



Letter to the Editor

CT Densitometry in the Diagnosis of Otosclerosis

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Dear Editor,

I decided to write you a letter after I read the article of Ahmed Fathy Abdel-Ghany, Noha Mohamed Osman, and Samer Malak Botros, named "Correlation Between the Size, CT Density of Otosclerotic Foci, and Audiological Tests in Cases of Otosclerosis," which was recently published in your journal (Int Adv Otol 2014; 10(2): 156-61 • DOI: 10.5152/iao.2014.29).

As an author of a previously published clinical investigation on the CT densitometric diagnosis of otosclerosis (1), I always keep an eye on more recent publications in that field. I was surprised that our paper was not mentioned in the study above, since it not only was one of the first investigations in the field but also presented a new measurement parameter, in addition to previous ones. Since the conclusion of the study above is also not in agreement with our results, I would like to write you a brief letter about our paper.

In our study, which was published 18 years ago, we used three different methods of CT densitometry to determine the hypodense regions in the cochlea of otosclerotic patients. In this article, we proposed a new CT densitometry measurement parameter, in addition to those advised by Valvassori and later De Groot, which we called "2000 HU pixel frequency." We suggested using this parameter to determine the frequency of pixels lower than the normal density of the cochlear capsule, which is considered 2000 HU.

By using 2 previous methods and a novel densitometry method in 3 different groups of patients, we were able to reach 2 conclusions. First, a correlation was found between the location of the density change and the frequency topography of the sensorineural hearing loss (SNHL), since densitometric values were correlated with the bone conduction thresholds for certain frequencies.

Second, hypodense spongiotic regions were found to be consistent with a greater degree of SNHL, in contrast to hyperdense sclerotic ones, which were observed in ears with better cochlear reserves. This finding pointed out that spongiotic foci are responsible for the SNHL, in contrast to the sclerotic foci in ears with better cochlear reserves, supporting the hypothesis that the sclerotic phase may not be a healing process following the spongiotic phase and can be the first stage of the disease.

REFERENCES

1. Güneri EA, Ada E, Ceryan K, Güneri A. High-resolution computed tomographic evaluation of the cochlear capsule in otosclerosis: relationship between densitometry and sensorineural hearing loss. Ann Otol Rhinol Laryngol 1996; 105: 659-64. [\[CrossRef\]](#)

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