

Symposium "Nasal function in relation to chronic nasal infection"

Moderator: Y. Uchida

Applied physiology of the nasal cavities

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Nasal respiratory physiology is important because if physiology is disturbed, symptoms can occur. The important concepts include the nasal cycle, nasal valves, areas of the nose, and upstream and downstream resistances.

Resistance is important because an elevated nasal resistance can produce symptoms as well as a diminished nasal resistance can be abnormal if the patient has atrophy which can also produce symptoms. Resistance (cm H₂O/L/sec) can be obtained using rhinomanometric methods.

The alternating congestion and decongestion of the nasal turbinates is termed the nasal cycle. The total nasal resistance remains constant while there is fluctuation in nasal resistance on each individual side. A valve is the device that controls the direction and flow of a fluid. In the nose, the valve area seems to be critical and includes that area bounded by the upper lateral cartilage, the nasal septum, the premaxilla, the floor of the nose, and the fibrofatty areolar tissue laterally. Any deformity of this valve area may produce symptoms of nasal respiratory insufficiency.

The areas of the nose include area 1 and area 2 as upstream resistances and comprise the caudal end of the septum and the nasal valve. The downstream areas are areas 3, 4 and 5 and include the vault, the septum in relationship to the turbinates and to the choana respectively. Small deformities in the upstream regions can produce significant disturbances in breathing.

In summary, nasal respiratory physiology is important because disturbed physiology produces symptoms. In conclusion, of all the factors involved in nasal respiratory physiology, resistance is probably the most important.

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