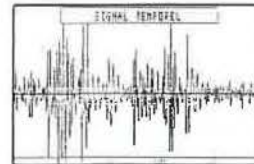
References

1. Widdicombe JG, Davies A. - Upper airways resistance and snoring in anaesthetized dogs. *Eur Respir J*, 1988, 1, 779-784.
2. Lens E, Postiaux G, Tran T. - When is a snore a wheeze? In: Proc. Thirteenth International Conference On Lung Sounds. Chicago, September 15-16, 1988.

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Typical tracheal bubbling crackles with random character of amplitude, spectrum frequency situation in time domain. In ordinate: amplitude In abscissa: time in msec