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Study on the flow in a nasal cavity based on the medical treatment image

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1 Background and Purpose

Recently, The medical treatment image device and the computer performance have improved to each stage. In adding image processing to the medical treatment image output from the medical treatment image device, The 3-dimensional geometric shape generation near the form of internal organs became possible. The Research on the flow in the living body using the shape near internal-organs form has come to be done.

In this paper, We paid attention to man's nasal cavity as a research interest. In clarifying the flow in the nasal cavity, it become possible to solve the role which the nasal cavity at breathing plays. From the site of the medical treatment, there is request of wanting to perform the simulation of the flow pattern by postoperative form. In the offer of information on the flow to the medical treatment site, It is useful for the illness medical treatment of respiratory organs. The visualization method of the organ of the medical treatment site makes three dimension volume data by extracting the organ in each slice section image and piling the image. In this method, information in the direction of the depth becomes scarce for the direction of the section screen. In the shape contracted from one direction,

the reproduction of shape in the direction of the depth is difficult. We propose this improvement method.

2 Method

In this reserch, we target my both nasal cavities. Both nasal cavity shape of three dimensions is constructed. Three dimension nasal cavity shape constructs the volume data which piles the medical application image. The face is made up by the marching cube method, and the nasal cavity shape of three dimensions is contracted. In this research, the method of improving the problem that reappearance of the nasal cavity form of the depth direction is difficult is proposed in the nasal cavity form built from one direction. It takes a image of the nasal cavity from the 2 course. Then the shape of two nasal cavities is constructed. By combining the shape of two nasal cavities, the part which did not go out by the shape of the nasal cavity in one direction is constructed. The combination method went by the addition match by the volume data.