SMOOTHING FOR THE OPTIMAL SURFACE OF A 3D IMAGE MODEL OF THE HUMAN OSSICLES

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Abstract

human
ossicles. A 3D image model of the ossicles was reconstructed from high resolution computed tomography
imaging data. Three smoothing methods including constrained smoothing, unconstrained
smoothing and smoothsurface will be discussed. The volume of the 3D image model produced by unconstrained
smoothing differed substantially from the original model volume prior to smoothing. Constrained
smoothing had an uneven effect on the surface of the 3D image models. Using the smoothsurface
module, we were able to obtain an optimal surface of the 3D image model of the human ossicles including
the malleus, incus and stapes, using 20 iterations and a value of 0.6.

Keyword：Surface smoothing, Human ossicles, Middle ear, High resolution computed tomography